REGISTRATION REPORT

Part B

Section 3

Efficacy Data and Information

Concise summary

Product code: CA3642

Product name(s): Joust Pro

Chemical active substance(s):

Prothioconazole, 150 g/L
Azoxystrobin, 150 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorization)

Sponsor: Nufarm Crop Products UK Limited

Applicant: Nufarm Polska Sp. z o. o.

Submission date: 23/02/2023

MS Finalisation date: August 2023

update September 2024 (initial Core Assessment)

September 2024, update December 2024,

September 2025 (final Core Assessment)

Version history

When	What
February 2023	Version 1 - Applicant
March 2023	Version 1.2 - Correction of typo mistake in the reference list
August 2023	Initial zRMS assessment The report in the dRR format has been prepared by the Applicant, therefore all comments, additional evaluations and conclusions of the zRMS are presented in grey commenting boxes. Minor changes are introduced directly in the text and highlighted in grey. Not agreed or not relevant information are ~~struck through~~ and shaded for transparency. Following the evaluation and before sending the document for commenting, all coloured highlighting was removed, from the parts updated by the Applicant, for better legibility.
September 2024	Update following comments received by concerned Member States (highlighted in turquoise).
September 2024	Final report (Core Assessment updated following the commenting period) Additional information/assessments included by the zRMS in the report in response to comments received from the cMS and the Applicant are highlighted in yellow. Not agreed or not relevant information are ~~struck through~~ and shaded for transparency.
December 2024	Final report (Core Assessment updated following the second commenting period) No additional information or assessments after the commenting period.
September 2025	Amendments made to efficacy section BRSNW/SCLESC (pages 905-912) only for the attention of PL as cMS.
September 2025	Final report (Core Assessment updated following the amendments made to efficacy section) Additional assessments included by the zRMS in the report are highlighted in pink. Not agreed or not relevant information are ~~struck through~~ and shaded for transparency.

Table of Contents

3 Efficacy Data and Information (including Value Data) on the Plant Protection Product (KCP 6)

Transformation of the dRR (applicant version) into the RR (zRMS version)

Comments of zRMS:

Conclusions from the assessment were prepared using grey commenting boxes placed at the end of each chapter. Textual changes were done using grey highlights in the text. The parts of the text amended or added by the zRMS evaluator are highlighted in grey, whereas the parts struck off are ~~visibly marked with the grey font~~.

3.1 Summary and conclusions of zRMS on Section 3: Efficacy (KCP 6)

Abstract

Abstract of the evaluation, by the zRMS:

This application has been submitted for the authorization of new product CA3642 (Joust Pro) in Poland, Austria, Belgium, Czech Republic, Germany, Hungary, Ireland, Northern Ireland, Luxembourg, Netherlands, Romania and Slovakia. CA3642 contains two active substances: azoxystrobin (150 g/L) and prothioconazole (150 g/L). This product is indicated for the protection of spring and winter cereals and winter oilseed rape.

MED
Based on submitted trial results, it can be concluded that dose rate of 1,2 l/ha is MED for wheat, spelt, durum wheat, triticale and rye, whereas dose rate of 1 l/ha is MED for oat, barley and oilseed rape. Because the dose ranges are applied for the most uses, the higher dose rate may be recommended at higher disesae pressure.

Efficacy
According to the submitted trial results, it can be concluded that CA3642 is effective for control of disease pathogens in winter wheat (SEPTTR, ERYSGR/ERYSGT, PUCCRE/PUCCRT, PUCCST, PYRNTR), durum wheat (SEPTTR), winter triticale (SEPTTR, RHYNSE, ERYSGR), winter rye (PUCCRR/PUCCRE, RHYNSE), winter barley (ERYSGH, PUCCHD, PYRNTE, RAMUCC, RHYNSE), spring barley (ERYSGH, PUCCHD, PYRNTE, RAMUCC, RHYNSE) and winter oilseed rape (ALTEBA, ERYSCR, LEPTMA, SCLESC). The following uses were not assessed by the applicant in dRR and have been removed from the GAP table: winter wheat/LEPTNO, PSDCHE, MICDSP, durum wheat/PUCCRT, FUSASP, MICDSP, winter triticale/~~FUSASP,~~ MICDSP, winter rye/PSDCHE, MICDSP, oat/PSDCHE and barley/PSDCHE. Due to limited number of trials for some claimed uses, cMSs are kindly asked to consider them on national level.*

Selectivity
No special selectivity trials have been submitted by the applicant. All phytotoxicity assessments were provided in the efficacy trials. No negative symptoms have been noted in these trials. CA3642 is safe for the claimed cereal crops.

Resistance risk
The resistance management strategy for CA3642 is based on limited number of applications (max 2 application per season/crop) and use of alternation with products containing actives with different MoA. The general anti-resistance recommendations are presented in the chapter 3.3.

*Please note, that where a particular use is marked blue in the GAP table, it means that taking individual decision on that use by the respective cMS is welcome. It should not be meant as an off-loading, of the decision-taking, by the zRMS to the cMS. Instead, it aims at allowing the cMSs to take decisions different from that taken by zRMS for their own country, in recognition of the cMSs` different national requirements or preferences. Bearing that in mind, zRMS has discussed, in the commenting boxes, any doubtful issues, highlighting positive efficacy results where relevant, while also sharing with cMSs the reasons for which taking different decisions may be justified in different zones.
In case of the draft Registration Report there is still time for any cMS to express their view and argue, in favour or against the authorization in their country. That is why the zRMS is kindly asking the cMSs to not only take their decisions, but also to share the underlying information with the zRMS PL, within the commenting period framework. Only then will the zRMS be

able to complete the GAP table unambiguously, in the final Registration Report, for all the EPPO zones and for all the concerned Member States, for which the present dossier has been submitted.

Table 3.1-1: Acceptability of intended uses (and respective fall-back GAPs, if applicable)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
Zonal uses (field or outdoor uses, certain types of protected crops)														
1.	AT	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N PYRNTR FUSASP LEPTNO PSDCHE MICDSP All disease pathogens in spring wheat, spelt Spring wheat, spelt- possible authorization based on the art. 51- minor uses

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Fusarium spp. (FUSASP) *Microdochium spp.* (MICDSP)										C ~~PYRNTR~~ ~~FUSASP~~ All disease pathogens in ~~spring wheat, spelt,~~ einkorn wheat, emmer wheat and tritordeum
2.	BE	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N LEPTNO PSDCHE MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										C PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum
3.	CZ	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N LEPTNO PSDCHE MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										C PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum
4.	DE	Wheat (winter & spring) (within the group of wheat included: spelt, einkorn wheat, emmer wheat, durum wheat) (TRZAW& TRZAS) (TRZSP, TRZMO, TRZDI, TRZDU) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* (SEPTTR) Glume blotch *Septoria nodorum* (LEPTNO) Brown Rust *Puccinia recondita f. sp. tritici* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Erysiphe graminis* (ERYSGR) Tan Spot *Drechslera tritici-repentis* (PYRNTR) Head blight of cereals *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N PYRNTR LEPTNO MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
5.	DE	Wheat (winter & spring) (within the group of wheat included: spelt, einkorn wheat, emmer wheat, durum wheat) (TRZAW& TRZAS) (TRZSP, TRZMO, TRZDI, TRZDU) Tritordeum (TTOSS)	F	Head blight of cereals *Microdochium spp.* (MICDSP) Fusarium ear blight *Fusarium spp.* (FUSASP)	foliar spray	BBCH 61 – 69 (spring)	a) 1 b) 2	N/A	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35		N
6.	DE	Wheat (winter & spring) (within the group of wheat included: spelt, einkorn wheat, emmer wheat, durum wheat) (TRZAW& TRZAS) (TRZSP, TRZMO, TRZDI, TRZDU) Tritordeum (TTOSS)	F	*Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 32 (spring)	a) 1 b) 2	N/A	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35		N

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**	**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
7.	HU	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications The product has only moderate efficacy against PUCCRT/PUCCRE.	A SEPTTR, PUCCRT ERYSGR N LEPTNO PSDCHE MICDSP C PUCCST PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
8.	IE	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N LEPTNO PSDCHE MICDSP C PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
9.	LU	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N LEPTNO PSDCHE MICDSP C PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**			
10.	NL	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N LEPTNO PSDCHE MICDSP C PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**			
11.	NI	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/* *Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT PUCCST ERYSGR N LEPTNO PSDCHE MICDSP C PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**			
12.	PL	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR ERYSGR PUCCRT PYRNTR N PUCCST FUSASP LEPTNO PSDCHE MICDSP All pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum (possible authorization based on the art. 51- minor uses, excluding spring wheat)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
13.	RO	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT ERYSGR N LEPTNO PSDCHE MICDSP C PUCCST PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
14.	SK	Wheat (winter & spring) (TRZAW& TRZAS) Spelt (TRZSP) Einkorn wheat (TRZMO) Emmer Wheat (TRZDI) Tritordeum (TTOSS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Glume blotch *Stagonospora nodorum* (LEPTNO) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Yellow Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR) Eyespot *Oculimacula acuformis/ Pseudocercosporella herpotrichoides* (PSDCHE) Tan Spot *Pyrenophora tritici-repentis* (PYRNTR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCRT ERYSGR N LEPTNO PSDCHE MICDSP C PUCCST PYRNTR FUSASP All disease pathogens in spring wheat, spelt, einkorn wheat, emmer wheat and tritordeum

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
15.	AT	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR PUCCST/PUCCSI ERYSGR/ERYSGT N PUCCRT FUSASP MICDSP All pathogens in spring durum wheat Spring durum- possible authorization based on the art. 51- minor uses
16.	BE	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840	100-400	35	1-2 applications	A SEPTTR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**	**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				Puccinia recondita *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)						(360+360 – 420+420)				N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat
17.	CZ	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**			
18.	HU	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications Minor crop	A SEPTTR N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat
19.	IE	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N PUCCRT FUSASP MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				(ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										C PUCCSI ERYSGT All pathogens in spring durum wheat
20.	LU	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat
21.	NL	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840	100-400	35	1-2 applications	A SEPTTR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**	**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				Puccinia recondita *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)						(360+360 – 420+420)				N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat
22.	NI	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
23.	PL	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	N possible authorization based on the art. 51 – minor uses
24.	RO	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
25.	SK	Durum Wheat (TRZDU)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT) Yellow/stripe Rust *Puccinia striiformis* (PUCCST/PUCCSI) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGT) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N PUCCRT FUSASP MICDSP C PUCCSI ERYSGT All pathogens in spring durum wheat
26.	AT	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N RHYNSE FUSASP MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				(RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										C PUCCRT/PUCCRE ~~RHYNSE~~ PUCCST LEPTNO ERYSGR All pathogens in spring triticale Spring triticale-possible authorization based on the art. 51- minor uses
27.	BE	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				Application rate					
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**	**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				(RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N FUSASP MICDSP C PUCCRT/PUCCRE RHYNSE PUCCST LEPTNO ERYSGR All pathogens in spring triticale
28.	CZ	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Rhynchosporium secalis (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N FUSASP MICDSP C PUCCRT/PUCCRE RHYNSE PUCCST LEPTNO ERYSGR All pathogens in spring triticale
29.	DE	Triticale (winter & spring) (TTLWI&	F	Septoria leaf spot *Septoria tritici* (SEPTTR) Brown Rust *Puccinia recondite f. sp. tritici*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.4 b) 2.8	a) 420 (210+210) b) 840	150-400	35	1-2 applications	A SEPTTR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TTLSO)		(PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Septoria nodorum* (LEPTNO) Powdery mildew *Erysiphe graminis* (ERYSGR) Head blight of cereals						(420+420)				N PUCCRT/PUCCRE RHYNSE PUCCST ERYSGR LEPTNO FUSASP MICDSP
30.	DE	Triticale (winter & spring) (TTLWI& TTLSO)	F	*Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 61 – 69 (spring)	a) 1 b) 2	N/A	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35		N
31.	HU	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				(RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp*. (FUSASP) *Microdochium spp.* (MICDSP)										N FUSASP MICDSP
32.	IE	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp*. (FUSASP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N FUSASP MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**	**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				Microdochium spp. (MICDSP)										C PUCCRT/PUCCRE RHYNSE PUCCST LEPTNO ERYSGR All pathogens in spring triticale
33.	LU	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N FUSASP MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Microdochium spp. (MICDSP)										C PUCCRT/PUCCRE RHYNSE PUCCST LEPTNO ERYSGR All pathogens in spring triticale
34.	NL	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N FUSASP MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Microdochium spp. (MICDSP)										C PUCCRT/PUCCRE RHYNSE PUCCST LEPTNO ERYSGR All pathogens in spring triticale
35.	NI	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR N FUSASP MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**			
				Microdochium spp. (MICDSP)										C PUCCRT/PUCCRE RHYNSE PUCCST LEPTNO ERYSGR All pathogens in spring triticale
36.	PL	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A SEPTTR RHYNSE ERYSGR N PUCCRT/PUCCRE PUCCST LEPTNO FUSASP MICDSP All disease pathogens in spring triticale

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
37.	RO	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C N FUSASP MICDSP
38.	SK	Triticale (winter & spring) (TTLWI& TTLSO)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Brown Rust *Puccinia recondita* *Puccinia triticina* (PUCCRT/PUCCRE) Leaf blotch *Rhynchosporium secalis*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				(RHYNSE) Yellow Rust *Puccinia striiformis* (PUCCST) Glume blotch *Stagonospora nodorum* (LEPTNO) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N FUSASP MICDSP
39.	AT	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C SEPTTR PUCCRE/PUCCRR N RHYNSE ERYSGR FUSASP PSDCHE MICDSP All disease pathogens in spring rye Spring rye- possible authorization based on the art. 51- minor uses

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
40.	BE	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C N PSDCHE MICDSP
41.	CZ	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**	**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				recondita f. sp. recondita (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N PSDCHE MICDSP
42.	DE	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Septoria tritici* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Powdery mildew *Blumeria graminis* (ERYSGR) ~~Head blight of cereals~~	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35	1-2 applications	N SEPTTR PUCCRE/PUCCRR RHYNSE ERYSGR
43.	DE	Rye (winter & spring) (SECCW& SECCS)	F	*Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH ~~30~~ 61 – 69 (spring)	a) ~~2~~ 1 b) 2	14-21	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35	1-2 applications	N
44.	DE	Rye (winter & spring) (SECCW& SECCS)	F	*Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 32 (spring)	a) 1 b) 2	N/A	a) 1.4 b) 2.8	a) 420 (210+210) b) 840 (420+420)	150-400	35		N

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
45.	HU	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C N PSDCHE MICDSP
46.	IE	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				recondita f. sp. recondita (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N PSDCHE MICDSP
47.	LU	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C N PSDCHE MICDSP

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
48.	NL	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C N PSDCHE MICDSP
49.	NI	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				recondita f. sp. recondita (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N PSDCHE MICDSP
50.	PL	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	A PUCCRR/PUCCRE RHYNSE N SEPTTR ERYSGR FUSASP PSDCHE MICDSP All disease pathogens in spring rye (possible authorization based on the art. 51 - minor uses)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**			
51.	RO	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia recondita f. sp. recondita* (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C N PSDCHE MICDSP
52.	SK	Rye (winter & spring) (SECCW& SECCS)	F	Septoria leaf spot *Zymoseptoria tritici* *Mycosphaerella graminicola* (SEPTTR) Leaf blotch *Rhynchosporium secalis* (RHYNSE) Brown rust *Puccinia recondita/ Puccinia*	foliar spray	BBCH 30 – 69 (spring)	a) 2 b) 2	14-21	a) 1.2-1.4 b) 2.4-2.8	a) 360-420 (180+180 – 210+210) b) 720-840 (360+360 – 420+420)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				recondita f. sp. recondita (PUCCRE/PUCCRR) Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE) Powdery mildew *Blumeria graminis* (ERYSGR) Head blight of cereals *Fusarium spp.* (FUSASP) *Microdochium spp.* (MICDSP)										N PSDCHE MICDSP
53.	AT	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f. sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	N ERYSGA PUCCCO/PUCCCA PYRNAV PSDCHE All disease pathogens in winter oats Winter oats- possible authorization based on the art. 51- minor uses

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
54.	BE	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE
55.	CZ	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHA)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
56.	DE	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	150-400	35	1-2 applications	N ERYSGA PUCCCO/PUCCCA PYRNAV
57.	DE	Oat (winter & spring) (AVESW& AVESP)	F	Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 32 (spring)	a) 1 b) 2	N/A	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	150-400	35		N
58.	HU	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. aveane* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE
59.	IE	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. aveane* (~~ERYSGR~~ ERYSGA)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				Application rate					
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max	PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
				Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)										N PSDCHE
60.	LU	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f. sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE
61.	NL	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	Regulatory region	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safener/synergist per ha	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
62.	NI	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (ERYSGR ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE
63.	PL	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (ERYSGR ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	N
64.	RO	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (ERYSGR ERYSGA)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				Application rate					
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**	**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)										N PSDCHE
65.	SK	Oat (winter & spring) (AVESW& AVESP)	F	Crown Rust *Puccinia coronata* (PUCCCO/PUCCCA) Powdery mildew *Blumeria graminis f.sp. avenae* (~~ERYSGR~~ ERYSGA) Leaf spot of oat *Pyrenophora chaetomioides* (PYRNAV) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	C N PSDCHE
66.	AT	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Puccinia hordei (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)										N PSDCHE C ERYSGH
67.	BE	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis/Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE N PSDCHE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
														C ERYSGH
68.	CZ	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE N PSDCHE C ERYSGH

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
69.	DE	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	150-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE ERYSGH
70.	DE	Barley (winter & spring) (HORVW& HORVS)	F	Eyespot *Pseudocercosporella herpotrichoides* (PSDCHE)	foliar spray	BBCH 30 – 32 (spring)	a) 1 b) 2	N/A	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	150-400	35		N
71.	HU	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications The product has only moderate efficacy against PYRNTE.	A PUCCHD PYRNTE RAMUCC (winter) RHYNSE (spring) N PSDCHE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Pyrenophora teres (PYRNTE)										C ERYSGH RAMUCC (spring) RHYNSE (winter)
72.	IE	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE N PSDCHE C ERYSGH

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
73.	LU	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE N PSDCHE C ERYSGH
74.	NL	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Puccinia hordei (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)										N PSDCHE C ERYSGH
75.	NI	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC RHYNSE N PSDCHE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
														C ERYSGH
76.	PL	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A N PSDCHE
77.	RO	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC (winter) RHYNSE (spring)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Puccinia hordei (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch *Pyrenophora teres* (PYRNTE)										N PSDCHE C ERYSGH RAMUCC (spring) RHYNSE (winter)
78.	SK	Barley (winter & spring) (HORVW& HORVS)	F	Leaf spot of Barley *Ramularia collo-cygni* (RAMUCC) Eyespot *Oculimacula acuformis* *Pseudocercosporella herpotrichoides* (PSDCHE) Brown Rust *Puccinia hordei* (PUCCHD) Powdery mildew *Blumeria graminis* (ERYSGR/ERYSGH) Leaf Blotch *Rhynchosporium secalis* (RHYNSE) Net Blotch	foliar spray	BBCH 30 – 61 (spring)	a) 2 b) 2	14-21	a) 1.0 b) 2.0	a) 300 (150+150) b) 600 (300+300)	100-400	35	1-2 applications	A PUCCHD PYRNTE RAMUCC (winter) RHYNSE (spring) N PSDCHE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**	**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				Pyrenophora teres (PYRNTE)										C ERYSGH RAMUCC (spring) RHYNSE (winter)
79.	AT	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould*Botryotinia cinerea* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56	Only for ALTEBA and SCLESC: BBCH 60-69	A LEPTMA (autumn timing of application) N BOTRCI ERYSCR PYRPBR C SCLESC ~~ERYSCR~~ ALTEBA ~~PYRPBR~~ ~~BOTRCI~~
80.	BE	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-	100-400	56		A LEPTMA (autumn timing of application)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
				Erysiphe cruciferarum (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)						180+180)				C SCLESC ERYSCR ALTEBA PYRPBR BOTRCI
81.	CZ	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Brownish-grey mildew*Botryotinia fuckeliana* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) C SCLESC ERYSCR ALTEBA PYRPBR BOTRCI
82. a	DE	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Light leaf spot *Cylindrosporium concentricum* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.2 b) 1.2	a) 360 (180+180) b) 360 (180+180)	150-400	56		A LEPTMA (autumn timing of application) C ERYSCR PYRPBR BOTRCI

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
82.b	DE	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEP-TMA) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Light leaf spot *Cylindrosporium concentricum* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn)	a) 1 b) 1	N/A	a) 1.0 b) 1.0	a) 300 (150+150) b) 300 (150+150)	150-400	56		A LEPTMA N ERYSCR PYRPBR BOTRCI
82.c	DE	Winter Oilseed Rape (BRSNW)	F	Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Alternaria leaf spot *Alternaria brassicae* (ALTEBA)	foliar spray	BBCH 61 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.2 b) 1.2	a) 360 (180+180) b) 360 (180+180)	150-400	56		N
83.	HU	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) SCLESC (spring) ERYSCR (spring) ALTEBA (spring) C BOTRCI PYRPBR

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
84.	IE	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) C SCLESC ERYSCR ALTEBA PYRPBR BOTRCI
85.	LU	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) C SCLESC ERYSCR ALTEBA PYRPBR BOTRCI
86.	NL	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-	100-400	56		A LEPTMA (autumn timing of application)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation** **(crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled** **(additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number** **a) per use** **b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**g as/ha** **a) max. rate per appl.** **b) max. total rate per crop/season**	**Water L/ha** **min / max**	**PHI (days)**	**Remarks:** **e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
				Erysiphe cruciferarum (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)						180+180)				C SCLESC ERYSCR ALTEBA PYRPBR BOTRCI
87.	NI	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) C SCLESC ERYSCR ALTEBA PYRPBR BOTRCI
88.	PL	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH ~~20~~ 30– 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) ALTEBA (spring) SCLESC (spring) N ~~SCLESC~~ ERYSCR PYRPBR BOTRCI

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
89.	RO	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) SCLESC (spring) ERYSCR (spring) ALTEBA (spring) C BOTRCI PYRPBR
90.	SK	Winter Oilseed Rape (BRSNW)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		A LEPTMA (autumn timing of application) SCLESC (spring) ERYSCR (spring) ALTEBA (spring) C BOTRCI PYRPBR
Minor uses according to Article 51 (zonal uses)														

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
91.	AT	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
92.	BE	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
93.	CZ	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
94.	DE	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker Leptosphaeria maculans (LEPTMA) Sclerotinia stem rot Sclerotinia sclerotiorum (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Cylindrosporium concentricum* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.2 b) 1.2	a) 360 (180+180) b) 360 (180+180)	150-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
95.	HU	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56	Major crop	n.r.
96.	IE	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
97.	LU	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
98.	NL	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
99.	NI	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
100.	PL	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
101.	RO	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
102.	SK	Spring Oilseed Rape (BRSNS)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR) Grey mould *Botryotinia cinera* (BOTRCI)	foliar spray	BBCH 20– 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
103.	PL	Sunflower (HELAN)	F	Sclerotinia Stem rot *Sclerotinia sclerotiorum* (SCLESC) Grey mould *Botryotinia cinera* (BOTRCI)Stalk rot of sunflower *Diaporthe helianthi* (DIAPHE) Black stem of Sunflower *Plenodomus lindquistii* (LEPTLI)	foliar spray	BBCH 16– 64 (spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 240-360 (120+120 – 180+180) b) 240-360 (120+120 – 180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
104.	BE	Flax (for fiber production only) (LIUUT)	F	Powdery mildew flax *Erysiphe spp* (ERYSPP)	Foliar spray	BBCH 33 – 51	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	N/A		n.r.
105.	AT	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
106.	BE	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
107.	CZ	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
108.a	DE	Seed bearing plans: Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Cylindrosporium concentricum* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.2 b) 1.2	a) 360 (180+180) b) 360 (180+180)	150-400	56		n.r.
108.b	DE	Seed bearing plans: Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEP-TMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Cylindrosporium concentricum* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn)	a) 1 b) 1	N/A	a) 1.0 b) 1.0	a) 300 (150+150) b) 300 (150+150)	150-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
109.	HU	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
110.	IE	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
111.	LU	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					Application				**Application rate**					
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Method / Kind**	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**	**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
112.	NL	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
113.	NI	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
114.	PL	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use-No.	**Regulatory region**	**Crop and/ or situation (crop destination / purpose of crop)**	**F, Fn, Fpn G, Gn, Gpn or I**	**Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)**	**Application**				**Application rate**			**PHI (days)**	**Remarks: e.g. g safener/synergist per ha**	**zRMS Conclusion (efficacy)**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g as/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha min / max**			
115.	RO	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.
116.	SK	Linseeds, Poppy, Mustard and Gold of pleasure (LIUUT, ANMCO, SINAL, CMASA)	F	Phoma leaf spot/stem canker *Leptosphaeria maculans* (LEPTMA) Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC) Powdery mildew *Erysiphe cruciferarum* (ERYSCR) Alternaria leaf spot *Alternaria brassicae* (ALTEBA) Light leaf spot *Pyrenopeziza brassicae* (PYRPBR)	foliar spray	BBCH 14 – 18 (Autumn) or BBCH 20 – 69 (Spring)	a) 1 b) 1	N/A	a) 1.0-1.2 b) 1.0-1.2	a) 300 - 360 (150+150-180+180) b) 300 - 360 (150+150-180+180)	100-400	56		n.r.

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1.

** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

Column 15: zRMS conclusion.

A	Acceptable
R	Acceptable with further restriction
C	To be confirmed by cMS
N	Not acceptable / evaluation not possible
n.r.	Not relevant for section 3

3.2 Efficacy data (KCP 6)

Introduction

The purpose of this Biological Assessment Dossier is to support the application for registration of **CA3642** in the Central Registration zone. CA3642 is a SC formulation containing 150 g azoxystrobin/L and 150 g prothioconazole/L.

This document is submitted in view to a first authorization of the product.

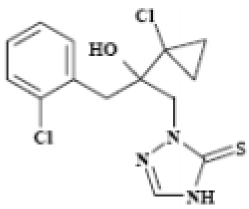
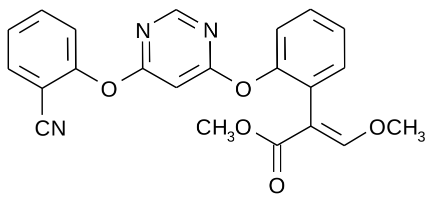
Central zone: This document will be evaluated by Poland as Zonal Rapporteur Member State (zRMS). Member States concerned by the authorization are Austria, Belgium, Czech Republic, Germany, Hungary, Ireland, Northern Ireland, Luxemburg, the Netherlands, Romania and Slovakia.

In order to support the registration of CA3642, a series of replicated small plot trials were conducted in the Maritime, North-East and South-East EPPO zones between 2019 and 2021 to demonstrate the effectiveness of CA3642 against the claimed target organisms. The data presented in this dossier support the label claim for CA3642 as summarized in the GAP table.

Description of active substances

Table 3.2-1 summarizes some general information on the active ingredient. For further physico-chemical properties, please refer to the Registration Report Part B Section 1, 2, 4: Identity, physical and chemical properties.

Table 3.2-1: Summary of information on the active ingredients co-formulated in CA3642

Active substance	Prothioconazole	Azoxystrobin
Systematic name	2-[2-(1-chlorocyclopropyl)-3-(2-chlorophenyl)-2-hydroxypropyl]-1,2-dihydro-3H-1,2,4-triazole-3-thione	Methyl (E)-2-{2[6-(2-cyanophenoxy)pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate
Chemical group	Triazolinthiones	Methoxy-acrylates
Mode of action	Interference with sterol biosynthesis in membranes	Inhibits the electron transport between cytochrome b and cytochrome c1.
Biological action	Systemic fungicide	Systemic fungicide
Molecular formula	$C_{14}H_{15}C_{12}N_3OS$	$C_{22}H_{17}N_3O_5$
Molecular formula		

Mode of action

Prothioconazole is a member of the FRAC fungicide Group 3 (G1-3) with mode of action of Sterol biosynthesis in membranes, C14-demethylase in sterol biosynthesis (erg11/cyp51). Specifically, prothioconazole is a triazolinthione DMI-fungicide (DeMethylation Inhibitors) (SBI: Class I). Prothioconazole is a systemic fungicide molecule which acts on the endoplasmic reticulum of the cell. The mode of action is interference with the synthesis of ergosterol in the target fungi by inhibition of CYP51, which catalyses demethylation at C14 of lanosterol or 24-methylene dihydrolanosterol, leading to morphological and functional changes in the fungal cell membrane.

Azoxystrobin is a member of the FRAC fungicide Group 11 (C3) with mode of action at respiration on target site complex III: cytochrome bc1 (ubiquinol oxidase) at Qo site (cyt b gene). The group is commonly referred to as QoI-fungicides (Quinone outside Inhibitors). These fungicides work by inhibiting the fungi's ability undergo normal respiration. QoI fungicides inhibit fungal respiration by binding to the cytochrome b complex III at the Q0 site in mitochondrial respiration. Specifically, azoxystrobin is from the methoxy-acrylate chemical group and works by blocking electron transfer between cytochromes b and c1. Azoxystrobin is systemic and is absorbed through the roots of the weed and translocated in the xylem throughout the plant.

Table 3.2-2: Details of the active substances

Active substance	Prothioconazole	Azoxystrobin
Concentration (Unit: g/kg or g/L...)	150 g/L	150 g/L
Chemical group	Triazolinthiones	Methoxy-acrylates
Mode of action	Interference with sterol biosynthesis in membranes	Inhibits the electron transport between cytochrome b and cytochrome c1.
Mode of action group	Group 3	Group 11
Biological action	Systemic fungicide	Systemic fungicide

Description of the plant protection product

CA3642 is a suspension concentrate (SC) formulation containing 150 g prothioconazole and 150 g azoxystrobin per litre product.

Table 3.2-3: Simplified table of currently registered uses and requested uses for the product code.

Uses		Member State	Requested rate(s)	Comments / Other relevant details on GAPs
Crop(s)	Target(s)			
Wheat (winter and spring) Einkorn wheat Emmer wheat Tritordeum	*Zymoseptoria tritici* *Parastagonospora a nodorum* *Puccinia recondita/Puccinia triticina* *Puccinia striiformis* *Blumeria graminis* *Oculimacula acuformis* *Pyrenophora tritici-repentis* *Fusarium spp.* *Microdochium spp.*	AT BE CZ HU IE NI LU NL PL RO SK	1.2 – 1.4 L/ha	Article 33
Wheat (winter & spring) (within the group of wheat included: spelt, einkorn wheat, emmer wheat, Tritordeum	*Zymoseptoria tritici* *Septoria nodorum* *Puccinia recondite f. sp. tritici* *Puccinia striiformis* *Erysiphe graminis* *Pyrenophora tritici-repentis* *Microdochium spp.* *Fusarium spp. Pseudocercosporella herpotrichoides*	DE	1.2-1.4 L/ha	Article 33

Uses		Member State	Requested rate(s)	Comments / Other relevant details on GAPs
Crop(s)	**Target(s)**			
Spelt (TRZSP)	*Zymoseptoria tritici* *Parastagonospora a nodorum* *Puccinia recondita/Puccinia triticina* *Puccinia striiformis* *Blumeria graminis* *Oculimacula acuformis* *Pyrenophora tritici-repentis* *Fusarium spp.* *Microdochium spp.*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.2 – 1.4 L/ha	Article 33
Wheat durum	*Zymoseptoria tritici* *Mycosphaerella graminicola* *Puccinia recondita/Puccinia triticina* *Puccinia striiformis* *Blumeria graminis* *Fusarium spp.* *Microdochium spp.*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.2-1.4 L/ha	Article 33
Triticale	*Zymoseptoria tritici* *Rhynchosporium secalis* *Puccinia recondita* *Puccinia striiformis* *Blumeria graminis* *Stagonospora nodorum* *Fusarium spp.* *Microdochium spp*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.2 – 1.4 L/ha	Article 33
Rye (winter and spring) SECCW/SECCS	*Zymoseptoria tritici,* *Rhynchosporium secalis,* *Puccinia recondita f. sp. recondita,* *Blumeria graminis,* *Fusarium spp.,* *Microdochium spp.,* *Oculimacula acuformis,*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.2-1.4 L/ha	Article 33
Oat (winter & spring) AVESS	*Puccinia coronata* *Blumeria graminis f. sp. avenae* *Pyrenophora chaetomioides* *Oculimacula acuformis*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.0 L/ha	Article 33
Barley (winter) HORVW	*Ramularia collo-cygni* *Puccinia hordei* *Blumeria graminis f. sp. hordei* *Rhynchosporium secalis* *Pyrenophora teres* *Oculimacula acuformis*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.0L/ha	Article 33
Spring Barley HORVS	*Ramularia collo-cygni* *Puccinia hordei* *Blumeria graminis f. sp. hordei* *Rhynchosporium secalis* *Pyrenophora teres* *Oculimacula acuformis*	AT, BE, CZ, DE, HU, IE, LU, NL, NI, PL, RO, SK	1.0 L/ha, 1-2 per season	Article 33
Oilseed rape (winter and spring) BRSNW/BRSNS	*Leptosphaeria maculans* *Sclerotinia sclerotiorum* *Erysiphe cruciferarum* *Alternaria brassicae* *Pyrenopeziza brassicae* *Botryotinia cinerea*	AT, BE, CZ, DE*, HU, IE, LU, NL, NI, PL, RO, SK	1.0-1.2 L/ha, 1 per season	Article 33

*Only ERYSCR and PYRPBR are claimed in BRSNS in DE

Further details are in the table “All intended uses” in Part B - Section 0.

Description of the target pests

Table 3.2-4: Glossary of pests mentioned in the dossier.

EPPO code	Scientific name	Common name*
ALTEBA	*Alternaria brassicae*	Dark leaf spot
BOTRCI	*Botrytis cinerea*	Grey mould
ERYSCR	*Erysiphe cruciferarum*	Powdery mildew of crucifers
ERYSGH	*Blumeria graminis f. sp. hordei*	Powdery mildew of barley
ERYSGR	*Blumeria graminis*	Powdery mildew of cereals
ERYSGA	*Blumeria graminis (var avenae)*	Powdery mildew of oat
ERYSGT	*Blumeria graminis* f. sp. *tritici*	Powdery mildew of wheat
FUSASP	*Fusarium spp.*	Head blight of cereals
FUSACU	*Fusarium culmorum*	Ear blight
GIBBZE	*Fusarium graminearum*	Ear blight
MICDSP	*Microdochium spp.*	Head blight of cereals
LEPTMA	*Plenodomus lingam*	Black leg
LEPTNO	*Parastagonospora nodorum*	Glume blotch
PUCCCO (PUCCCA)	*Puccinia coronata (var. avenae)*)	Crown Rust of oat
PUCCHD	*Puccinia hordei*	Brown Rust of barley
PUCCRE	*Puccinia recondita*	Brown Rust of cereals
PUCCRR	*Puccinia recondita f. sp. recondita*	Brown Rust of rye
PUCCRT	*Puccinia triticina*	Brown Rust of wheat
PUCCSI	*Puccinia striiformis f. sp. tritici*	Yellow/Stripe rust of wheat
PUCCST	*Puccinia striiformis*	Yellow/Stripe rust of cereals
PSDCHA	*Oculimacula acuformis*	Eyespot of cereals
PYRNAV	*Pyrenophora chaetomioides*	Leaf spot of oat
PYRNTE	*Pyrenophora teres*	Net Blotch (barley)
PYRNTR	*Pyrenophora tritici-repentis*	Tan-spot of cereals
PYRPBR	*Pyrenopeziza brassicae*	Light leaf spot
RAMUCC	*Ramularia collo-cygni*	Leaf spot of Barley
RHYNSE	*Rhynchosporium secalis*	Leaf blotch of cereals
SCLESC	*Sclerotinia sclerotiorum*	Cottony rot
SEPTTR	*Zymoseptoria tritici*	Septoria leaf spot

- **Dark Leaf Spot – *Alternaria brassicae* (ALTEBA)**

(Agriculture and Horticulture Development Board AHDB – Brassica diseases, 2020)
(Encyclopedia of oilseed rape diseases, ADAS & BASF, 2009)

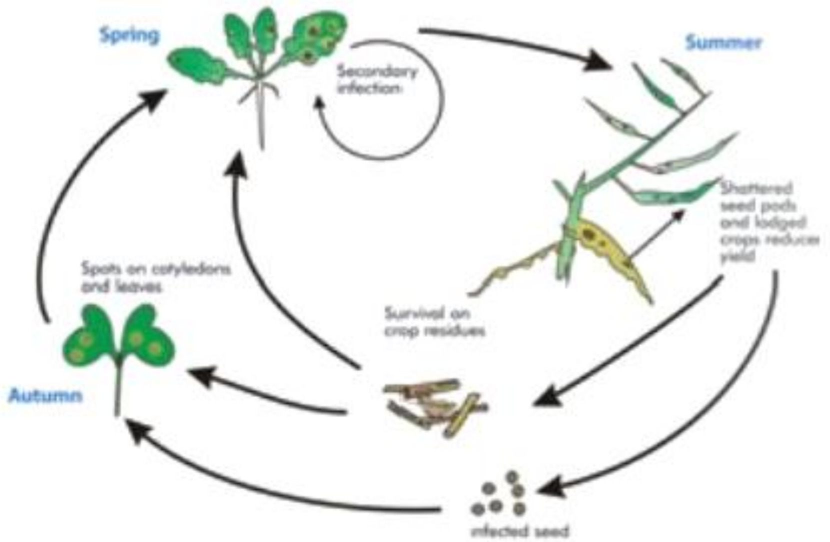
<u>Generalities:</u>
Alternaria brassicae is the causal agent of dark leaf spot disease in oilseed rape. The fungus belongs to the phylum Ascomycota and to the class Dothideomycetes. *A. brassicae* is characterized by formation of polymorphous conidia either singly or in short or longer chains with longitudinal and transverse septa with long or short beaks.
In European countries involved in oilseed rape production, this disease is very common. Weather conditions, especially air temperature and precipitation, have a great effect on Alternaria blight severity in

different years. When the air temperature varies within optimal range (15–23°C), precipitation rate and relative air humidity during the silique ripening period have a decisive effect.
Alternaria blight is especially dangerous if it spreads early and affects young siliques and seed. The yield loss is related to the severity of pod symptoms.

Symptoms:
Small black spots (1-2 mm diameter) are the first symptoms. These gradually increase in size and become brown 'target' spots with concentric light and dark brown rings. Secondary spotting often occurs around the target spot and is useful for showing the range of lesion sizes. Leaf spotting can be very extensive and lead to early leaf loss.
During flowering, leaf symptoms may develop in the upper leaves and bracts and it is often easier to identify them by examining the underside of the leaf where there is less floral debris occurring the leaf surface.
Black spots develop on the stem and pods. As pod symptoms develop, they become brown in colour and lead to premature ripening and pod splitting when severe. Dark pod spot is more prevalent where the crop is lodged and remains damp for long periods. However, even in a standing crop, pod symptoms become severe and often occur in distinct patches or foci. The disease increases as plant senesce and continues to increase after swathing.

Life cycle & Epidemiology:

***Alternaria brassicae* life cycle**



A. brassicae is commonly seedborne but there are numerous sources of infection including crop residues, neighbouring brassica crops, volunteers and weed hosts. Air-borne spores introduce the pathogen into new crops then secondary spread occurs within the crop. Early sown crops tend to be more heavily infected than later sown crops. There is usually slow spread during the autumn and winter followed by spread to upper leaves, stem and pods from flowering onwards. Problems occur mainly in untreated crops and in periods of wet weather from flowering onwards. Only 6-8 hours of surface wetness are required for infection to take place and symptoms appear in 4-5 days at temperatures above 20°C. Thunderstorms provide good conditions for epidemic development.
During harvesting operations, large numbers of air-borne spores of *A. brassicae* are dispersed and can cause problems in spring oilseed rape. The fungus can be also disseminated from infected host tissue by means of spores produced on mature fungal lesions. Spore dispersal can occur by a number of mechanisms, including air currents, rain splash or dew droplets. Dispersal in the air is potentially over much greater distances than by rain splash. Spores of dark leaf spot have been shown to travel at least 1.8 km from their source.

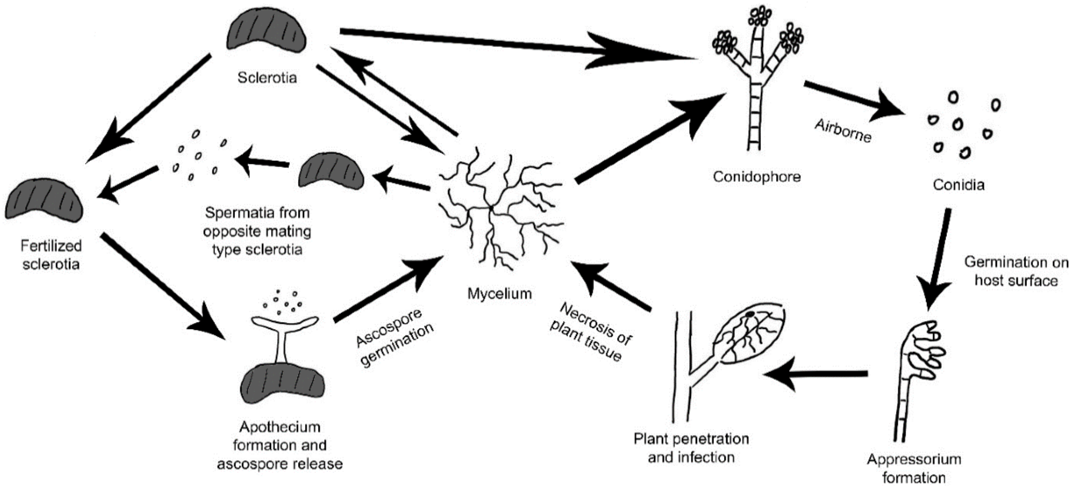
The fungus requires at least 12–14 hours with a relative humidity of greater than 90% for sporulation to occur. The sporulation rate is optimal between 18°C and 24°C. Sporulation is inconsistent at 26°C and spores formed at this temperature are often not viable. Sporulation by *A. brassicicola* is observed over a greater temperature range, from 18°C up to 30°C. However, time to 50% spore production is greater over the lower temperature ranges, indicating a higher temperature optima for this species. No sporulation by either pathogen is observed below 5°C.
Viable spores landing on healthy plant tissue germinate on and penetrate the host surface through the stomata.

- **Grey mould of crucifers – *Botrytis cinerea* (BOTCRI)**

(Williamson, B., Tudzynski, B., Tudzynski, P. & Van Kan, J. A. Botrytis cinerea: the cause of grey mould disease. *Molecular Plant Pathology*, 2007).

Botrytis cinerea (teleomorph: *Botryotinia fuckeliana)* is an airborne plant pathogen with a necrotrophic lifestyle of the order: Helotiales, and the family: Sclerotiniaceae. Over 200 mainly dicotyledonous plant species, including important protein, oil, fibre and horticultural crops, are affected in temperate and subtropical regions. It can cause soft rotting of all aerial plant parts, and rotting of vegetables, fruits and flowers post-harvest to produce prolific grey conidiophores and (macro)conidia typical of the disease.
It is most destructive on mature or senescent tissues of dicotyledonous hosts, but it usually gains entry to such tissues at a much earlier stage in crop development and remains quiescent for a considerable period before rapidly rotting tissues when the environment is conducive and the host physiology changes. Therefore, serious damage is caused following harvest of apparently healthy crops and the subsequent transport to distant markets where the losses become evident.
B. cinerea is difficult to control because it has a variety of modes of attack, diverse hosts as inoculum sources, and it can survive as mycelia and/or conidia or for extended periods as sclerotia in crop debris.

Life cycle and epidemiology
Sclerotia develop within dying host tissues and represent an important survival mechanism in B. cinerea, but they are very variable in size, and are not readily apparent in all susceptible crops. The melanized rind and β-glucans encasing the internal mycelium protect sclerotia from desiccation, UV radiation and microbial attack over long periods Sclerotia commence growth in early spring in temperate regions to produce conidiophores and multinucleate conidia serving as a primary source of inoculum within a crop. Mycelium also survives within infected dead host tissues left as crop debris and inside some seeds to serve as primary inoculum. In perennial crops, the dead leaves, flowers and mummified fruits contain masses of mycelium that can often be ideally situated within a crop canopy to produce conidia and initiate infections. The pathogen also forms microconidia from phialides abundantly in ageing cultures, which function primarily as spermatia. The sexual cycle involves the spermatization of sclerotia, leading to the production of apothecia and asci with eight binucleate ascospores.



Conidia generated at the sources of primary inoculum follow a well-defined diurnal cycle of initiation, production and dissemination that is regulated by fluctuations in temperature and humidity; a rapid decline in humidity with rise in temperature in early morning causes twisting and drying of conidiophores to eject conidia into air currents either individually or in small clumps. Water droplets can also disperse conidia, but this is probably not a major dispersal method. Conidia formation is stimulated by specific wavelengths of light and near UV is now generally used to induce sporulation in culture. However, some isolates can sporulate in darkness. Conidia can move on air currents from neighbouring crops, yet most conidia are probably generated from primary sources within the crop. As in many fungi, the conidia contain a self-inhibitor and need to be washed to induce high germination rates in vitro.

B. cinerea shows remarkable flexibility in its use of different environments to germinate and obtain nutrients from a host plant. B. cinerea is able to form appressoria but they are distinct from the classical types found in Colletotrichum or Magnaporthe. *B. cinerea* germlings do contain melanin in the extracellular matrix which is loosely associated with the fungal cell wall but they do not contain a wall that seals the appressorium from the germ tube, as would be required to enable generating extremely high osmotic pressures. It is therefore not feasible for *B. cinerea* appressoria to penetrate host tissue by physical pressure alone. If the fungus is growing strongly from a 'saprophytic base' (dead adhering petal, 'bunch trash' in grapes, pollen grains) it can form dome-shaped infection cushions on the host.

The role of insect vectors for *B. cinerea* has been recognized only in the last 20 years. In grapes there are several insects known to disperse viable conidia, either on their external appendages or even inside the gut, to deposit inoculum on the surface of fruits.

Control

Grey mould is exacerbated by high humidity, reduced light and moderate temperature. Hence it is helpful in crop management to create an open canopy to provide adequate air movement and good light interception so that water droplets from rain or irrigation dry as soon as possible. High RH promotes conidial generation and allows germination and penetration of the host. Cultural practices that alleviate the effects of grey mould are diverse and often specific to particular species and cropping systems.

Five categories of fungicides are recognized, as effective against grey mould, namely those affecting respiration, microtubule assembly, osmoregulation, sterol biosynthesis inhibitors and those whose toxicity is reversed by amino acids. Strobilurin fungicides that inhibit cytochrome b control B. cinerea and have the advantage that they are broad-spectrum fungicides potentially controlling several diseases.

- **Powdery mildew of crucifers - *Erysiphe cruciferarum* (ERYSCR)**

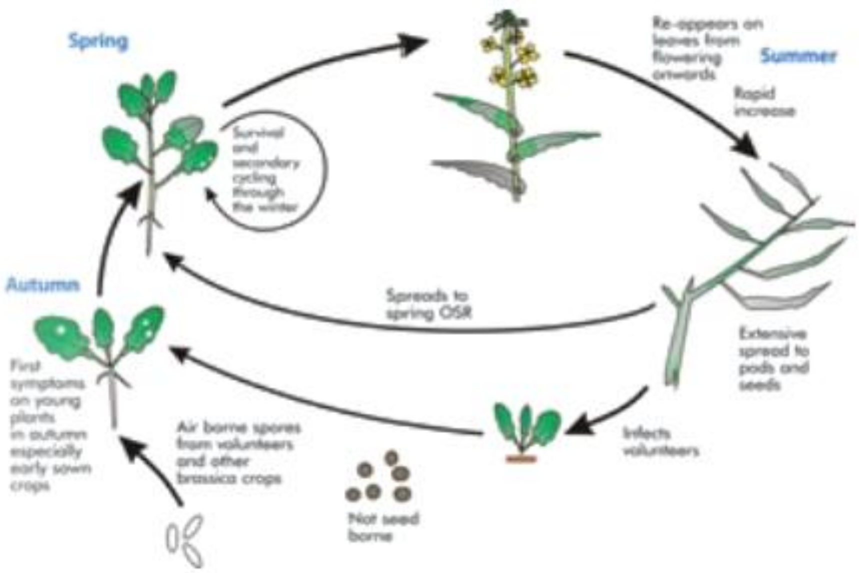
(Mehta NK., Development of prediction models for the management of rapeseed-mustard diseases- Current scenario. *Plant Disease Research*, 2020).
(Encyclopedia of oilseed rape diseases, ADAS & BASF, 2009)

Generalities:
Powdery mildew disease of oilseed brassicas, caused by *Erysiphe cruciferarum*, an obligate pathogen. The disease is a widespread, although sometimes sporadic, problem affecting Brassica crops in Europe. Yield losses as high as 25–30% can occur, particularly when seed pods are attacked, reducing both the number and size of seeds.
The disease does not cause much damage except during epidemic outbreak on late sown crop especially when it appears at early stage of the crop growth. The pods heavily covered with powdery mass remained empty or produced few seeds at base with twisted sterile tips.

Symptoms:
Discrete off-white patches appear on the leaves, and often the stems and buds. These patches join up and a powdery white coating develops. Leaves can curl at the margins, becoming distorted, or turn yellow or purple and fall early. Infected parts may wither and die back.

Life cycle & Epidemiology:

Erysiphe cruciferarum **life cycle**



The off season host plants of Brassica species and other weed may carry the fungal mycelium and conidia as source of primary inoculum. This pathogen is an obligate parasite and produces abundant number of cleistothecia on diseased plant tissues at the maturity stage of the crop. The secondary spread of the pathogen takes place through air borne conidia. Long distance dissemination of the pathogen is rapid through wind currents under low humid conditions. Conidia fallen on the host tissues germinate, grow and spread in the form of mycelium, later producing conidiophores and conidia in the form of white mildew growth. It is likely to carry over from season to season through cleistothecia or as mycelium on volunteer plants.
The optimum temperature for the germination of conidia, germ-tube growth and appressorium formation is 20-25°C. Conidia could not germinate below 15°C and above 30°C. Maximum conidia germinate at 40 to 50% of moisture. To initiate the spore germination, at-least 30% of relative humidity is essential and there is no conidial germination above 60% RH. Conidial germination is not influenced by light and darkness. For onset and epidemic development of disease under field conditions, moder-

ate temperature, low humidity, minimum rainfall or dry season are more favourable. The cleistothecial formation is favoured by alternating low and moderate temperature. Heavy sporulation took place with low nutrition of the host, low relative humidity, dry soil and aging of the host.
There are number of environmental factors which are very crucial to influence the powdery mildew development of crucifers in to epidemic form after host-pathogen interaction. These factors determine the progress of powdery mildew on host plants with their influence, and effects on interacting partners, host, and pathogen.
Infection, and disease development is faster with the influence of mean temperature (16-22°C), minimum temperature (>7°C), maximum temperature (25-28°C), relative humidity (27-65%), sunshine hours (>9h/day) and wind velocity (2km/h). Infection rate increases with ageing host tissues. There is no infection on younger than 37 days host, and freshly emerging new leaves. Disease develops at fast rate if host, and pathogen interact coinciding with favourable host age, plant growth stages, and environmental factors. Stem infection is maximum with the increase in length of time they are exposed to the pathogen, and maturity level of the host.
Symptoms are visible at asexual stage with the development of pathogens mycelium, conidiophores, and conidia on host surface. Date of crop planting has significant bearing on disease epidemiology under late sown conditions coinciding with congenial, and critical factors at 40-120 days after sowing. Sexual stage appears in the form of dark brown spherical bodies of cleistothecia or chasmothecia embedded in powdery mass of host leaf, stem, and pods at maturity stage of crop when temperature is 11-27°C (19°C), alternate moderate temperature, heavy sporulation, low host nutrition, low relative humidity, dry soil, and ageing host tissues.

- **Powdery mildew of cereals – *Blumeria graminis* (ERYSGR) / *Blumeria graminis f. sp. tritici* (ERYSGT) / *Blumeria graminis f. sp. hordei* (ERYSGH)**

(Pietrusinska A. and Tratwal A, Characteristics of powdery mildew and its importance for wheat grown in Poland, *Plant Protection Science*, 2020)
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

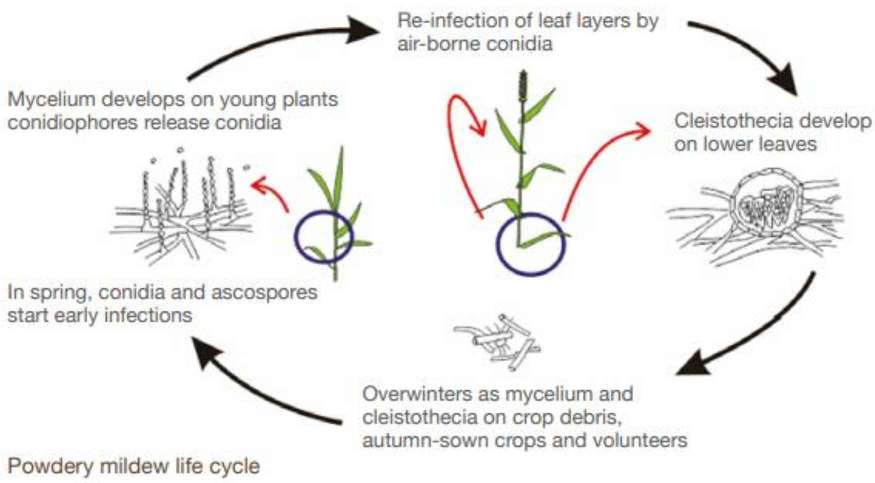
Generalities:
Powdery mildew is widespread and affects various plant species in different climatic zones. The disease is common in cereals and many species of grasses. This is one of the most dangerous fungal disease of wheat and barley, every year causing losses in yield volume and quality. It is less damaging to oats and rye, and until recently did not affect triticale. Powdery mildew of cereals and grasses is becoming more and more important in the times of climate change. The causal agent is *Blumeria graminis*, an *Ascomycota* that belongs to the *Erysiphaceae* family.
Late-sown winter wheat crops are often particularly prone to attack, especially when growing rapidly in the spring. High levels of nitrogen fertiliser encourage the disease and mildew can be particularly severe in dense crops. In susceptible varieties, yield losses can be high, up to 20%. However, the disease generally causes much smaller yield losses and late attacks (after flowering) on the flag-leaf and ear rarely cause significant losses.

Symptoms:
The first symptoms of powdery mildew of cereals and grasses develop on winter cereals in late autumn or early spring. These symptoms are characterized by a powdery fungal growth, white to grey, on leaves, stems and heads. As the plant matures, the white powdery growth changes to a grey-brown colour.
Infection spreads gradually from the lower leaves to higher parts of the stem and the most severe symptoms of powdery mildew are observed on the lower leaves. Initially, small, fluffy white-grey pustules develop on the surface of leaves or underneath leaves. The leaf tissue on the opposite side of the leaf from the white mold growth becomes yellow, later turning tan or brown. Small, black fruiting bodies (cleistothecia) develop on leaves as plants mature. Cleistothecia, recognized as distinct round, black dots within older, grey colonies of powdery mildew, contain ascospores that will serve to infect then.

Over time, the disease progresses, and under favourable weather conditions, white fluffy pustules cover increasingly larger area of leaves, sheaths, stems and ears. The scurf on infected parts of plants is white, later turning grey and farinose. Severely infected leaves become chlorotic and gradually die back. In a darkening scurf, small dark brown or black chasmothecia can be seen.

Life cycle & Epidemiology:

Figure 3.2-5: *Blumeria graminis* life cycle



The *B. graminis* life cycle has two stages – ascosporal and conidial. In the ascosporal stage the fungus produces dark brown or black ascocarps (perithecia or cleistothecia or chasmothecia) 135 to 224 µm in diameter. Chasmothecia are covered with filamentous appendages and contain 8–25 asci 70–100 × 25–40 µm in size. Ascospores formed in asci in late summer or early autumn are ovoid, single-celled and 20–23× 10–13 µm in size. After rainfall, ripe ascocarps break open and release ascospores that infect grass, volunteer cereal plants and germinating winter crops. A white scurf on the infected plant is formed by mycelium, conidiophores and conidia. The pathogen overwinters as mycelium on winter cereals, volunteer plants and wild grasses and can survive until the next growing season. In the spring, the growing mycelium produces conidiophores and conidia that spread infection to new plants. Conidia are colourless, ellipsoid, 24–35 × 12–17 µm in size and arranged in chains on conidiophores formed by hyphae growing on the surface of leaves. The dense mycelium of greyish colour is gradually formed.
B. graminis is an ectoparasite and its sporulation is favoured by dry and warm weather. The fungus assimilates nutrients necessary for its growth and development using haustoria penetrating epithelial cells of the host plant. Plants are infected in a wide temperature range of 5 to 30 °C and air humidity of 50–100%, but the optimal conditions are 12–20 °C and high humidity. Powdery mildew produces conidia as often as every 7 to 10 days.
In regions where chasmothecium are an important source of infection (e.g. southern Europe), asci are released from the perithecium under favourable weather conditions and give rise to primary infections. Fungal spores can be dispersed by wind for several hundred kilometres, initiating many successive cycles of secondary infections during the growing season.

- **Black leg - *Plenodomus lingam* (LEPTMA)**

(Howlett BJ, *et al*. *Leptosphaeria maculans*, the causal agent of blackleg disease of brassicas. *Fungal Genetics & Biology*, 2001).
(Ash, G. Blackleg of oilseed rape. *The Plant Health Instructor*, 2000)

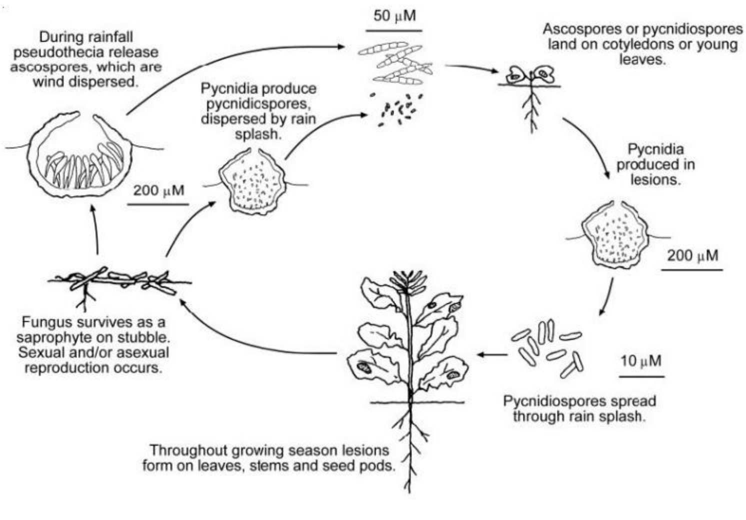
Generalities:

Plenodomus lingam or *Leptosphaeria maculans* is able to cause phoma stem canker (or black leg) on different winter and spring cultivars of oilseed rape grown under a wide range of climates and despite different agricultural practices.
The disease is of major economic importance in the main oilseed rape growing areas in Europe and the severity of epidemics differs greatly between seasons, between regions and between crops. Where the disease occurs, total destruction of the crop due to seedling death is rare and usually yield losses at harvest are 10%, although they can reach 30-50%.

Symptoms:
In oilseed rape, the first obvious symptom of blackleg is the appearance of grey-green to ash-grey lesions on the lower leaves. The disease is characterized by the presence of small, black pycnidia at the edge or scattered across the blackleg lesions. Tissue in a lesion may dry, crack, and fall out, making identification difficult. Blackleg lesions from multiple infections may coalesce and these lesions often expand down leaf veins towards the base of the leaf. In severe epidemics, lesions also can be found on the stems and pods of oilseed rape plants.
Basal stem lesions are the most damaging. When these occur in the seedling or rosette phases of growth, symptoms resemble damping-off or cut-worm damage. In older plants, the more typical canker symptom leads to premature ripening or lodging of the crop.

Life cycle & Epidemiology:

***Plenodomus lingam.* life cycle**



L. maculans has a complex life cycle compared to most other fungal phytopathogens attacking annual plants. It can infect different plant tissues, undergo multiple switches from biotrophy to necrotrophy in plant tissues, and can also live as a saprophyte on plant residues.
The epidemiological cycle begins with the hemibiotrophic colonisation of young leaves by spores generated by sexual reproduction (ascospores) in early autumn (October-November). Ascospores are released after rainfall when temperatures are between 8-12ºC. These spores can be wind-dispersed for hundreds of meters and germinate in the presence of free water from 4-28ºC. Penetration is through stomates.
The fungus first colonises the leaf tissues as a biotroph, for a few days or weeks, depending on the climatic conditions, without causing any symptoms. The fungus invades the intercellular spaces between the epidermal layers of the leaf. This symptomless biotrophic phase is followed by invasion of the mesophyll with the resultant death of cells and the appearance of grey-green lesions. The hyphae continue to ramify through the leaf tissue until they reach a leaf vein. The fungus then colonises the cortex and/or xylem parenchyma of the petiole. At the junction of the petiole and the stem, the fungus invades the stem cortex where it causes a canker.

It then induces the development of necrotrophic leaf lesions in which its asexual spores (conidia) are produced. The fungus then migrates, without causing symptoms, from the petiole to the stem, where it lives in the plant tissues, as an endophyte, for several months. Finally, at the end of the growing season, it switches back to necrotrophic behaviour, inducing the formation of a damaging stem canker that may result in plant lodging. Stem cankers develop most quickly at 20-24ºC and are most severe under stress conditions such as mechanical, insect, or herbicide injury.
The pycnidiospores are dispersed to new infection sites by rain splash. Pycnidia can and do overwinter readily in stubble, but because pycnidiospores are not airborne to any significant extent, they are of minor importance in initiating the first cycle of disease. Pycnidiospores germinate more slowly than ascospores and require more than 16 hr of continuous wetness at the optimal temperature range of 20-25°C. The minimum latent period (the time from infection to the production of new inoculum) following infection by pycnidiospores is 13 days. Although secondary infections by pycnidiospores do occur, most losses are due to primary infections of leaves by ascospores that lead to basal stem cankers and eventual lodging of the plants.
Having completed all these stages of infection on living plant tissues, *L. maculans* then switches to a saprotrophic lifestyle, living on crop residues for up to three years. It develops structures for sexual reproduction to create the new inoculum (ascospores) for subsequent seasons on these residues.
The pathogen also may be seedborne and infected seeds can give rise to infected seedlings, but levels of seed contamination are always very low. Primary infections usually occur on the cotyledons or basal rosette leaves of the plant. Wet weather favours these primary infections.

- **Crown rust of oats – *Puccinia coronata (var. avenae)* (PUCCCO/PUCCCA)**

(Nazareno E.S., et al, *Puccinia coronata* f. sp. *Avenae*: a threat to global oat production. *Molecular plant Pathology*, 2018).
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

Generalities:
Puccinia coronata var. avenae is the causal agent of crown rust disease in cultivated and wild oat. *P. coronata* is a basidiomycete fungus with an obligate biotrophic lifestyle and is classified as a typical macrocyclic and heteroecious fungus. This fungus affects only oats.
Epidemics of crown rust happens in areas with warm temperatures (20–25°C) and high humidity. Infection by the pathogen leads to plant lodging and shrivelled grain of poor quality. Severe attacks can reduce yield by 10–20%. The significant yield losses inflicted by this pathogen make crown rust the most devastating disease in the oat industry.

Symptoms:
Infection of susceptible oat varieties gives rise to orange–yellow round to oblong uredinia (pustules) containing newly formed urediniospores. Pustules vary in size and can be larger than 5 mm in length. Infection occurs primarily on the surfaces of leaves, although occasional symptoms develop in the oat leaf sheaths and/or floral structures, such as awns. Symptoms in resistant oat varieties vary from flecks to small pustules, typically accompanied by chlorotic halos and/or necrosis. The pycnial and aecial stages are mostly present in the leaves, but occasionally symptoms can also be observed in petioles, young stems and floral structures. Aecial structures display a characteristic hypertrophy and can differ in size, occasionally reaching more than 5 mm in diameter.

Life cycle & Epidemiology:

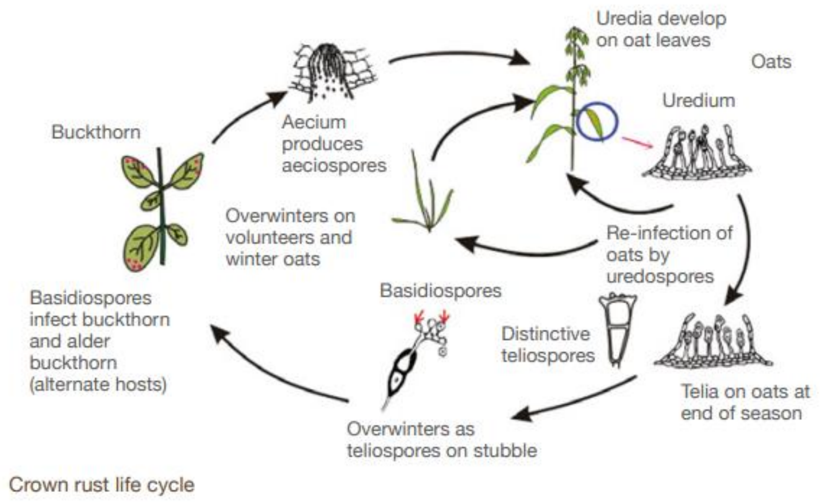


Figure 3.1 ***Puccinia coronata var. avenae*** **life cycle**

P. coronata possesses five infectious stages that are associated with either sexual or asexual reproductive phases in its life cycle. In Europe, where alternative hosts grow in close association with oat, both sexual and asexual stages exist. The asexual infection phase occurs entirely in oat, whereas sexual reproduction takes place in alternative hosts. The asexual phase involves repeated cycles of infection and sporulation mediated by urediniospores that can repeat as quickly as every 2 weeks. The urediniospores germinate on the leaf surfaces under suitable conditions (i.e. mild temperatures, adequate moisture and short exposure to light). Once germinated, these spores form appressoria and, subsequently, a penetration peg, which allows the fungus to penetrate the stoma and gain access to the mesophyll space of the leaf. The intercellular branching of the infection hyphae proceeds until a fungal colony is formed in the surrounding leaf tissue, which, after 7–10 days, gives rise to sporulating uredinia that produce a new set of urediniospores. The uredinia emerge as bright orange–yellow oblong pustules that constitute the characteristic symptom of infection.
The sexual phase of the disease involves both oat and the alternative host. Late in the cropping season, as the plant starts to senesce, rust infection sites differentiate teliospores. These structures germinate in the spring and basidiospores, which subsequently infect growing buckthorn leaves. At this stage, pycnidia are formed on the surface of the leaf and produce pycniospores. Then, aeciospores are produced and re-infect the grass host.
Urediniospores and aeciospores are wind transmitted and can travel long distances. During autumn, the wind may carry urediniospores south to infect winter oat. Moreover, migrating birds have been shown to play a role in both the northward and southward dispersal of spores during spring and autumn, respectively, and even across continents. Teliospores survive the winter in temperate regions or the hot dry summers in regions with Mediterranean climates. Mild, wet weather stimulates dormant teliospores to germinate and produce basidiospores that infect newly formed leaves of the alternate host.

- **Ear blight – *Fusarium spp.* (FUSASP) / *Fusarium culmorum* (FUSACU) / *Fusarium graminearum* (GIBBZE) /*Microdochium spp*. (MICDSP)**

(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

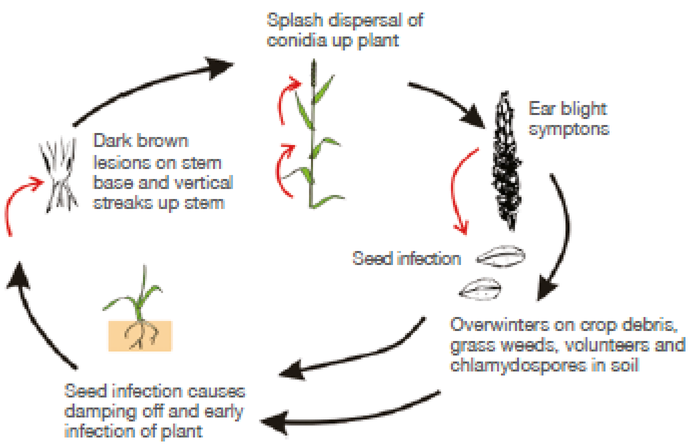
Generalities:
There are many species of Fusarium that affect cereals. These fungi form a complex of diseases on seeds,
seedlings and adult plants. The seed-borne pathogen *Microdochium nivale* and *Microdochium majus* (formerly collectively known as *Fusarium nivale*) are also included in this group of fungi.
Fusarium spp. including *F. culmorum* and *F. graminearum* belong to the *Ascomycota* phylum. These fungi are highly destructive pathogens affecting many cereal species with small grains such as wheat,

barley, triticale and oats. The greatest economic losses occur when the floral tissues become infected and lead to reductions in grain yield and quality.
Upon infection of the inflorescences, several *Fusarium* species produce mycotoxins, jeopardizing food and feed safety. The most toxicologically important mycotoxins produced by *F. graminearum* are deoxynivalenol (DON) and zearalenone (ZEN). The European Union and many other countries around the globe have established maximum levels in human food and guidance levels in animal feed (European Commission, 2006). During the post-harvest period, if infected cereal grain is stored or transported at too high a moisture content, post-harvest growth of the fungus occurs and mycotoxin levels increase.

Symptoms:
Fusarium species cause a range of symptoms on the ear. Bleached ears often show above the point of infection around the milky ripe stage. Later infections may result in infection of the grain without obvious bleaching of the ears. The presence of orange/pink fusarium spores may also be visible on infected spikelets.
Diseased spikelets turn light-straw coloured and have a bleached appearance due to premature death of tissues. Healthy spikelets on the same head retain their normal green colour. One or more spikelets may be bleached, or the entire head may be diseased.
Within 7 to 10 days after symptom development pinkish to salmon-coloured spore masses and mycelium (called sporodochia) may form on the margin of the glumes of individual spikelets, especially near the base of the spikelet. The pink spore masses are easiest to see early in the morning before the dew dries. As the crop ripens, symptoms become less visible.
At harvest, fusarium ear blight can result in shrivelled grains with a chalky white or pink appearance, although this is not always the case. Infected kernels are generally shrunken, wrinkled, and lightweight, with a rough, scabby appearance. These kernels range in colour from light-brown to pink to greyish white. The extent of shriveling and discoloration of the kernels depends on when and where infections occur and the weather conditions following infection. If the fungus invades and kills the rachis or main axis of the spike, the spikelets above that point die, even if they are not colonized by the fungus. The result is no grain at all or small, shriveled kernels that are lost during the threshing process. Towards the end of the season, heads with diseased spikelets may become speckled with dark purplish-black fruiting bodies (perithecia) of the fungus if the weather remains cool and moist. These perithecia are signs of the sexual stage and the overwintering structures of the fungus.

Life cycle & Epidemiology:

Figure 3.2-6: *Fusarium spp.* life cycle



Fusarium spp. overwinter and survive between crops in infected grain and grass stubble, chaff, and cornstalk residue left on the soil surface. They survive as asexual spores (conidia), mycelium, and

perithecia within which are borne the sexual spores (ascospores). These fungi continue to grow and produce spores from harvest until the residues decompose in the soil.
Primary infection is from infected seed, soil, crop debris and volunteers or host weed species. Environmental conditions affect disease development and *Fusarium* species have different temperature requirements. For example, *F. graminearum* seedling blight is most severe under warmer, drier soil conditions. Warm, wet, humid conditions during flowering favours ear blights and seed-borne infection. Further rainfall and humid conditions allow secondary infection to occur, allowing further fungal growth and mycotoxin production.
Conidia are produced profusely during warm, moist weather on corn and small grain residues. Ascospores produced within perithecia are forcibly discharged and carried by air currents to the flowering spikelets where infections occur. Ascospores and conidia may also be splash dispersed to spike from in-field crop residue. Both spore types germinate in free water on the surface of the spikelet and invade the flower. Infections are most serious when the anthers are exposed during flowering, leading to a grain infection.
Early symptoms may develop in as little as three days after infection when temperatures range from 25-30°C and humidity is high. Conidia from sporodochia on diseased spikes can be blown by wind to flowering heads in neighbouring fields or splash dispersed to heads on late-developing tillers in the same field where new (secondary) infections occur.
This process may continue as long as the spikelets are susceptible and moist weather conditions prevail, leading to secondary spread within and across fields. Primary and secondary infections may all result from long distance spread of air borne conidia and ascospores.

- **Eye spot disease - *Oculimacula acuformis* (PSDCHA)**

(Peraldi A, et al., *Brachypodium distachyon* exhibits compatible interactions with *Oculimacula spp*. and *Ramularia collo-cygni*, providing the first pathosystem model to study eyespot and ramularia leaf spot diseases. *Plant Pathology*, 2014)
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

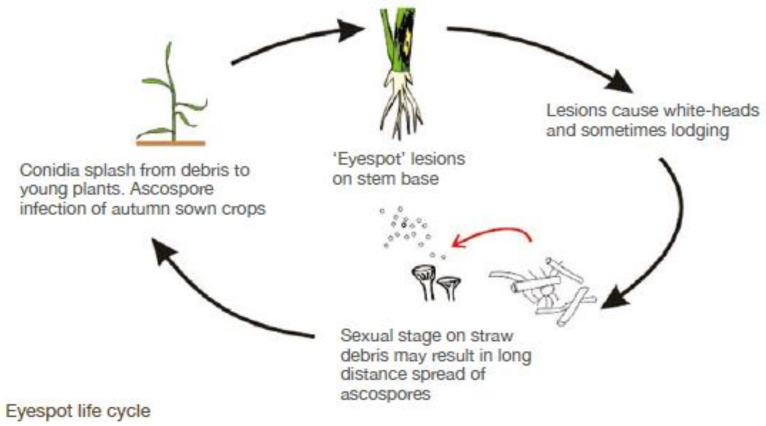
Generalities:
Eyespot is a stem base disease of wheat and other small-grain cereals caused by two closely related fungal species: *Oculimacula yallundae* and *Oculimacula acuformis*. Eyespot is more prevalent in cool and wet regions of the world and can lead to significant yield reduction due to reduced nutrient transport at the stem base and predisposition to lodging.
Eyespot is a common disease in intensive cereal rotations. The disease most seriously affects autumn-sown crops, especially when inoculum builds up across the rotation. Spring cereals can also suffer from infection.
The disease tends to damage yield only when the lesion penetrates the leaf sheath. This restricts water and nutrient flow to the ear, reduces grain number and size and causes whiteheads. Associated lodging can also delay harvest, increase grain moisture, reduce grain quality and encourage other diseases. Moderate or severe eyespot infections can cause yield loss in the order of 10–30%, even in the absence of lodging.

Symptoms:
Visual symptoms are characterized by elliptical shaped lesions with dark centres forming on the leaf sheaths and culms near ground level. One of the most distinctive microscopic infection structures produced by the eyespot-causing fungi is the formation of multicellular aggregates on the host leaf sheath, termed infection plaques. Branching and aggregation of hyphae provide the source of subsequent infection hyphae, which penetrate the host cuticle and epidermal cell wall.
Although severe and early attacks of eyespot can kill seedlings outright, eyespot symptoms typically first become visible in early spring. Symptoms appear as a brown smudge at the stem base. They have a diffuse margin and appear on one side of the outer leaf sheath.
As the season progresses, symptoms become more distinct with an eye-shaped lesion with a dark, diffuse, margin, usually below the first node. A central black 'pupil' may be visible: this is a mass of compacted hyphae and is difficult to remove by rubbing. Eyespot lesions then penetrate through the

leaf layers. As leaf sheaths die off during spring growth, eyespot symptoms may disappear but can reappear later.
Severe eyespot infections can weaken stems around the lesion and cause lodging – stems can fall in all directions, as opposed to lodging caused by wind.

Life cycle & Epidemiology:

Figure 3.2-7: *Oculimacula acuformis* life cycle



The fungus over-winters on infected stubble, volunteers and grass weeds acting as sources of inoculum. It can survive on stubble for up to three years, so a break from cereals will not necessarily reduce eyespot risk in following crops. Grass weeds also act as sources of inoculum. Spores are produced throughout autumn and winter, posing a threat to early sown crops. Infection occurs at temperatures above 5°C with a daytime optimum temperature of 15°C and a night-time optimum temperature of 10°C. High temperatures inhibit infection. Prolonged humid conditions are conducive to infection. Spores are rain splashed short distances from infected stubble. The development of symptoms following infection takes 6–8 weeks, depending upon environmental conditions. Eyespot can be a serious problem in continuous cereals, where inoculum may build up from year to year.
The sexual stage of both eyespot fungi may play an important part in the pathogen life cycle. This stage of the fungus is produced on stubble at the end of the season and after harvest, ascospores may travel long distances and infect emerging or young plants. Ascospores are produced on stubble after harvest. Dispersed by wind across long distances, these spores infect emerging or young plants throughout the autumn and winter.
The infection is heaviest on early drilled, lush crops particularly on compacted, cold wet soils. Excess nitrogen and susceptible varieties increase the risk.

- **Glume blotch – *Parastagonospora nodorum* (LEPTNO)**

(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

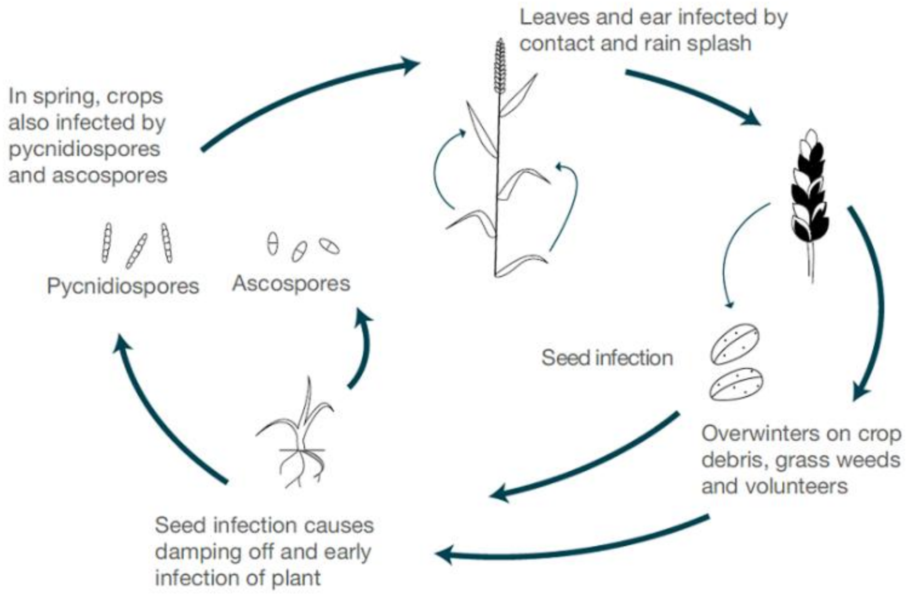
Generalities:
Causing a variety of symptoms in wheat, barley and rye, *Parastagonospora nodorum* has several common names – septoria nodorum, septoria seedling blight, leaf blotch and glume blotch.

Symptoms:
Seedling blight
P. nodorum can be seedborne and infect seedlings in cool, wet soils. The most common effect is poor plant establishment. It can also result in water-soaked, dark green areas on the coleoptile, which later become necrotic. Twisted, distorted and stunted seedlings may also occur. Symptoms are similar to those of microdochium seedling blight, although usually less severe. Laboratory analysis is often required to distinguish the causal organism.

Leaf blotch
On mature leaves, the first symptoms of *P. nodorum* infection are small necrotic lesions. Later, these develop into brown oval lesions, surrounded by a chlorotic halo. These lesions frequently coalesce to produce large areas of dead, dry and sometimes split tissue. Under high disease pressure, leaf symptoms can include small purplish-brown spots.

The indistinct pale brown pycnidia of *P. nodorum* may only be visible with a hand lens when lesions are held up to the light. They are often sunken within the lesions. Note: Septoria tritici blotch (caused by *Zymoseptoria tritici*) is associated with black pycnidia.
Glume blotch
P. nodorum can also infect the ears, particularly of wheat, causing glume blotch. Dark brown patch-like burn marks develop on the glumes, which later become purple/brown. Glume blotch symptoms are easiest to see on green ears.

<u>Life cycle & Epidemiology:</u>
P. nodorum survives as dormant mycelium, and as pycnidia and pseudothecia on seed, stubble, crop debris, wild grasses, autumn-sown crops and volunteers. Infection of newly emerged crops occurs from these sources or from windborne ascospores released from infected stubble. Infection can also be seedborne. It is likely that the seedborne phase is responsible for septoria seedling blight.



As temperatures rise and humidity increases, pycnidiospores are produced from the pycnidia. These are splash-dispersed up the plant and from plant to plant. Temperatures of 20–27°C, together with long periods (6–16 hours) of high humidity, are optimal for spore production and germination. A period of rain is essential for spore dispersal. The disease cycle can be completed in 10–14 days during such conditions.

Spores produced from pseudothecia and pycnidia, which develop on the flag leaf and ear at the end of the season, can initiate infection in very early autumn-sown crops and volunteers, but infections on debris are more likely to initiate infection on new crops. Glume blotch infection of the ear can lead to infection of the seed.

- **Brown rust – *Puccinia recondita* (PUCCRE) / *Puccinia triticina* (PUCCRT) */ Puccinia hordei* (PUCCHD)/ *Puccinia recondita f. sp. recondita* (PUCCRR)**

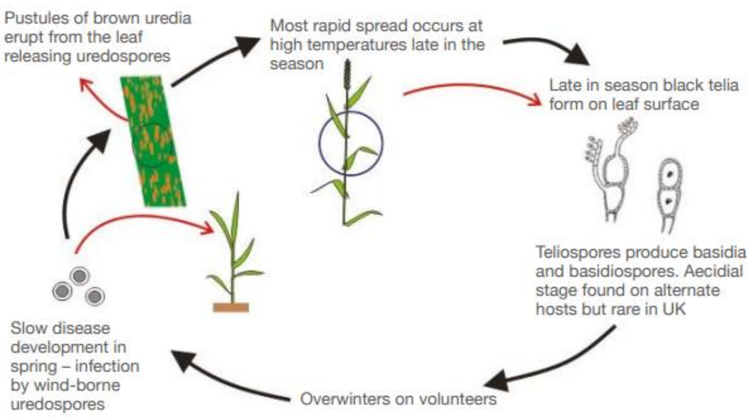
(Jorge David Salgado, Elizabeth Roche and Pierce A. Paul*, Department of Plant Pathology)
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

Generalities:
Brown rust is a foliar disease caused by *Puccinia recondita* or *P. triticina* on wheat, *Puccinia recondita f. sp. recondita* on rye/triticale and *P.hordei* on barley.
There is large seasonal and geographic variation in brown rust severity.
In wheat, brown rust in wheat is common in regions with high summer temperatures. Brown rust tends to develop late in the summer and results in a significant loss of green leaf area and, hence, yield and specific weight. In barley, brown rust can be widespread, if conditions are conducive and there is dense cropping of barley. Brown rust epidemics on barley tend to start earlier in the spring than for wheat. Brown rust is usually more of an issue in winter barley than in spring barley, especially in early sown crops when the winter is mild. A severe attack of brown rust early in the season affects final yield, through reduced green leaf area and tiller retention. Severe attacks on rye occur predominantly in late season especially with high nitrogen levels. Grain shrivel and specific weight reductions reduce both yield and quality and can reduce yield by up to 50%.

Symptoms:
Pustules (about 0.5–1.0 mm in diameter) often develop on leaves in the autumn on early-sown crops. These pustules contain orange-brown, rusty coloured spores. Later in the season, dark brown to black spores are produced which are not easily rubbed off the leaf surface. Pustules first develop on lower leaves and progress up the plant. Symptoms can be present from seedling stages through ripening.
Often seen on the leaves, symptoms can occur on the stem, leaf sheaths, and ears when infection is severe.

Life cycle & Epidemiology:

Figure 3.2-8: Brown rust life cycle



The fungus can only grow and survive on live leaf tissue.
Urediniospores initiate germination 30 minutes after contact with free water and temperatures between 15°C and 22°C are optimal for sporulation and germination. Surface moisture on leaves (i.e. 100% relative humidity) is essential for spore germination. Therefore, windy days disperse spores and cool nights with dew favour the build-up of the disease. The germ tube grows along the leaf surface until it reaches a stoma; an appressorium is then formed, followed immediately by the development of a penetration peg and a sub-stomatal vesicle from which primary hyphae develop. A haustorial mother cell develops against the meso-phyll cell, and direct penetration occurs. The haustorium is formed inside the living host cell. Secondary hyphae develop resulting in additional haustorial mother cells and haustoria. When the host cell dies, the fungus haustorium dies too..

Symptoms can occur 5–6 days after infection at optimum temperatures. Cold weather slows disease development but does not kill the pathogen (unless the leaf dies).
Brown rust has a complex life cycle that include two hosts (primary host and alternate host) and several different spore stages. Urediospores overwinter on infected wheat and are carried by the wind. Under favourable temperature and moisture conditions, urediospores germinate and infect leaves within 6 to 8 hours after landing on the plant surface. Once established, a new crop of urediospores may be produced every 7 to 14 days if environmental conditions are favourable.
The earlier rust develops, the more spore and disease cycles are likely to occur during the season and the greater the risk of severe epidemics and yield loss. Frequent heavy dew, light rain, or high humidity are ideal for leaf rust development.
As the plant matures, black, submerged pustules develop on the leaves. These pustules (telia) contain the winter spores (teliospores). Teliospores do not infect wheat but may develop on diseased plant tissue, indicating a second developmental stage of the fungus.
Telia may not develop when plants become infected very late in the season (close to maturity). In the fall, urediospores are blown southward, infect wheat, and overwinter as urediospores or mycelium on volunteer wheat plants.

- **Yellow rust (or stripe rust) – *Puccinia striiformis* (PUCCST) / *Puccinia striiformis f. sp. tritici* (PUCCSI)**

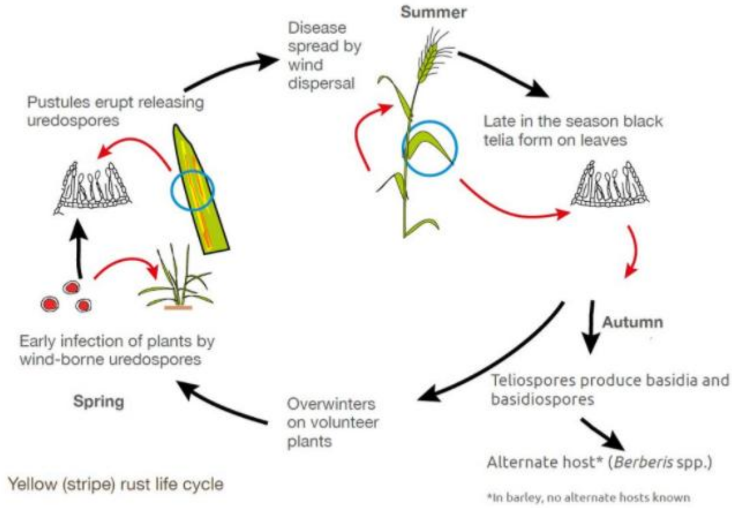
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

Generalities:
Puccinia striiformis, causal agent of stripe or yellow rust, is an agronomically important obligate biotrophic fungal pathogen of wheat, barley, and other domesticated crops, as well as many non-domesticated grasses.
Severe epidemics are usually associated with susceptible varieties, mild winters and cool moist summers. Yield losses of 40–50% can be recorded in susceptible varieties.

Symptoms:
Yellow rust symptoms appear as parallel rows of yellowish orange coloured pustules on the leaves of adult plants. Epidemics often start on individual plants, usually in the autumn. Symptoms develop slowly over winter and are often missed until the early spring when small patches or foci of infected plants can be seen in fields. Yellow rust lesions tend to spread as a yellow band on young leaves moving ahead of the sporulating lesion. On older leaves pustules occur in obvious stripes hence it sometimes being referred to as stripe rust. Severe infections quickly give rise to chlorosis, and later necrosis, of leaves resulting in desiccation in May/June if the weather conditions are warm and dry. In severe attacks, yellow rust infection of the ears can occur with the formation of masses of spores between the grain and the glumes. At the end of the season, secondary black spores (teliospores) are sometimes produced amongst the stripes of pustules.

Life cycle & Epidemiology:

Figure 3.2-9: *Puccinia striiformis* life cycle



Yellow rust requires living green plant material to survive. In the winter, the fungus survives as dormant mycelium or active sporulating pustules on volunteers and autumn-sown crops. Although, low temperatures kill pustules, mycelium within plant tissue can survive temperatures of -5°C.

The epidemic takes off as temperatures warm. The primary inoculum to cause epidemics on cereal crops is mainly from cereal crops, volunteer plants and grasses. The fungus produces bright yellow to orange urediniospores 20 to 30 um in diameter. These spores have thick and echinulated walls and are contained in sori or pustules on the plant. Urediniospores can be disseminated by wind for long distance and also can be carried on clothes and shoes for unintended introduction.

Urenidiospore production usually is followed by teliospore production late in the growing season. Temperatures of 10–15°C and a relative humidity of 100% are optimal for spore germination, penetration and production of new spores. These are spread by wind or leaf-to-leaf contact. Cool, damp weather in the spring, with overnight dew or rain, provides optimum conditions for disease development. At the end of the season, secondary black spores (teliospores) may be produced as part of the sexual stage.

The complete cycle from infection to the production of new spores can take as little as 10 days during ideal conditions, so leaf tips may show symptoms before leaves fully emerge. The disease cycle may repeat many times in one season.

In wheat, the basidiospores produced from these teliospores have an alternative host. This means sexual recombination can take place, forming new races. In barley, there is no known alternate host, meaning sexual recombination cannot take place.

The fungus can survive summer and/or winter as mycelium in host tissue for months and/or as viable urediniospores in the air or host surface for different length of time in different regions depending upon environmental conditions. Temperatures over 20°C slow the fungus, although there are strains tolerant to high temperatures. A prolonged spell of warm, dry weather often stops an epidemic. This is due to the direct effect on the fungus and increasing host resistance at higher temperatures. Stripe rust epidemics are affected by various crop and environmental factors, especially host factors such as cultivar susceptibility and cropping systems, and weather factors such as moisture and temperature.

- **Light Leaf Spot - *Pyrenopeziza brassicae* (PYRPBR)**

(Encyclopedia of oilseed rape diseases, ADAS & BASF, 2009)

Generalities:

Light leaf spot is a foliar disease caused by the ascomycete fungus *Pyrenopeziza brassicae*. The disease is widely distributed in Europe and particularly in the UK, where weather conditions are favourable to the fungus.

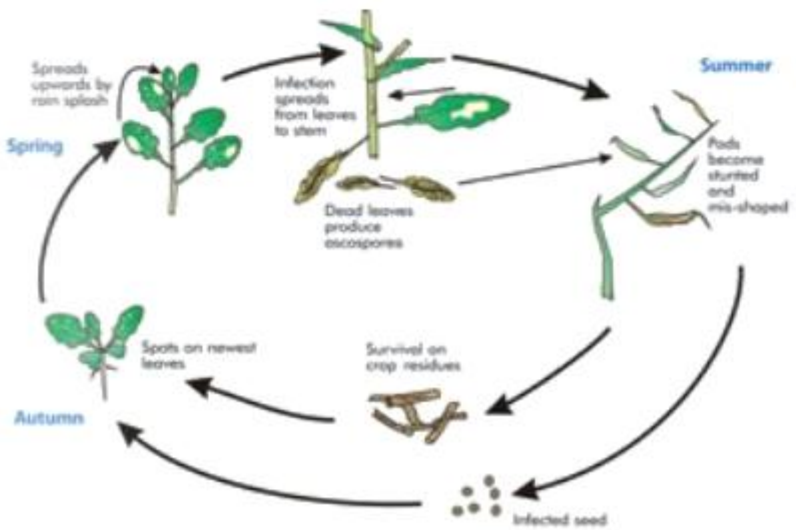
The disease appears, after a long period of symptomless growth, as speckles of white spore pustules on leaves, stems and pods. These spore pustules are only visible after a period of dry weather. As infec-

tions mature, the fungus can also cause bleaching and stunting of leaves in affected positions causing leaf distortion and by spreading to the growing point, can cause stunting of the whole plant. The disease typically reduces yield by a third of the incidence (90% plants affected at early stem extension causes 30% yield loss) and on average.
Light leaf spot is a polycyclic disease, which infects oilseed rape leaves, stems, flowers and pods during the course of the season, between sowing in autumn and harvest in summer. The disease remains active at far lower temperatures than other pathogens of vegetable brassicas, down to 4°C, so continues to cause outbreaks right through the winter.

Symptoms:
A light leaf spot lesion can be recognised as groups of small black spots on the underside of leaves, clustered in to a 'thumbprint' (Figure 19). Small white spore droplets are produced on and around these lesions. On very susceptible varieties, large areas of individual leaves may be affected and large pale blotches develop. Lesions on the older yellowing leaves often have a 'watermark' appearance, confined to one side of the leaf and developing a pinkish or red colour.
Leaf lesions are not very numerous in summer but become easier to find on the upper leaves in autumn and winter. The white spore droplets are usually found around the edges of the lesions but are less likely to be found when buttons have been wetted by rain. Lesions on buttons induce considerable yellowing of the outer leaves and advanced symptoms may be confused with overmaturity and soft rots.
Symptoms of light leaf spot can appear as early as July, but disease symptoms become most prevalent during autumn and winter. A feature of the disease is its rapid development on buttons in autumn, despite little evidence of earlier leaf infection. This is probably due to the spread of airborne spores from debris in nearby fields, rather than secondary spread within the crop itself. Because light leaf spot is one of several diseases which cause black spots in brassicas, reliable identification may require laboratory diagnosis.

Life cycle & Epidemiology:

Pyrenopeziza brassicae **life cycle**



Light leaf spot is a polycyclic disease in that it switches spore type throughout its life cycle within the crop. This ability to switch allows further spread by rain splash, with symptoms often appearing patchy in the crop. Light leaf spot produces ascospores on dead tissue and conidia are formed in acervuli on living tissue. Ascospores and conidia are morphologically similar when observed under a light microscope. Ascospores are hyaline, cylindrical, septate and roughly 15.0 µm x 2.5 µm in size, while conidia are hyaline, cylindrical, aseptate and roughly 10-16 µm x 3–4 µm. Ascospores play an important role in initiating epidemics in the autumn, when they are released from infected oilseed rape

debris as it dries after overnight dew or rainfall, and are dispersed by wind. Conidia only travel short distances by splash dispersal and are responsible for secondary spread of the disease during autumn and winter. These later infections by secondary spores will not be picked up by spore trapping. Dry conditions delay spore maturation and release but do not prevent it.
The wind dispersed ascospores of light leaf spot are likely to be responsible for transmitting the disease to crops. These ascospores are produced on leaf debris underneath oilseed rape crops in spring/early summer when horticultural brassica crops are transplanted to the field, and on stem and pod debris after oilseed rape harvest during late summer/autumn when horticultural brassica crops have been fully established. Once infected, leaves and buttons can remain symptomless for long periods of time (3–4 weeks), especially during cold weather. Volunteer oilseed rape plants may also act as a 'green bridge' between crops and thus provide another inoculum source.
Infection is influenced by environmental factors, including temperature and leaf wetness duration.
During the past decade, there has been a considerable increase in the severity of light leaf spot epidemics in northern Europe, perhaps due to changes in *P. brassicae* populations, to render ineffective some sources of resistance and some previously effective fungicides.
Isolates from oilseed rape can cause light leaf spot on cabbage or Brussels sprouts, and vice versa.
The amount of stem and pod infection determines the amount of inoculum for winter oilseed rape crops in the next season and along with weather records, is the basis for a forecast of disease severity the following season.

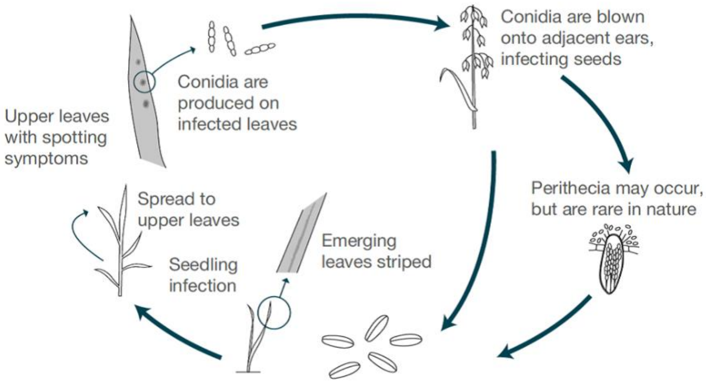
- **Leaf spot of oat - *Pyrenophora chaetomioides (*PYRNAV*)***

(AHDB:knowledge-library/leaf-spot-infection-and-symptoms-in-oats; Plantwise Plus: https://doi.org/10.1079/pwkb.species.4610)

Generalities:
Pyrenophora chaetomioides causes leaf spot/leaf blotch and seedling blight of oats. Oats are the primary host of these species, with *Pyrenophora teres* affecting barley and *P. tritici-repentis* affecting wheat and triticale. Significant yield losses only occur from primary infection (seedling stage). Weak tillering or the killing of the plant causes this if infection is severe. The production by the pathogen of pyrenophorin and cytokinins are suspected of reducing seed germination. The disease reduces yield potentially from large areas of the field or the whole crop. The disease is most damaging in countries where cool wet conditions occur during the early seedling stages. Typical incidence is around 14% (depending on cultivar and climatic conditions). It has been reported that 40-70% infection of seed lots can lead to yield losses of 3-5% (Olofson, 1976).

Symptoms:
Lesions caused by this disease are elongated to ellipsoidal and are generally dark reddish-brown. As lesions mature, the centres often turn a light brown to tan, surrounded by an irregular dark brown ring. Primary infections tend to be on the lower leaves, beginning as chlorotic flecks developing into short brown stripes with purple margins. These infection sites may enlarge, turn dark brown, and often coalesce. When the disease is severe, affected leaves or leaf sheaths may die prematurely. Leaf spots arising from secondary infection are sparse and have red-brown centres with purple margins.

Life cycle & Epidemiology:



The primary (seedbourne) phase of the disease starts from infected seed sources. Infected debris is not thought to be a significant part of the disease cycle. In severe infections, seedlings die before or soon after they emerge. On surviving plants, initial symptoms show as short, brown stripes with purple edges on the emerging leaves (especially the first three or four leaves). The secondary phase of the disease appears as red-brown spots with purple margins on leaves. The spots contain spores (especially those on the earliest-forming leaf stripes) that splash up the plant. Eventually, upper leaves develop spotting symptoms and produce spores that splash up onto the ear. When this occurs, grain becomes infected, completing the life cycle.

- **Net blotch of barley – *Pyrenophora teres* (PYRNTE)**

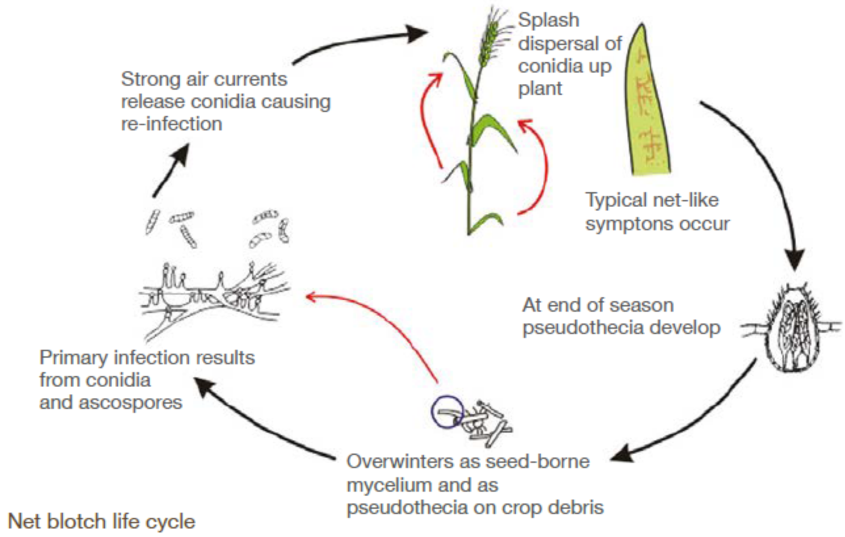
(Liu, Z, et al. *Pyrenophora teres*: profile of an increasingly damaging barley pathogen, *Molecular Plant Pathology*, 2011)
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

<u>Generalities:</u>
The fungus *Pyrenophora teres* is the causal agent of net blotch of barley. Similar to other stubble-borne diseases, net blotch has become economically important and has emerged as a major disease in many barley-growing areas worldwide.
Reduced or no-till agricultural practices have probably contributed to the increase in importance of both net form and spot form of net blotch disease. However, the susceptibility of current cultivars and trends in environmental conditions cannot be ruled out as contributing factors to the increased importance of the disease. Net blotch can cause typical yield losses of 10%–40%, with the potential for total loss if susceptible cultivars are planted under extreme environmental conditions. Furthermore, infection leads to a reduction in kernel size, plumpness and bulk density, and negatively affects the malting and feed quality of barley.

<u>Symptoms:</u>
Net blotch occurs in two forms, one producing a network of necrosis on leaves extending mostly along the veins and partly across the veins of the leaf (termed the net form) and the other causing smaller discrete dark spots (termed the spot form). Both also produce chlorosis around infected areas as the infection matures.
On juvenile plants, particularly emerging crops, the disease may also appear as a brown stripe extending from the leaf base to the tip, similar to leaf stripe.

<u>Life cycle & Epidemiology:</u>

Figure 3.2-4: *Pyrenophora teres* life cycle



The pseudothecia are spherical structures seen as many dark dots on the surface of barley straw. Club-shaped and bitunicate asci, develop within the mature and fertile pseudothecia. Each ascus generally contains eight ascospores that are light-brown and often have three or four transverse septa and one or two longitudinal septa only in the median cells. Mature ascospores are actively discharged, dispersed by wind and serve as primary inoculum early in the growing season. In some cases, seed-borne mycelium and conidia released from the stubble of barley or an alternative host can also serve as primary inoculum for early season infection.

After initial colonization, the fungus produces a large number of conidia, which serve as secondary inocula. Conidia are borne on top of conidiophores that are slightly swollen at the base and usually arise singly or in groups of two or three. Conidia are smooth, cylindrical and straight, round at both ends, subhyaline to yellowish brown, and often with four to six. Conidia are produced throughout the growing season and are dispersed by strong wind or rain to cause new infections on plants locally, or can be carried longer distances potentially to new barley fields.

P. teres also produces pycnidia and pycnidiospores on the host and in culture. These structures are yellow to brown and produce hyaline, nonseptate, spherical, and ellipsoidal pycnidiospores. Pycnidia can develop on infected straw, leaf fragments and seed.

Seed-borne mycelium infects the coleoptile and the first leaf becomes infected as it emerges. Spores produced on this first leaf serve to spread the disease to other leaves and to surrounding plants. Seed-borne inoculum is usually much less important than infected stubble and trash which allows the pathogen to over-winter.

The dispersion, germination and successful infection of conidia are greatly influenced by the relative humidity, temperature, leaf wetness and other environmental factors. During the growing season, several secondary cycles can occur, causing high disease severity on susceptible plants if environmental conditions are favourable. At the end of the growing season, the fungus colonizes the senescent tissue, ultimately producing pseudothecia, the protective teleomorph structure used for overseasoning.

Infection occurs during periods of prolonged high humidity and temperatures of 10–25°C. Higher temperatures and dry weather inhibit infection. The disease cycle can complete in 14 days in optimal conditions.

- **Tan spot of cereals – *Pyrenophora tritici-repentis* (PYRNTE)**

(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

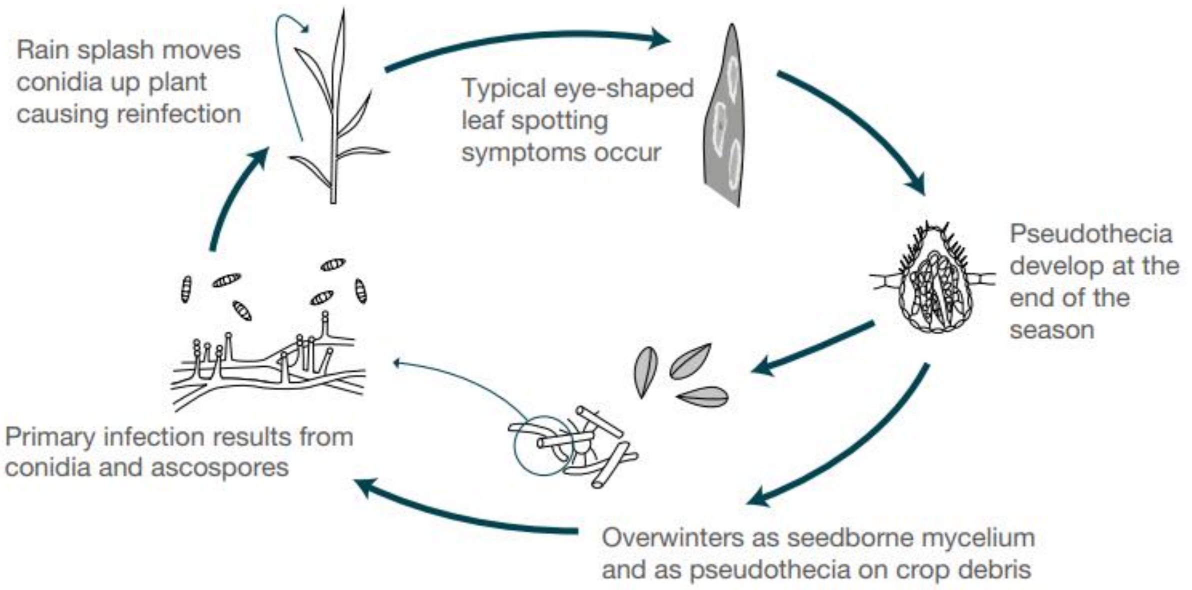
Generalities:

The pathogen primarily infects wheat, but can also infect barley, rye and some grasses.

Symptoms:

The seedborne phase infects seedlings, resulting in small tan-to-light-brown flecks on young leaves. These often have a chlorotic halo with a dark spot at the centre, which expands into elliptical/oval lesions. However, symptoms are generally seen later on leaves and sheaths in the middle and upper canopy. Under wet conditions, lesions produce dark spores. Under ideal conditions, lesions coalesce to produce large areas of dead tissue. Necrosis tends to progress from the leaf tips. Symptoms are very similar to septoria nodorum. Correct diagnosis relies on spore identification. Tan spot infected grains can have a reddish appearance, similar to fusarium infection, and the glumes can turn brown.

Life cycle & Epidemiology:
The pathogen survives mainly as dormant mycelium on stubble and crop debris. Pseudothecia form on the stubble that produce ascospores. The spores spread large distances by the wind, usually during the spring.



Tan spot life cycle

Mycelium in infected seed can also be a source. Under warm, wet conditions, lesions produce dark asexual conidia that are rain-splashed up the plant. In severe infections, and when conditions during flowering are conducive to the disease, it can infect the ear, cause discoloration of the glumes and the grain, and infect seed. The disease develops over a wide range of temperatures but has quite a high optimum (20–28°C). It is also favoured by long periods (18 hours or more) of dew or rain. Leaf lesions appear in 7–14 days.

- **Ramularia Leaf Spot – *Ramularia collo-cygni* (RAMUCC)**

(McGrann G.R.D. & Havis N.D. Ramularia Leaf Spot: a newly important threat to barley production - *Pest Management* – 2017)
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

Generalities:
Ramularia collo-cygni, which belongs the Ascomycota phylum, Dothideomycete class, is the causal agent of ramularia leaf spot (RLS) disease of barley. RLS has emerged as a serious threat to barley production across temperate regions of Europe and can cause extensive losses in yield and quality.
The fungus produces phytotoxins called rubellins in the plant, which cause foliar necrosis and reduce photosynthetic area. With this reduction in green leaf area, RLS can affect yields by as much as 70%, but losses are more usually in the region of 5–10%. Importantly, RLS can also increase the proportion of small grains by as much as 4% consequently lowering the quality of the grain.
Although RLS is primarily a disease of barley *R. collo-cygni* is also able to infect other cereal crops such as wheat and oats as well as some grasses including weed species. Typical RLS lesions can be observed on some nonbarley host species but infection is often asymptomatic.

Symptoms:

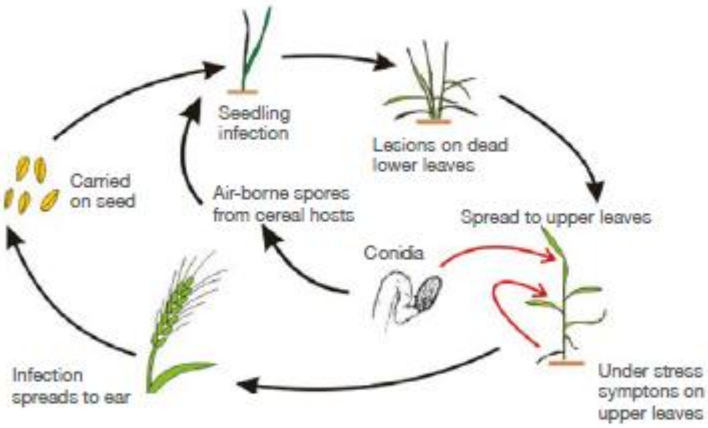
Symptoms appear on the upper leaves after flowering. Initial damage is a fine pepper spot, which darkens to a square spot, bounded by leaf veins and surrounded by a chlorotic halo. Mature ramularia lesions can be distinguished from other foliar symptoms by applying the '5Rs':

- **R**inged with yellow margin of chlorosis
- **R**ectangular shape
- **R**estricted by the leaf veins
- **R**eddish-brown colouration
- **R**ight through the leaf

Physiological leaf spots, caused by oxidative stress, tend to be caused by superficial browning on upper leaf surfaces, while the undersides remain unaffected. These cause less yield loss but can trigger the production of ramularia leaf spots.

Life cycle & Epidemiology:

Figure 3.2-5: *Ramularia collo-cygni* life cycle



R. collo-cygni grows from infected seed and moves systemically within new plant growth. Airborne spores produced on trash and crop debris can also infect plants. Infected crops do not display visible symptoms initially. Senescing leaves may show signs of infection early in the season but the main damage occurs on the top leaves after flowering. Later in the season, rows of white spores can be seen with a hand lens on the undersides of affected leaves. As leaves senesce, these structures can be seen with the naked eye. Stressed crops are thought to be more likely to show symptoms, including those exposed to high light levels, waterlogging and rainfall after flowering. However, even stress associated with flowering may be sufficient to initiate symptoms.

R. collo-cygni can also be spread by wind-dispersed spores. On the leaf surface, the fungus forms a hyphal network whilst infectious hyphae invade the host through open stomata. Upon penetration, the fungus forms substomatal aggregates, which remain connected to the epiphytic network on the leaf surface. As *R. collo-cygni* colonises the plant, fungal growth is intercellular and host epidermal cells remain intact. Disease symptoms tend to appear following collapse of the mesophyll tissue, which has been associated with fungus sporulation events. However, detectable levels of spore release tend to occur mainly post-flowering in both winter and spring barley crops.

The toxin rubellin D is also thought to be produced by the fungus when the barley host is stressed. Under certain light conditions, this toxin causes oxidative stress, leading to plant cell damage and causing typical leaf symptoms.

- **Leaf Scald – *Rhynchosporium secalis* (RHYNSE)**

(Avrova A. & Knogge W., *Rhynchosporium commune*: a persistent threat to barley cultivation. *Molecular Plant Pathology*, 2012)

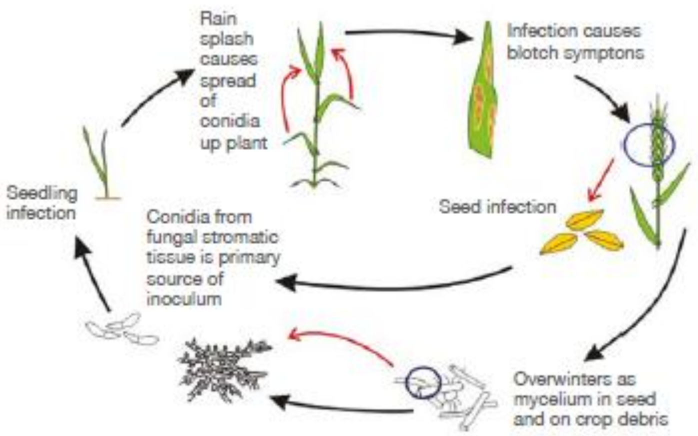
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

Generalities:
Rynchospoium secalis (or *R. commune*) is the causal agent of leaf scald on barley. The fungus belongs to the *Ascomycota* phylum and is a globally important pathogen of barley crops, especially in cool temperate regions, which favour disease development. Lead scald affects barley, rye, triticale and a number of grasses, particularly ryegrasses. There are specialised forms of the pathogen, which are generally restricted in their host range.
In winter barley, yield losses can exceed 1.5 t/ha and grain quality can be reduced. The most serious effect on yield, in both winter and spring barley, results from attacks that develop between first node detectable and boot-swollen growth stages. Yield losses of up to 40% have been reported in the field, although losses of 1 – 10% are more typical.

Symptoms:
Initial symptoms often appear in random patches soon after sowing winter barley. Symptoms due to the seedborne phase of the disease do not appear until January/February, as the disease initially develops inside the leaves and roots without symptoms showing.
Typical, early symptoms are oval or irregular, pale green-grey, water-soaked lesions. Infection often occurs in the leaf axil. Symptoms often first appear at the base of the leaf close to the stem. Symptoms then spread to the rest of the leaf, leaf sheaths, ears and grain, particularly in wet conditions. As the lesions age, they acquire a dark-brown margin (the centre remains pale green or turns pale brown). Lesions often coalesce and form large areas, around which leaf yellowing is common. These can cause chlorosis and eventual death of the rest of the leaf.
In winter barley, symptom expression can be high during tillering in early spring. In spring barley, it is rare to see symptoms until after tillering, except in very early sown crops. In both crops, symptoms can build up rapidly after emergence of the flag leaf under favourable conditions.

Life cycle & Epidemiology:

Figure 3.2-10: *Rhynchosporium secalis* life cycle



Rhynchosporium is a polycyclic pathogen with several generations of spores developing during the crop growing season. The disease cycle can repeat every 14 days. The ideal temperature range is 18–20°C but temperatures over 20°C slow disease development. Cool, moist conditions favour the disease.
Primary inoculum probably originates from crop debris or infected seeds. Secondary spread occurs through splash-dispersed conidia from infected leaves. Rainfall, at the growth stage of stem extension, is the major environmental factor in epidemic development. *R. secalis* can infect any part of the leaf and produce spots or blotches of irregular shape. Because of the tendency for water retention between the auricle and the stem, lesions are also often found there.

Infection of barley ears can result in severe grain infection. *R. secalis* can be transmitted by seeds, and seed dust remaining on the soil surface. Infection in seeds can be seen as a typical lesion at the base of the awn and show a dark brown margin with a light centre. However, seed infection can remain symptomless, which implies that visible analysis of the seeds may not always be accurate when determining seed quality. Seedlings grown from infected seeds have symptoms at the tip of the coleoptile 4–6 days after emergence, or remained symptomless. Although splash dispersal of *R. secalis* conidia contributes to the short-distance spread in the field, transport of infected seeds may be responsible for the long-distance dispersal of inoculum.

In humid conditions, conidia germinate on the leaf surface, producing hyphae that penetrate the cuticle directly above epidermal cells. Subsequent fungal growth is confined to the subcuticular region of the epidermis. New conidia are produced on conidiophores, which erupt through the leaf cuticle in apparently healthy leaf regions. In addition, sporulation occurs in the lesion areas.

The development of the disease is characterised by a long phase of asymptomatic growth between penetration and occurrence of the typical disease symptoms, necrotic lesions with dark brown margins. Indeed, several generations of the pathogen may occur before symptoms appear. Although the disease is spread from the lower to upper leaves by rain splash, severe symptoms can appear on the upper leaves of the crop, which previously exhibited little visible signs of disease.

During the asymptomatic phase, collapsing epidermal cells represent the earliest microscopically visible evidence of disease. This phase ends with the appearance of the typical scald lesions, which are caused by the collapse of mesophyll cells beneath extensive fungal mycelia. The greyish colour in the middle of the blotch is caused by the formation of spores on the surface. The size of the lesion can vary as a function of environmental conditions and cultivar resistance. The lesions may merge and destroy the entire leaf.

Disease symptoms mainly occur in late summer / autumn (although can occur at other times of year as well). The fungus overwinters via infected barley stubble / volunteers and infected seed (also possibly by some infected grass species) – these then infect the developing seedlings. Autumn-sown crops can become infected very soon after sowing.

- **Cottony rot - *Sclerotinia sclerotiorum* (SCLESC)**

(Leyronas C. et al, Assessing the phenotypic and genotypic diversity of *Sclerotinia sclerotiorum* in France. *European Journal of Plant Pathology*, 2018)
(Bolton MD. Et al, *Sclerotinia sclerotiorum* (Lib.) de Bary: biology and molecular traits of a cosmopolitan pathogen. *Molecular Plant Pathology*, 2006)
(Encyclopedia of oilseed rape diseases, ADAS & BASF, 2009)

Generalities:

Sclerotinia sclerotiorum, an Ascomycete fungus, is one of the most devastating and cosmopolitan of plant pathogens. The fungus infects over 400 species of plants worldwide including important crops and numerous weeds. *S. sclerotiorum* poses a threat to dicotyledonous crops such as sunflower, soybean, oilseed rape, edible dry bean, chickpea, peanut, dry pea, lentils and various vegetables, but also monocotyledonous species such as onion and tulip.

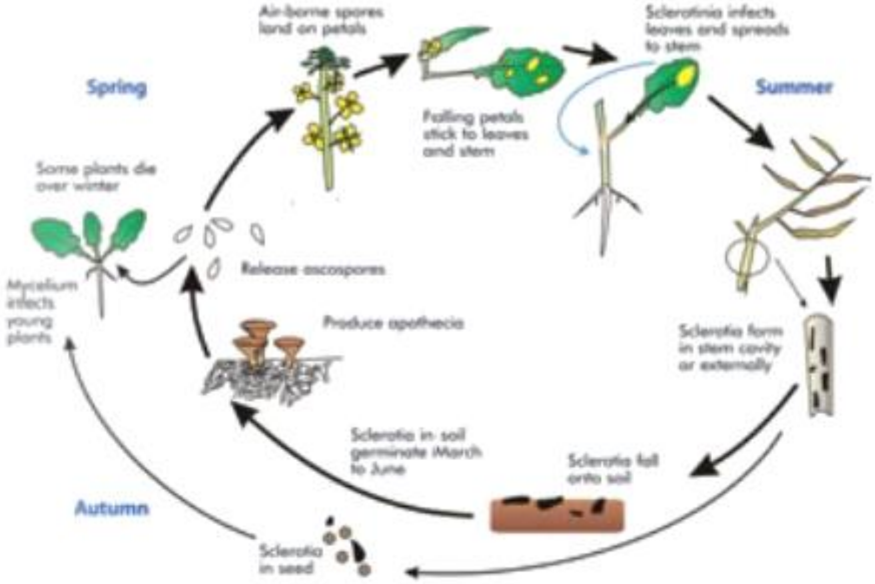
Symptoms:

S. sclerotiorum is a necrotrophic pathogen. Leaves usually have water-soaked lesions that expand rapidly and move down the petiole into the stem. Lesions usually develop into necrotic tissues that subsequently develop patches of fluffy white mycelium, which are the most obvious sign of infected plants. Early in lesion development, plants may not appear affected by the disease. However, as the fungus progresses into the main stems, wilting typically occurs. As lesions age, infected tissues appear bleached and are often shredded, leaving only vascular tissues.

Sclerotia are formed inside infected tissue, often in the stem pith, but may form on the surface of tissues during high humidity conditions. Sclerotia will commonly form on or in flowering and seed-producing portions of the plant and, therefore, are often found in harvest samples. Once the disease has been initiated in the host, infection can spread to adjacent plants through plant-to-plant contact.

Life cycle & Epidemiology:

***Sclerotinia sclerotiorum* life cycle**



Sclerotia are central components of the disease thanks to the massive reproductive potential along with capability for long-term survival. Sclerotia can germinate carpogenically or myceliogenically, depending on environmental conditions, resulting in two distinct categories of diseases. Sclerotia that germinate myceliogenically produce hyphae that can directly attack plant tissues. Sclerotia that germinate carpogenically produce apothecia and subsequently ascospores that infect aboveground portions of host plants. Hyphae resulting from either germination type are hyaline, septate, branched and multinucleate with mycelium appearing white to tan in culture and in planta. Microconidia are produced on hyphae or the apothecial hymenium, but these structures do not germinate.
Most diseases caused by this pathogen are initiated by ascospores. The apothecium or fruiting body that produces ascospores is formed following carpogenic germination of a sclerotium at or near the soil surface under certain environmental conditions. Environmental factors conditioning carpogenic germination include soil temperature and moisture, but also the temperature at which the sclerotia were produced. In temperate zones, conditioning appears to be a combination of wetting and drying events, low temperatures, and time. Soil moisture is a critical factor in apothecia production and is one of the principal reasons that ascospore-initiated diseases are associated with irrigation events or periods of high rainfall.
An apothecium consists of a stipe originating from a sclerotium and a receptacle with a flat to concave hymenial layer (2–10 mm diameter), which is ochre to light tan in colour. One or more apothecia may arise from a sclerotium. Ascospores are forcibly discharged from each ascus. It can occur continuously under optimum conditions for greater than 10 days in the field at a rate of 1600 spores/h. *S. sclerotiorum* frequently releases ascospores by ‘puffing’ of the apothecium, a state at which vast quantities of asci simultaneously release their ascospores, triggered by changes in relative humidity or physical disturbance of the apothecium. Most ascospores are deposited within the field where they are produced although some can be carried several kilometre in air currents. Ascospores are covered by sticky mucilage, which aids in adhesion to the substrate they land on. They can survive on plant tissue for about 2 weeks depending on environmental conditions; high relative humidity and ultraviolet light are detrimental to their survival.
Ascospores can germinate on the surface of healthy tissue but cannot infect the plant without an exogenous nutrient source and a film of water. Therefore, senescent or necrotic tissues generally serve as the nutrient source to initiate ascospore germination, giving rise to mycelial infection of the host plant. Flowering is considered a critical host factor associated with most ascospore-initiated diseases because senescing flower parts serve as the primary nutrient source as they fall on to the leaves, petioles or

stems. As flowering of crops occurs about the time canopies close, the nutrient sources are available during a time when environmental conditions are more favourable for growth of the pathogen.

- **Septoria tritici blotch – *Zymoseptoria tritici* (SEPTTR)**

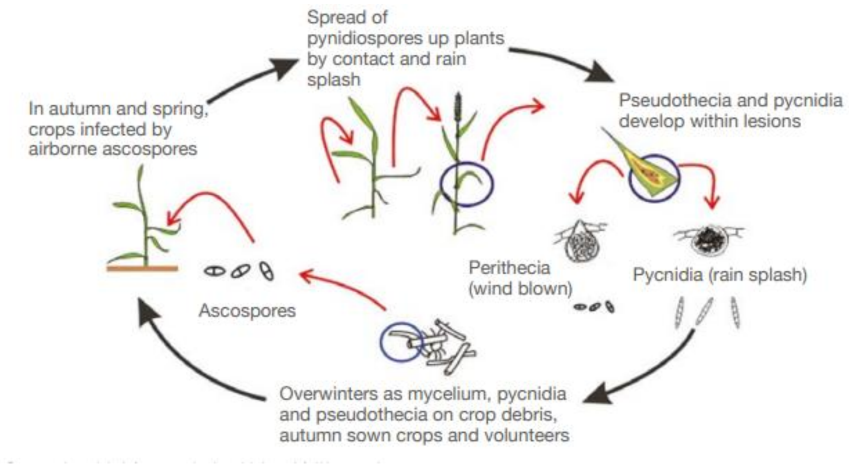
(Ponomarenko A., S.B. Goodwin, and G.H.J. Kema. 2011. Septoria tritici blotch (STB) of wheat. *Plant Health Instructor*).
(Agriculture and Horticulture Development Board AHDB – The encyclopedia of cereal diseases, 2018)

Generalities:
Septoria Tritici Blotch (STB) is caused by the ascomycete fungus *Zymoseptoria tritici*, (sexual stage: *Mycosphaarella graminicola*), which belongs to the order Dothideales. This disease constitutes one of the most important foliar diseases of wheat. This is a major economic constraint on wheat productivity, particularly in temperate growth regions.
Zymoseptoria tritici blotch is found commonly in the same fields and on the same plants as *Parastagonospora nodorum* (sexual stage: *Phaeosphaeria nodorum*), the causal agent of glum blotch of wheat. When both pathogens occur together, they are referred to collectively as the Septoria blotch complex or Septoria complex. Only *P. nodorum* causes symptoms on ears.

Symptoms:
Symptoms of septoria can be seen very early in the growing season. On young autumn-sown wheat, water-soaked patches, which quickly turn brown and necrotic, may be evident by early December and throughout the winter on the lowest leaves. These contain the visible black pycnidia, which are the most characteristic feature of *Z. tritici*. Pycnidia are particularly common on dead over-wintering leaves of winter wheat. Lesions on the mature plant are brown and sometimes restricted by veins giving a rectangular appearance. The black pycnidia become more visible in the lesions as the symptoms develop. Lesions may coalesce leading to large areas of necrotic brown tissue.

Life cycle & Epidemiology:

Figure 3.2-11: *Zymoseptoria tritici* life cycle



Primary infection by *Z. tritici* occurs soon after seedlings emerge in fall (for winter wheat) or spring. Ascospore germ tubes are attracted either to the stomata, through which they gain entry into the substomatal cavity directly or after production of an appressorium-like structure (infection cushion). For several days the hyphae grow intercellularly with little increase in biomass. After the switch from biotrophic to necrotrophic growth, cells collapse and lesions appeared. The lesions expand, primarily in the direction of the leaf veins to form long, narrow, necrotic blotches. Pycnidia develop around stomata within the necrotic areas of the lesions and exude conidia.

Conidia constitute the secondary inoculum and are disseminated by rain splash to leaves of the same or nearby plants. Secondary spread of the disease also can be by ascospores. Pycnidia with conidia are produced roughly 14 to 40 days after infection, depending on the host and seasonal conditions. These spores disperse through rain wash and splashing, causing local spread of the disease to uninfected leaves of the same and nearby plants. Conidia and ascospores contribute to the epidemic but the asexual cycle seems to dominate during the growing season. Ascospores can be airborne over large distances, while conidia are unlikely to travel far from their site of origin by rain-splash dispersal. Conidia help to spread the disease upwards through the canopy.
Infection of flag leaves (last leaf to emerge on a wheat stalk) is common and leads to greatly reduced yields and poor quality of harvested grain.
Debris from heavily infected leaves and stems remains in fields after harvest to produce inoculum for the next growing season. The pathogen survives crop-free periods primarily as pseudothecia but also in pycnidia on crop debris. Autumn-sown crops and volunteer plants can aid survival over winter.

Table 3.2-12: Major / minor status of intended uses (for all cMS and zRMS)

Crop and/or situation	Crop status		Target or group of targets controlled	Pest status	
	Major	Minor		Major	minor
Winter wheat (TRZAW)	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-	SEPTTR, LEPTNO, PUCCRT, PUCCST, ERYSGR, PYRNTR FUSASP	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	HU-LEPTNO
Spring wheat (TRZAS)	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-	SEPTTR, LEPTNO, PUCCRT, PUCCST, ERYSGR, PYRNTR FUSASP	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-
Einkorn wheat (TRZMO)	-	AT AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-	-	-
Emmer wheat (TRZDI)	-	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-	-	-
Tritordeum	-	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-	-	-
Spelt (TRZSP)	-	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	SEPPTR, PUCCSI, ERYSGR	AT, BE, CZ, HU, IE, LU, NI, NL, PL, RO, SK, DE	-
Wheat Durum (TRZDU)	AT, BE, CZ, DE, ~~HU~~, SK	LU, IE, NI, RO, NL, PL, HU	SEPPTR, PUCCRE, PUCCST, RHYNSE, ERYSGR, PSDCHA, FUSASP, MICDSP	AT, BE, CZ, DE, HU, PL, SK	LU, IE, NI, RO, NL
Triticale	AT, BE, CZ, DE, HU, PL, SK	LU, IE, NI, RO, NL	SEPPTR, PUCCRE, PUCCST, RHYNSE, ERYSGR, PSDCHA, FUSASP, MICDSP	AT, BE, CZ, DE, HU, PL, SK	LU, IE, NI, RO, NL, HU-RHYNSE
Rye (SECCW)	AT, CZ, DE, HU, PL (winter)	BE, IE, NI, LU. NL, RO, SK, PL (spring)	SEPTTR, PUCCRE, ERYSGR, RHYNSE PSDCHA, FUSASP, MICDSP	AT, BE, CZ, DE, HU, IE, NI, LU, NL, PL, RO, SK	-
Oats (AVESS)	AT, CZ, IE, NI, RO, SK, PL,	BE, ~~DE,~~ HU, NL, ~~PL,~~ LU,	ERYSGR(ERYSGA), PUCCCO(PUCCCA)	AT, CZ, IE, NI, RO, SK, DE, BE,	-

Crop and/or situation	**Crop status**		**Target or group of targets controlled**	**Pest status**	
	Major	**Minor**		**Major**	**minor**
	DE		PYRNAV, PSDCHA	DE, HU, NL, PL, LU	
Winter barley (HORVW)	AT, BE, CZ, DE, HU, IE, NI, NL, PL, RO, SK	LU	RAMUCC, PSDCHA, PUCCHD, ERYSGR, RHYNSE, PYRNTE	BE, CZ, DE, HU, IE, NI, LU, NL, PL, RO, SK	HU-RAMUCC, RHYNSE
Spring barley (HORVS)	AT, CZ, DE, HU, IE, NI, LU*, NL, PL, RO, SK	BE	RAMUCC, PSDCHA, PUCCHD, ERYSGR, RHYNSE, PYRNTE	BE, CZ, DE, HU, IE, NI, LU, NL, PL, RO, SK	HU-RAMUCC, RHYNSE
Winter oilseed rape (BRSNW)	AT,BE, CZ, DE, HU, RO**, SK, PL, IE, NI	NL, LU	ALTEBA, ERYSCR, LEPTMA, PYRPBR, SCLESC	BE, CZ, DE, HU, IE, RO**, SK, PL, NI	NL, LU, HU-ERYSCR
Spring oilseed rape (BRSNS)	BE, CZ, HU, RO**, SK	AT, DE, IE, NI, LU, NL, PL	ALTEBA, ERYSCR, LEPTMA, PYRPBR, SCLESC	BE, CZ, HU, PL, RO**, SK	AT, DE, IE, NI, LU, NL~~, PL,~~ HU-ERYSCR

(source: EUMUDA database for EU Minor Uses database, https://www.eumuda.eu/ & National lists on major/minor crops)
*Luxembourg has 'no official list or major / minor crops or major / minor uses; no definition of these terms'.
**No information available from EUMUDA.

<u>Cereal production in Europe</u>
With a production area of more than 56 million ha and 324 million tons in the European Union in 2019 (Eurostat, 2021), cereal production can be regarded as major part of agricultural plant production in Europe. Compared to the worldwide production, this area makes approx. 13% of the world´s cereal production. The major cereal crop for countries of the European Union is wheat, followed by barley.

The production (surface in ha, production in tons) of the major target cereals in each cMS is summarized in the following table.

Table 3.2-13: Production (per 1000 t) and cultivated areas (per 1000 ha) of the target crops in the European Union and in some countries of the Central EU regulatory zone in 2019 (Eurostat 26/05/2021)

CROP	Winter wheat & Spelt		Durum wheat		Rye		Winter barley		Spring barley	
Area/Production	1000 ha	1000 t	1000 ha	1000 t	1000 ha	1000 t	1000 ha	1000 t	1000 ha	1000 t
European Union	23 882,10	147 860,09	2 143,98	7 635,33	2 220,45	8 377,19	5 335,85	33 164,24	6 962,90	30 360,46
Poland	2 511,33	10 807,49	0,00	0,00	903,80	2 415,64	224,76	949,12	750,53	2 362,45
Austria	261,64	1 516,63	16,70	80,24	43,68	199,67	101,57	680,17	35,67	147,96
Belgium	203,76	1 902,38	0,00	0,00	0,77	3,36	43,80	384,41	2,95	16,62
Czech Republic	839,45	4 812,16	0,00	0,00	31,13	157,56	107,71	644,11	211,88	1 073,95
Germany	3 086,70	22 907,90	31,50	154,70	-	-	1 351,90	9 762,80	356,90	1 828,70
Hungary	978,72	5 215,24	36,92	162,47	25,94	90,54	222,13	1 268,69	25,23	114,57
Ireland	63,48	595,36	0,00	0,00	0,00	0,00	82,85	740,18	96,52	739,43
Luxembourg	13.36	82.26	0,00	0,00	1,14	6,44	4,46	28,16	1,60	7,86
The Netherlands	120,55	1 130,53	0,00	0,00	1,49	5,30	11,09	97,96	22,30	114,41
Romania	2 162,64	10 280,58	5,73	16,53	9,36	26,18	348,79	1 597,55	100,10	282,39
Slovakia	363,21	1 751,33	43,61	187,80	13,90	48,69	41,26	216,74	85,12	382,82

CROP	Oat		Triticale		Oilseed rape	
Area/Production	1000 ha	1000 t	1000 ha	1000 t	1000 ha	1000 t
European Union	2 571,70	8 023,77	2 766,03	11 179,26	5 648,42	17 040,68
Poland	495,50	1 209,58	1 314,79	4 498,20	875,21	2 268,85
Austria	20,60	77,35	59,82	326,34	35,97	107,17
Belgium	3086	20,17	6,06	40,07	9,26	33,43
Czech Republic	42,53	134,41	39,67	195,41	379,78	1 156,97
Germany	126,30	519,30	358,20	2 194,90	856,80	2 830,20
Hungary	21,77	70,31	83,91	338,34	300,60	912,12
Ireland	23,82	193,03	0,00	0,00	9,24	37,49
Luxembourg	1,40	7,23	4,91	28,96	2,88	10,06
The Netherlands	1,43	8,36	1,33	7,05	1,78	6,01
Romania	161,19	361,57	78,77	314,00	352,62	798,22
Slovakia	12,09	31,90	10,03	34,69	147,02	422,23

Compliance with the Uniform Principles

The overall assessment was performed according to the uniform principles, by officially recognized organizations.

Information on trials submitted (3.1 Efficacy data)

In all trials summarized in this Dossier, the test product was referred with CA3642. Distribution of trials is displayed in Table 3.2-14. Individual trial details are available in Appendix 5 of the Biological Assessment Dossiers and in the trial reports.

Table 3.2-14: Presentation of trials

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
Winter wheat	SEPTTR	Bulgaria	2021	MED + EFF			2	GEP
		Germany	2019	MED + EFF + P	4			GEP
				MED + EFF	1			GEP
			2020	MED + EFF + P	2			GEP
			2021	MED + EFF + P	3			GEP
		France	2019	MED + EFF + P	5			GEP
			2020	MED + EFF + P	2			GEP
			2021	MED + EFF + P	1			GEP
		Great Britain	2019	MED + EFF + P	5			GEP
				MED + EFF	1			GEP
			2020	MED + EFF + P	5			GEP
			2021	MED + EFF + P	3			GEP
		Hungary	2019	MED + EFF			4	GEP
			2020	MED + EFF + P			5	GEP
		Lithuania	2019	MED + EFF + P		1		GEP
			2020	MED + EFF		1		GEP
			2021	MED + EFF + P		2		GEP
				MED + EFF		1		GEP
		Latvia	2019	MED + EFF + P		1		GEP
		Poland	2019	MED + EFF + P		6		GEP
			2020	MED + EFF + P		4		GEP
				MED + EFF		5		GEP
			2021	MED + EFF		5		GEP
		Romania	2019	MED + EFF + P			2	GEP
			2021	MED + EFF			2	GEP
	Total	–	2019 - 2021		32	26	15	-
	PUCCRE / PUCCRT	Bulgaria	2019	MED + EFF			1	GEP
			2021	MED + EFF			1	GEP
		Germany	2019	MED + EFF + P	1			GEP
			2020	MED + EFF + P	1			GEP
		France	2019	MED + EFF + P	3			GEP
			2020	MED + EFF + P	1			GEP
		Great Britain	2020	MED + EFF + P	1			GEP
		Hungary	2019	MED + EFF			1	GEP
		Poland	2019	MED + EFF + P		4		GEP
				EFF		2		GEP
			2020	MED + EFF + P		1		GEP
		Romania	2020	MED + EFF + P			1	GEP
			2021	MED + EFF			1	GEP
	Total	–	2019 - 2021		7	7	5	-
	PUCCSI / PUCCST	Great Britain	2019	MED + EFF + P	4			GEP
			2020	MED + EFF + P	6			GEP
		Germany	2020	MED + EFF + P	1			GEP
		Poland	2020	MED + EFF + P		1		GEP
		Romania	2019	MED + EFF + P			2	GEP
	Total	–	2019 - 2020		11	1	2	-
	ERYSGR / ERYSGT	Germany	2019	MED + EFF + P	2			GEP

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
			2021	MED + EFF + P	2			GEP
		France	2019	MED + EFF + P	2			GEP
			2021	MED + EFF + P	1			GEP
		Great Britain	2019	MED + EFF + P	1			GEP
			2020	MED + EFF + P	1			GEP
		Hungary	2019	MED + EFF			1	GEP
			2020	MED + EFF + P			2	GEP
		Lithuania	2019	MED + EFF		1		GEP
				MED + EFF + P		3		GEP
			2021	MED + EFF + P		1		GEP
		Latvia	2021	MED + EFF + P		1		GEP
		Poland	2019	MED + EFF + P		1		GEP
			2020	MED + EFF + P		4		GEP
		Romania	2019	MED + EFF + P			1	GEP
			2020	MED + EFF + P			2	GEP
		Slovakia	2020	MED + EFF + P			2	GEP
	Total	–	2019 - 2021		9	11	8	-
	PYRNTR	Bulgaria	2021	MED + EFF			2	GEP
		Czech Republic	2019	MED + EFF + P	1			GEP
		Lithuania	2019	MED + EFF + P		1		GEP
			2021	MED + EFF + P		2		GEP
		Latvia	2019	MED + EFF + P		2		GEP
			2020	MED + EFF + P		2		GEP
			2021	MED + EFF + P		3		GEP
		Slovakia	2020	MED + EFF + P			1	GEP
	Total	–	2019 - 2021		1	10	3	-
	FUSACU / FUSASP	Germany	2019	EFF	1			GEP
		Poland	2019	MED + EFF		1		GEP
	Total	–	2019		1	1	0	-
	GIBBZE	Germany	2019	MED + EFF	1			GEP
		Great Britain	2019	MED + EFF	1			GEP
		Poland	2019	MED + EFF		1		GEP
				EFF		1		GEP
	Total	-	2019	-	2	2	0	-
TOTAL	-	-	2019-2021	-	63	58	31	-
Spelt (TRZSP)	SEPTTR	Poland	2021	MED+EFF+Y+Q		1		GEP
	Total	-	2021	-	0	1	0	-
	ERYSGR	Poland	2021	MED+EFF+Y+Q		1		GEP
	Total	-	2021	-	0	1	0	-
TOTAL	-	-	2021	-	0	2	0	-
Durum wheat (TRZDU)	SEPTTR	Germany	2021	MED+EFF	3	-		GEP
		France	2019	MED+EFF	2	-		GEP
		Hungary	2019	MED+EFF	-	-	2	GEP
		Romania	2020	MED+EFF	-	-	1	GEP
	Total	-	2019-2021	-	5	-	3	-
	PUCCSI	Germany	2021	MED+EFF	1	-	-	GEP
	TOTAL	-	2021	-	1	-	-	-
	ERYSGT	Germany	2019-2021	MED+EFF	2	-	-	GEP

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
		Hungary	2019	MED+EFF	-	-	2	GEP
	Total	-	2019-2021	-	2	0	2	-
TOTAL	-	-	2019-2021	-	8	0	5	-
Durum wheat spring - TRZDS	ERYSGT	Germany	2020	MED+E+Q	1			GEP
	SEPTTR	Germany	2020	MED + E+Q	1			GEP
	TOTAL	-	2020	-	2	0	0	-
TOTAL	-	-	2020	-	2	0	0	-
Triticale (TTLWI)	SEPTTR	Germany	2019	MED+EFF+Y+Q	2			GEP
			2020	MED+EFF+Y+Q	3			GEP
		France	2020	MED+EFF+Y+Q	1			GEP
		Poland	2019	MED+EFF+ Y+Q		2		GEP
		Romania	2019	MED+EFF+Y+Q			2	GEP
		Hungary	2020	MED+EFF+Y+Q			1	GEP
	Total	-	2019-2020	-	6	2	3	-
	RHYNSE	Germany	2019	MED+EFF+Y+Q	1	-	-	GEP
		Germany	2020	MED+EFF+Y+Q	1	-	-	GEP
	Total	-	2019-2020	-	2	-	-	-
	PUCCST	Germany	2020	MED+EFF+Y+Q	1	-	-	GEP
	Total	-	2019-2020	-	1	-	-	-
	ERYSGT	Germany	2019	MED+EFF+Y+Q	1	-	-	GEP
		France	2019	MED+EFF+Y+Q	1	-	-	GEP
	ERYSGR	Hungary	2020	MED+EFF+Y+Q	-	-	1	GEP
	Total	-	2019-2020	-	2	0	1	-
TOTAL	-	-	2019-2020	-	11	0	1	-
Winter rye (SECCW)	SEPTTR	Hungary	2019	MED+EFF+Y+Q			1	GEP
		Poland	2020	MED+EFF+Y+Q		1		GEP
		Romania	2019	MED+EFF+Y+Q			1	GEP
			2021	MED+EFF			1	GEP
		Great Britain	2019 & 2021	MED+EFF+Y+Q	2			GEP
	Total	-	2019-2021	-	2	1	3	-
	PUCCRR	Denmark	2019	MED+EFF	1			GEP
		Germany	2020	MED+EFF+Y+Q	2			GEP
		Hungary	2019	MED+EFF+Y+Q			1	GEP
		Poland	2019	MED+EFF+Y+Q		2		GEP
		Great Britain	2019	MED+EFF+Y+Q	1			GEP
	Total	-	2019-2020	-	4	2	1	-
	RHYNSE	France	2021	Y+Q	1			GEP
		Germany	2020	MED+EFF+Y+Q	2			GEP
		Latvia	2020	MED+EFF+Y+Q		1		GEP
	Total	-	2020-2021	-	3	1	0	-
TOTAL	-	-	2019-2020	-	9	4	4	-
Oat (AVESS)	ERYSGA	Poland	2020	EFF+Y+Q		2		GEP
		Germany	2020	EFF+Y+Q ****	2			GEP
	Total	-	2020	-	2	2		-
	PUCCCA/PUCCCO	Romania	2019	EFF+Y+Q			1	GEP
			2021	MED+EFF+Y+Q			1	GEP

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
		Germany	2019	EFF+Y+Q	1			GEP
			2020	EFF+Y+Q ****	2			GEP
		Poland	2021	MED+EFF+Y+Q		1		GEP
	Total	-	2019-2021	-	3	1	2	-
	PYRNAV	Latvia	2019	EFF+Y+Q		1		GEP
			2020	EFF+Y+Q		1		GEP
		Germany	2019	EFF+Y+Q	1			GEP
	Total	-	2019-2020	-	1	2	0	-
TOTAL	-	-	2019-2021	-	6	5	2	
Winter barley	Powdery mildew of barley (ERYSGH)	Great Britain	2021	E+MED		1		GEP
		Germany	2021	E+MED		1		GEP
		Czech Republic	2020	E		1		GEP
		France	2019	E		2		GEP
		Latvia	2021	E+MED	2			GEP
		Latvia	2019	E	2			GEP
		Lithuania	2021	E+MED	1			GEP
		Lithuania	2019	E	2			GEP
		Poland	2021	E+MED	1			GEP
		Poland	2019	E	2			GEP
		Hungary	2021	E+MED			2	GEP
		Hungary	2019-2020	E			2	GEP
	TOTAL	-	2019-2021	-	10	5	4	-
	Brown rust of barley (PUCCHD)	Germany	2021	E+MED		1		GEP
		Germany	2019-2021	E		4		GEP
		Great Britain	2019-2020	E		2		GEP
		France	2019-2020	E		2		GEP
		Latvia	2021	E+MED	2			GEP
		Latvia	2019-2021	E	3			GEP
		Lithuania	2019	E	1			GEP
		Poland	2021	E+MED	3			GEP
		Poland	2019-2021	E	5			GEP
		Hungary	2021	E+MED			1	GEP
		Hungary	2019-2021	E			6	GEP
		Romania	2020	E			2	GEP
		Slovakia	2020	E			1	GEP
	TOTAL	-	2019-2021	-	13	9	10	-
	Net blotch of barley (PYRNTE)	Germany	2021	E+MED		1		GEP
		Germany	2019-2021	E		6		GEP
		Great Britain	2019	E		2		GEP
		Czech Republic	2019-2020	E		3		GEP
		France	2019-2020	E		2		GEP
		Latvia	2019	E	2			GEP
		Lithuania	2021	E+MED	2			GEP
		Poland	2021	E+MED	5			GEP
		Poland	2019-2021	E	22			GEP
		Bulgaria	2019	E			9	GEP
		Hungary	2021	E+MED			1	GEP

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
		Hungary	2019-2020	E			2	GEP
		Romania	2019	E			2	GEP
	TOTAL	-	2019-2021	-	31	14	14	-
	Ramularia leaf spot of barley (RAMUCC)	Czech Republic	2021	E+MED		1		GEP
		Germany	2019-2020	E		6		GEP
		Great Britain	2021	E+MED		1		GEP
		Great Britain	2019-2021	E		3		GEP
		France	2019-2020	E		5		GEP
		Latvia	2020	E	2			GEP
		Poland	2021	E+MED	2			GEP
		Poland	2020	E	1			GEP
		Romania	2020	E			2	GEP
		Slovakia	2020	E			5	GEP
	TOTAL	-	2019-2021	-	5	16	7	-
	Leaf blotch of cereals (RHYNSE)	Germany	2021	E+MED		1		GEP
		Germany	2019-2021	E		6		GEP
		Great Britain	2019	E		3		GEP
		France	2021	E+MED		1		GEP
		France	2019-2021	E		2		GEP
		Latvia	2020	E	1			GEP
		Poland	2021	E+MED	1			GEP
		Poland	2019-2020	E	2			GEP
		Bulgaria	2019	E			1	GEP
		Slovakia	2020	E			2	GEP
	TOTAL	-	2019-2021	-	4	13	3	-
	Leaf stripe of barley (PYRNGR	France	2019-2020	E		2		GEP
	TOTAL	-	2019-2021	-	-	2	-	-
TOTAL	-	-	2019-2021	-	66	50	38	-
Spring barley (HORVS)	ERYSGH	Czech Republic	2019	EFF+Y+Q	2			GEP
		Germany	2019	EFF+Y+Q	2			GEP
		UK	2021	MED+EFF	1			GEP
		Latvia	2019	EFF+Y+Q		1		GEP
		Poland	2021	MED+EFF		2		GEP
		Hungary	2019	EFF+Y+Q			1	GEP
		Slovakia	2019	EFF+Y+Q			3	GEP
	Total	-	2019-2021	-	5	3	4	-
	PUCCHD	Germany	2019	EFF+Y+Q	1			GEP
			2020	EFF	2			GEP
			2021	MED+EFF	1			GEP
		UK	2019	EFF+Y+Q	1			GEP
			2021	MED+EFF	1			GEP
		Latvia	2020	EFF		1		GEP
			2020	EFF+Y+Q		1		
			2021	MED+EFF		1		GEP
		Poland	2019	EFF+Y+Q		1		GEP
			2021	MED+EFF		1		GEP

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
		Hungary	2019	EFF			1	GEP
			2019	EFF+Y+Q			1	GEP
			2020	EFF			1	GEP
		Slovakia	2019	EFF			1	GEP
			2019	EFF+Y+Q			2	GEP
	Total	-	2019-2021	-	6	5	6	-
	PYRNTE	Denmark	2019	EFF+Y+Q	1			GEP
		Germany	2019	EFF+Y+Q	1			GEP
			2020	EFF	2			GEP
			2021	MED+EFF	1			GEP
		UK	2019	EFF	2			GEP
			2020	EFF	1			GEP
			2020	EFF+Y+Q	1			GEP
		Lithuania	2020	EFF		1		GEP
			2021	MED+EFF		1		GEP
		Latvia	2020	EFF		2		GEP
			2020	EFF+Y+Q		2		
		Poland	2019	EFF+Y+Q		3		GEP
			2020	EFF		11		GEP
			2021	MED+EFF		7		GEP
		Hungary	2019	EFF+Y+Q			1	GEP
			2020	EFF			3	GEP
			2020	EFF+Y+Q			1	GEP
		Romania	2019	EFF+Y+Q			2	GEP
		Slovakia	2019	EFF+Y+Q			1	GEP
			2020	EFF			1	GEP
	Total	-	2019-2021	-	9	27	9	-
TOTAL	-	-	2019-2021	-	20	35	19	-
Winter oilseed rape BRSNW	ALTEBA	Czech Republic	2019	P+MED+EFF+Y+Q	1			GEP
		Germany	2020	P+MED+EFF	4			GEP
			2021	P+MED+EFF+Y+Q	1			GEP
		UK	2020	P+MED+EFF	1			GEP
		Latvia	2020	P+MED+EFF		3		GEP
		Poland	2019	P+MED+EFF+Y+Q		2		GEP
			2020	P+MED+EFF		3		GEP
			2020	P+MED+EFF+Y+Q		1		
			2021	P+MED+EFF		1		GEP
		Hungary	2019	P+MED+EFF+Y+Q			1	GEP
			2020	P+MED+EFF+Y+Q			2	GEP
			2021	P+MED+EFF			1	GEP
		Romania	2019	P+MED+EFF+Y+Q			1	GEP
			2020	P+MED+EFF			1	GEP
		Slovakia	2019	P+MED+EFF			1	GEP
			2020	P+MED+EFF			1	GEP
	Total	-	2019-2021	-	7	10	8	-
	BOTRCI	UK	2019	MED+EFF	1			GEP
			2020	P+MED+EFF	1			GEP

Crop(s)	**Target(s)**	**Country**	**Years**	**Type of trial***	**Number of trials**			**GEP, non-GEP, official*** **
					Maritime zone	**North-East zone**	**South-East zone**	
		Germany	2021	MED+EFF	1			GEP
		Latvia	2019	MED+EFF+Y+Q		1		GEP
			2020	MED+EFF		3		GEP
		Romania	2021	MED+EFF			2	GEP
	Total	-	2019-2021	-	3	4	2	-
	ERYSCR	Czech Republic	2019	P+MED+EFF+Y+Q	1			GEP
		France (Maritime)	2020	P+MED+EFF	1			GEP
		Hungary	2020	P+MED+EFF			3	GEP
			2020	P+MED+EFF+Y+Q			3	GEP
		Romania	2019	P+MED+EFF+Y+Q			2	GEP
			2020	P+MED+EFF+Y+Q			2	GEP
			2020	P+MED+EFF			2	GEP
		Slovakia	2019	P+MED+EFF+Y+Q			1	GEP
			2020	P+MED+EFF			2	GEP
	Total	-	2019-2021	-	2	0	15	-
	LEPTMA	Czech Republic	2019	P+MED+EFF+Y+Q	1			GEP
			2020	P+MED+EFF	1			GEP
		France (Maritime)	2020	P+MED+EFF+Y+Q	1			GEP
		Germany	2019	P+MED+EFF+Y+Q	1			GEP
			2020	P+MED+EFF	2			GEP
			2021	MED+EFF	1			GEP
		UK	2020	P+MED+EFF	1			GEP
			2020	P+MED+EFF+Y+Q	1			GEP
		Latvia	2020	MED+EFF		1		GEP
		Lithuania	2020	P+MED+EFF		1		GEP
		Poland	2019	P+MED+EFF+Y+Q		2		GEP
			2020	P+MED+EFF		1		GEP
			2021	MED+EFF		1		GEP
		Hungary	2019	MED+EFF+Y+Q			2	GEP
			2020	MED+EFF			1	GEP
			2020	P+MED+EFF+Y+Q			3	GEP
			2021	MED+EFF			3	GEP
		Romania	2020	P+MED+EFF			1	GEP
			2020	P+MED+EFF+Y+Q			2	
	Total	-	2019-2021	-	9	6	12	-
	PYRPBR	France	2020	P+MED+EFF	1			GEP
			2020	MED+EFF	1			GEP
			2020	P+MED+EFF+Y+Q	1			GEP
			2021	MED+EFF	1			GEP
		Germany	2021	MED+EFF	1			GEP
		UK	2021	MED+EFF	1			GEP
			2021	MED+EFF+Y+Q	1			GEP
		Romania	2021	MED+EFF			2	GEP
	Total	-	2020-2021	-	5	0	2	-
	SCLESC	Czech Republic	2019	P+MED+EFF	1			GEP

Crop(s)	Target(s)	Country	Years	Type of trial*	Number of trials			GEP, non-GEP, official***
					Maritime zone	North-East zone	South-East zone	
			2019	P+MED+EFF+Y+Q	5			GEP
		France (Maritime)	2020	P+MED+EFF	1			GEP
			2020	P+MED+EFF+Y+Q	2			GEP
		Germany	2020	P+MED+EFF	7			GEP
			2020	P+MED+EFF+Y+Q	1			GEP
		UK	2021	P+MED+EFF	1			GEP
		Latvia	2020	P+MED+EFF		2		GEP
		Poland	2019	P+MED+EFF+Y+Q		1		GEP
			2020	P+MED+EFF		5		GEP
			2020	P+MED+EFF+Y+Q		4		GEP
			2021	P+MED+EFF		1		GEP
			2021	P+MED+EFF+Y+Q		3		GEP
		Hungary	2019	P+MED+EFF			1	GEP
			2019	P+MED+EFF+Y+Q			1	GEP
			2020	P+MED+EFF			2	GEP
		Romania	2019	P+MED+EFF+Y+Q			1	GEP
			2020	P+MED+EFF			2	GEP
		Slovakia	2020	P+MED+EFF			2	GEP
	Total	-	2019-2021	-	18	16	9	-
Total	-	-	2019-2021	-	44	36	48	-

** P = preliminary trial, MED = minimum effective dose, E = efficacy trial, Y = Yield (quantity), Q = (yield) Quality
*** GEP: Good Experimental Practices. Official: carried out by a national official organisation.
**** These trials have 2 diseases present and are represented twice

A range of appropriate reference standards was included in the different trials. Generally, reference standards were used at the registered application rate. In the Table 3.2-15 below, details (e.g. product compositions, formulation types, application rates, registration numbers and application rate per country) for all reference standards included in the efficacy trials summarized in this Biological Assessment Dossier are listed.

Table 3.2-15: Presentation of reference standards used in trials (efficacy trials, preliminary trials...)

Crop	Reference standard	Active sub-stance(s)	Formulation		Applica-tion rate in trials (per treat-ment)	Coun-tries where the prod-ucts were used(1)	Authorization num-ber	Registered applica-tion rate(3)
			Type (2)	Concentra-tion of a.s.				
Wheat	CA2702 Tazer/Azbany	Azoxystrobin	SC	250 g/L	1 L/ha	FR	2110162	1.0 L/ha
					0.8 L/ha	CZ	5398-0	0.8 L/ha
						DE	008967-60	1.0 L/ha
						FR	2110162	1.0 L/ha
						GB	15495	1.0 L/ha
						HU	04.2/86-1/2014	0.8-1.0 L/ha
						LT	AS2-35F(2020)	1.0 L/ha
						PL	R-48/2015	1.0 L/ha
						RO	110PC/22.07.2015	1.0.0 L/ha
						SK	14-02-1475	0.8 L/ha
	CA2702 Amistar	Azoxystrobin	SC	250 g/L	0.8 L/ha	LV	0187	0.8-1.0 L/ha
	CA2445	Prothicona-	EC	250 g/L	0.8 L/ha	CZ	4523-1	0.8 L/ha

	Proline/Joao	zole				DE	025287-00	0.8 L/ha
						FR	2060116 (Joao)	0.8 L/ha - 1-2 appl.
						GB	12084	0.8 L/ha
						HU	6300/1205-1/2020	0.6-0.8 L/ha - 2 appl./14days
						LT	AS2-6F(2018)	0.8 L/ha
						LV	0637	0.6-0.8 L/ha
						PL	R-128/2021 (virid 250 EC)	0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
						SK	06-02-0768	0.6-0.8 L/ha
	AVIATOR XPRO 225 EC	Bixafen Prothiocon-azole	EC	75 g/L 150 g/L	1.25 L/ha	HU		
						RO	352PC/29.11.2017	0.8-1 L/ha
						SK	19-00563-AU	0.8-1 L/ha
	BUMPER 25 EC	Propicona-zole	EC	250 g/L	0.5 L/ha	FR	9800384	0.5 L/ha
	DELARO 325 SC	Tri-floxystrobin Prothiocon-azole	SC	150 g/L 175 g/L	1.0 L/ha	PL	R-18/2016wu	1.0 L/ha
						LT	-	-
						LV	c.r.n	
	NATIVO PRO 325 SC	Tri-floxystrobin Prothiocon-azole	SC	150 g/L 175 g/L	0.6 L/ha	HU	-	-
						RO	056PC/29.09.2014	0.6-1.7 L/ha
	OSIRIS 65 EC	Epoxicona-zole Metcona-zole	EC	37.5g/L 27.5g/L	2 L/ha	LT	AS2-1F(2019)	2 L/ha
						LV	c.n.r	-
						PL	R-87/2012	1.5-2.5 L/ha
	PRIAXOR	Pyra-clostrobin Fluxapyrox-ad	EC	150 g/L 75 g/L	1.5 L/ha	HU	04.2/4127-1/2016	0.75-1.5 L/ha
						RO	273PC/28.02.2017	0.75-1.0 L/ha
						SK	16-02-1746	0.75-1.5 L/ha
	PROLINE 275	Prothicona-zole	EC	275 g/L	0.72 L/ha	GB	14790	0.72 L/ha
						FR	-	-
						DE	-	-
	PROSARO	Prothicona-zole Tebucona-zole	EC	125 g/L 125 g/L	1.0 L/ha	FR	2100108	1.0 L/ha - 2 appl.
	RIZA 20 EC	Tebucona-zole	EC	200 g/L	1.25 L/ha	HU	-	-
						RO	-	-
Spelt	CA2702 (Tazer/Azbany)	Azoxystrobin	SC	250 g/L	0.8 L/ha	POL	110PC/22.07.2015	1.0 L/ha
	PRIAXOR	Pyraclostrobin Fluxapyrox-ad	EC	150 g/L 75 g/L	1.5 L/ha	POL	R-46/2016	1.5 L/ha
Du-rum wheat	CA2702	Azoxystrobin	SC	250 g/L	0.8 L/ha	DEU	025090-00	1.0 L/ha
						FR	9600093	0.8-1.0 L/ha
						HU	35042/2001	0.75-1.0 L/ha
						RO	1811/04.12.1997	0.75-1.0 L/ha
	CA2445	Prothiconazole	EC	250 g/L	0.8 L/ha	DE	025287-00	0.8 L/ha
						FR	2060116	0.8 L/ha
						HU	6300/1205-1/2020	0.6-0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
Triti-cale	CA2702	Azoxystrobin	SC	250 g/L	0.8 L/ha	DEU	025090-00	1.0 L/ha
						FRA	9600093	0.8-1.0 L/ha
	CA2445 Proline/Joao	Prothiconazole	EC	250 g/L	0.8 L/ha	DEU	025287-00	0.8 L/ha
						FRA	2060116	0.8 L/ha
	OSIRIS 65 EC	Epoxiconazole	EC	37.5g/L 27.5g/L	2 L/ha	PL	R-87/2012	1.5-2.5 L/ha

		Metconazole						
	PRIAXOR	Pyraclostrobin Fluxapyroxad	EC	150 g/L 75 g/L	1.5 L/ha	HU	04.2/4127-1/2016	0.75-1.5 L/ha
	NATIVO PRO 325	Prothiconazole Trifloxistrobin	SC	175 g/L 150 g/L	1.0 L/ha	ROU	056PC/29.09.2014	1.0 L/ha
Rye	CA2702 Amistar	Azoxystrobin	SC	250 g/L	0.8 L/ha	DK	1-172	0.4-1.0 L/ha
						DE	025090-00	1.0 L/ha
						GB	18039	0.8-1.0 L/ha
						FR	9600093	0.8-1.0 L/ha
						PL	R-40/2011	0.8-1.0 L/ha
						LV	0187	0.8-1.0 L/ha
						RO	1811/04.12.1997	0.75-1.0 L/ha
						HU	35042/2001	0.75-1.0 L/ha
	CA2445 Proline/Joao	Prothiconazole	EC	250 g/L	0.8 L/ha	DK	18-473	0.8 L/ha
						DE	025287-00	0.8 L/ha
						FR	2060116	0.8 L/ha
						PL	R-128/2021	0.8 L/ha
						LV	0637	0.6-0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
	PROLINE 275	Prothiconazole	EC	275 g/L	0.72 L/ha	GB	14790	0.72 L/ha
	PRIAXOR	Pyraclostrobin, Fluxapyrox-ad	EC	150 g/L 75 g/L	1.5 L/ha	HU	04.2/4127-1/2016	0.75-1.5 L/ha
	OSIRIS	Epoxiconazole Metconazole	EC	37.5g/L 27.5g/L	2 L/ha	PL	R-87/2012	1.5-2.5 L/ha
Oat	CA2702 (Tazer/Azbany)	Azoxystobin	SC	250 g/L	0.8 L/ha	DE	008967-00/00	1.0 L/ha
						PL	R-48/2015	0.5-1.0 L/ha
						RO	110PC/22.07.2015	1.0 L/ha
						LV	0187	0.8-1.0 L/ha
	CA2445 (Proline)	Prothiconazole	EC	250 g/L	0.8 L/ha	DE	025287-00	0.8 L/ha
						PL	R-128/2021	0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
						LV	0637	0.6-0.8 L/ha
	TORERO	Azoxystobin	EC	250 g/L	1 L/ha	DE	008235-00	1L/ha
	PROSARO	Prothioconazole Tebuconazole	EC	125 g/L 125 g/L	1 L/ha	LV	0276	1 L/ha
	DELARO 325	Prothioconazole Trifloxystrobin	SC	175 g/L 150 g/L	1 L/ha	PL	R-18/2016wu	1 L/ha
Win-ter barley	CA2702 Tazer/Azbany	Azoxystrobin	SC	250 g/L	0.6 L/ha 0.8 L/ha	DE	008967-60	1.0 L/ha
					0.6 L/ha 0.8 L/ha	GB	15495	1.0 L/ha
					0.6 L/ha	FR	2110162	1.0 L/ha
					0.8 L/ha	BG	01581 PR3/15.05.2018	
					0.6 L/ha 0.8 L/ha	PL	R-48/2015	1.0 L/ha
					0.6 L/ha	LT	AS2-35F(2020)	1.0 L/ha

					0.8 L/ha	RO	110PC/22.07.2015	1.0.0 L/ha
					0.6 L/ha 0.8 L/ha	HU	04.2/86-1/2014	0.8-1.0 L/ha
					0.8 L/ha	SK	14-02-1475	0.8 L/ha
	CA2702 Amistar	Azoxystrobin	SC	250 g/L	0.8 L/ha	LV	0187	0.8-1.0 L/ha
	CA2445 Proline/Joao	Prothiconazole	EC	250 g/L	0.8 L/ha	DK	18-473	0.8 L/ha
						DE	025287-00	0.8 L/ha
						FR	2060116	0.8 L/ha
						PL	R-128/2021	0.8 L/ha
						LV	0637	0.6-0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
						GB	12084	0.8 L/ha
						CZ	4523-1	0.8 L/ha
						LT	AS2-6F(2018)	0.8 L/ha
	DELARO 325	Prothioconazol Trifloxystrobin	SC	175 g/L 150 g/L	1.0 L/ha	PL	R-18/2016wu	1.0 L/ha
						CZ	4656-0	1.0 L/ha
	MIRADOR XTRA	Azoxystrobin Cuproconazole	SC	200 g/L 80 g/L	1.0 L/ha 0.8 l/ha	CZ	4626-1	1.0 L/ha
	PROLINE 275	Prothiconazole	EC	275 g/L	0.72 L/ha	GB	14790	0.72 L/ha
	PRIAXOR	Pyraclostrobin, Fluxapyroxad	EC	150 g/L 75 g/L	1.5 L/ha	HU	04.2/4127-1/2016	0.75-1.5 L/ha
						SK	16-02-1746	0.75-1.5 L/ha
	OSIRIS	Epoxiconazole Metconazole	EC	37.5g/L 27.5g/L	2.0 L/ha	PL	R-87/2012	1.5-2.5 L/ha
	RIZA 20 EC	Tebuconazole	EC	200 g/L	1.25 L/ha	BG	01389 - PPP-1 / 03/23/2016	
Spring barley	CA2702 Tazer	Azoxystrobin	SC	250 g/L	0.8 L/ha	CZ	5398-0	0.8 L/ha
						DK	1-172	0.4-1.0 L/ha
						DE	008967-00/00	1.0 L/ha
						GB	15495	0.8-1.0 L/ha
						FR	2110162	0.8-1.0 L/ha
						LT	AS2-35F(2020)	1.0 L/ha
						LV	n.c.r.	-
						PL	R-48/2015	1.0 L/ha
						HU	04.2/85-1/2014	0.75-1.0 L/ha
						RO	110PC/22.07.2015	1.0 L/ha
						SK	14-02-1475	0.8 L/ha
	CA2445 Proline/Joao	Prothiconazole	EC	250 g/L	0.8 L/ha	CZ	4523-1	0.8 L/ha
						DK	18-473	0.8 L/ha
						DE	025287-00	0.8 L/ha
						FR	2060116	0.8 L/ha
						LT	AS2-6F(2018)	0.8 L/ha
						LV	n.c.r. (0637)	-
						HU	6300/1205-1/2020	0.6-0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
						SK	06-02-0768	0.8 L/ha
	PROLINE 275	Prothiconazole	EC	275 g/L	0.72 L/ha	GB	14790	0.72 L/ha
	PRIAXOR	Pyraclostrobin, Fluxapyroxa	EC	150 g/L 75 g/L	1.5 L/ha	HU	04.2/4127-1/2016	0.75-1.5 L/ha
						SK	16-02-1746	0.75-1.5 L/ha

		d						
	Nativo Pro	Prothioconazole Trifloxistrobin	SC	325 g/L	0.6 L/ha	RO	056PC/29.09.2014	0.6 L/ha
	OSIRIS	Epoxiconazole Metconazole	EC	37.5g/L 27.5g/L	2.0 L/ha	PL	n.c.r. (R-87/2012)	-
	DELARO	Prothioconazole Trifloxistrobin	SC	175 g/L 150 g/L	1.0 L/ha	PL	R-18/2016wu	1.0 L/ha
Oilseed rape	CA2702 Tazer	Azoxystrobin	SC	250 g/L	0.8 L/ha	CZ	5398-0	0.8 L/ha
						DE	008967-00/00	1.0 L/ha
						GB	15495	0.8-1.0 L/ha
						FR	2110162	0.8-1.0 L/ha
						LT	AS2-35F(2020)	1.0 L/ha
						LV	n.c.r.	-
						PL	R-48/2015	1.0 L/ha
						HU	04.2/85-1/2014	0.75-1.0 L/ha
						RO	110PC/22.07.2015	1.0 L/ha
						SK	14-02-1475	0.8 L/ha
	CA2445 Proline/Joao	Prothiconazole	EC	250 g/L	0.8 L/ha	CZ	4523-1	0.8 L/ha
						DE	025287-00	0.8 L/ha
						FR	2060116	0.8 L/ha
						LT	AS2-6F(2018)	0.8 L/ha
						LV	n.c.r. (0637)	-
						HU	6300/1205-1/2020	0.6-0.8 L/ha
						RO	457PC/15.11.2018	0.8 L/ha
						SK	06-02-0768	0.8 L/ha
	ARTINA	Metconazole	EC	90 g/L	1.0 L/ha	LT	AS2-81F	0.7-1.0 L/ha
	BISTRO	Metconazole	EC	90 g/l	0.6 L/ha	FR	2160260	0.8 L/ha
	CARAMBA	Metconazole	EC	60 g/L	1.5 L/ha	DE	024487-00	1.5 L/ha
					1.0 L/ha	PL	R-45/2010	0.7-1.0 L/ha
	PECARI 250 EC	Prothioconazole	EC	250 g/L	0.7 L/ha	DE	00A469-60	0.7 L/ha
	PLEXEO 60 EC	Metconazole	EC	60 g/L	1.0 L/ha	PL	R-38/2017wu	1.0 L/ha
	PROLINE 275	Prothiconazole	EC	275 g/L	0.72 L/ha	GB	14790	0.72 L/ha
	PROPULSE	Fluoripam + Prothioconazole	SE	250 g/L	0.8 L/ha	LV	0416	0.8-1.0 L/ha
					1.0 L/ha	HU	04.2/41-1/2014	1.0 L/ha
	PROSARO	Prothioconazole + Tebuconazole	EC	250 g/l	0.75 L/ha	CZ	4561-2	0.75 L/ha
					1.0 L/ha	LV	0276	1.0 L/ha
					0.75 L/ha	SK	06-02-0771	0.75 L/ha
	ORIUS EXTRA	Tebuconazole	EW	250 g/L	1.0 L/ha	PL	R-77/2015	1.0 L/ha
	ORIUS 25 EW	Tebuconazole	SE	250 g/L	1.0 L/ha	SK	15-02-1604	1.0 L/ha
	TILMOR	Prothioconazole + Tebuconazole	EC	240 g/l	1.2 L/ha	HU	04.2/7910-1/2011	1.2 L/ha
	YAMATO 303 SC	Thiophanate methyl	SE	303 g/L	1.5 L/ha	PL	n.c.r. (R-100/2008)	(1.5-1.75 L/ha)

WG: water dispersible granule, SC: suspension concentrate, EC: emulsifiable concentrate; c.n.r.: currently not registered; n.a.: not applicable
(1) only on use(s) applied for (with the test product).

(2) e.g. WP (wettable powder), EC (emulsifiable concentrate), etc.
(3) dose(s) / dose range authorized on that use in the country.
(4) Other relevant information (e.g. uses, number of applications, spray volume, method of application, etc.).

Justification for data outside countries/zones of submission

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia.

In general, justification for the use of biological efficacy data included in this dossier is made according to EPPO PP 1/241(1) "*Guidance on comparable climates*."

Moreover, climate is only one factor to be taken into account when data from one region should be extrapolated to another. It should be assumed that cultivation practice and occurrence of disease are not driven by calendar timing but by the phenological development of the host and target organism. Application timing may vary in point of time, but the ration between target occurrence, BBCH stage of crop, application timing and therefore expected efficacy should be the same across Europe.
For appropriate usage of CA3642, it is essential that application date is adapted to the respective conditions at different periods in different regions. Since crops and target organisms are the same and growing conditions and therefore growth stages of crops and targets are comparable for the three climatic zones at time of application, albeit at different periods in year, there is no reason to expect that results are not transferable from one EPPO-zone to another, provided that substantial factors (e.g. temperature, growth stage of crop and target) are considered.

3.2.1 Preliminary tests (KCP 6.1)

According to EPPO standard PP 1/306 (1) General principles for the development of co-formulated mixtures of plant protection products, justification should be provided; "for using mixtures from the point of view of efficacy, their potential advantages and disadvantages, plus an examination of the appropriateness of such mixtures in terms of managing resistance."

Azoxystrobin and prothioconazole are widely known active substances which are on the market since several years. Whilst products containing either azoxystrobin or prothioconazole alone or in combination are approved for use, CA3642 offers the convenience and benefits associated with the use of two complementary and overlapping modes of action of two active ingredients in a single product, with a different ratio to existing products. The new product CA3642 contains 150 g/L of both active ingredients.

In this section, justification is provided regarding the interest of the mixture and the active substances' ratio. Data is provided on oilseed rape, and on winter wheat as the representative species for cereals.

First, the effectiveness of the co-formulated product CA3642 for which registration is sought is compared to authorised products containing either azoxystrobin (CA2702, 250 g/L azoxystrobin, SC) or prothioconazole (CA2445, 250 g/L prothioconazole, EC or PROLINE 275, 275 g/L prothioconazole, EC) alone.

Then, to demonstrate the selection of the mixture ratio, CA3642 is compared to another co-formulation (CA3664) which contains 200 g azoxystrobin and 150 g prothioconazole per litre. Although that formulation is not authorised, the trials are permissible in the preliminary section to compare the efficacy of the different ratios.

Finally, further justification is discussed with reference to resistance management and other benefits.

Mixture justification on cereals

The results of 76 trials carried out from 2019 to 2021 are presented to demonstrate the advantage of using CA3642 compared to products containing just one of the active ingredients. Representative data from winter wheat is provided to support the justification in cereals.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-122.

The intended application rate for the product CA3642 in wheat is the range 1.2 L/ha - 1.4 L/ha:

- An application of 1.2 L/ha CA3642 equates to 180 g azoxystrobin and 180 g prothioconazole per hectare.
- An application of 1.4 L/ha CA3642 equates to 210 g azoxystrobin and 210 g prothioconazole per hectare.

Efficacy achieved by two applications of CA3642 at both intended dose rates is compared to efficacy achieved by products containing either azoxystrobin or prothioconazole, applied with a comparable amount of the single active ingredient per hectare:

- CA3642 is compared to CA2702 applied at 0.8 L/ha corresponding to 200 g azoxystrobin per hectare.
- CA3642 is compared to either to CA2445 applied at 0.8 L/ha corresponding to 200 g prothioconazole per hectare or to PROLINE 275 applied at 0.72 L/ha corresponding to 198 g prothioconazole per hectare.

The analysis is carried out for key representative uses.
The results are presented hereafter for the following diseases and analysed by EPPO zone:

- Septoria leaf spot – *Zymoseptoria tritici* (SEPTTR)
- Powdery mildew – *Blumeria graminis* / *Blumeria graminis* f. sp. *tritici* (ERYSGR / ERYSGT)
- Brown rust – *Puccinia recondita* / *Puccinia triticina* (PUCCRE / PUCCRT)
- Yellow rust – *Puccinia striiformis* / *Puccinia striiformis* f. sp. *tritici* (PUCCST / PUCCSI)
- Tan spot – *Pyrenophora tritici-repentis* (PYRNTR)

Winter Wheat (TRZAW) – Septoria leaf spot (SEPTTR – *Zymoseptoria tritici*)

TRZAW – SEPTTR – Maritime EPPO zone

The results of 30 trials are presented in order to confirm the interest of the mixture for the control of *Zymoseptoria tritici* (SEPTTR) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in France (8), Germany (9) and Great Britain (13) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 15 -37 days later, at BBCH 39 - 57.

Table 3.2-16: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Early assessment - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	*UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
Efficacy after 2 applications											
LEAF1 early	GBR	51	17	TIO	PESSEV Efficacy	8.1 a a	**4.1 a** ~~49.4~~ **49.6** **a**	**4.2 a** ~~48.1~~ **48.2** **a**	6.0 a 25.9 a		5.9 a 27.2 a
	GBR	40	15		PESSEV Efficacy	4.56 a	**0.37 b** **91.9**	**0.90 b** **80.3**	1.30 b 71.5		0.71 b 84.4
Mean efficacy				*2*	*Mean* Min Max	*6.3* 4.6 8.1	***70.6*** ~~49.4~~ **49.6** **91.9**	***64.2*** ~~48.1~~ **48.2** **80.3**	*48.7* 25.9 71.5		*55.8* 27.2 84.4
LEAF2 early	GBR	42	16		PESSEV Efficacy	4.1 a	**1.98 b** **52.1**	**1.94 b** **53.0**	2.03 b 50.8		1.89 b 54.2
	GBR	37	20		PESSEV Efficacy	9.8 a 9.8	**3.1 d** ~~68.4~~ **68.3**	**4.1 c** ~~58.2~~ **58.5**	3.4 d 65.3		3.6 d 63.3
	FRA	31	14	TA	PESSEV Efficacy	5.2 a a	**2.0 b** ~~61.5~~ **62.0** **b**	**2.0 b** ~~61.5~~ **61.0** **b**	2.7 b 48.1 b	2.3 b 55.8 b	
	GBR	51	17	TIO	PESSEV Efficacy	18.8 a a	**9.8 b** ~~47.9~~ **47.8** **a**	**8.8 b** ~~53.2~~ **52.9** **a**	13.8 b 26.6 a		11.6 b 38.3 a
	GBR	33	15		PESSEV Efficacy	10.33 a	**3.74 e** **63.8**	**5.03 d** **51.3**	4.20 e 59.3		5.98 c 42.1
	FRA	43	13	TA	PESSEV Efficacy	17.8 a a	**7.2 cd** ~~59.6~~ **59.5** **cd**	**4.6 d** ~~74.2~~ **74.0** **d**	13.9 ab 21.9 ab	4.7 d 73.6 d	
	GBR	36	15		PESSEV Efficacy	8.76 a	**0.00 d** **100.0**	**0.00 d** **100.0**	2.98 b 66.0	1.54 c 82.4	
	GBR	40	15		PESSEV Efficacy	33.13 a	**8.46 b** **74.5**	**9.80 b** **70.4**	10.85 b 67.3		11.29 b 65.9
	GBR	48	18		PESSEV Efficacy	15.0 a	**6.3 b** ~~58.0~~ **57.9**	**5.9 b** ~~60.7~~ **61.0**	5.8 b 61.3		6.0 b 60.0
	FRA	43	16		PESSEV Efficacy	6.68 a	**2.76 c** **58.7**	**2.46 c** **63.2**	4.89 b 26.8	2.43 c 63.6	

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	*UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
Mean efficacy				*4*	*Mean* Min Max	*9.6* 5.2 17.8	***69.9*** **58.7** **100.0**	***74.7*** ~~61.5~~ **61.0** **100.0**	*40.7* 21.9 66.0	*68.9* 55.8 82.4	
Mean efficacy				*6*	*Mean* Min Max	*15.2* 4.1 33.1	***60.8*** ~~47.9~~ **47.8** **74.5**	***57.8*** **51.3** **70.4**	*55.1* 26.6 67.3		*54.0* 38.3 65.9
LEAF3 early	GBR	48	18		PESSEV Efficacy	75.8 a	**53.3 c** **29.7**	**52.6 c** **30.6**	53.7 c 29.2		53.5 c 29.4
	FRA	43	16		PESSEV Efficacy	19.85 a	**8.85 bc** **55.4**	**6.23 c** **68.6**	14.54 b 26.8	12.19 bc 38.6	
	GBR	37	20	TA	PESSEV Efficacy	23.8 a a	**11.2 e** ~~52.9~~ **53.0** **e**	**13.2 d** ~~44.5~~ **44.6** **d**	15.5 c 34.9 c		12.1 de 49.2 de
	FRA	31	14		PESSEV Efficacy	15.1 a	**5.3 b** ~~64.9~~ **64.7**	**6.4 b** ~~57.6~~ **57.5**	7.8 b 48.3	6.3 b 58.3	
	GBR	51	17	TIO	PESSEV Efficacy	33.4 a a	**28.8 a** ~~13.8~~ **14.0** **a**	**26.4 a** **21.0** **a**	34.1 a 0.0 a		27.8 a 16.8 a
	GBR	33	15		PESSEV Efficacy	17.81 a	**6.41 f** **64.0**	**6.88 f** **61.4**	11.71 b 34.3		10.96 bc 38.5
	FRA	43	13		PESSEV Efficacy	87.6 a	**54.7 cd** ~~37.6~~ **37.5**	**52.1 d** **40.5**	81.2 ab 7.3	49.7 d 43.3	
	GBR	34	15		PESSEV Efficacy	4.19 a	**3.53 a** **15.8**	**3.94 a** **6.0**	3.84 a 8.4	3.98 a 5.0	
	GBR	36	15		PESSEV Efficacy	31.63 a	**10.51 c** **66.8**	**13.28 c** **58.0**	23.25 b 26.5	13.43 c 57.5	
	GBR	48	16		PESSEV Efficacy	10.45 a	**1.23 d** ~~88.2~~ **88.3**	**2.24 b** **78.6**	1.31 d 87.5	1.49 cd 85.7	
	DEU	32	14	TA	PESSEV Efficacy	10.4 a a	**2.8 bc** ~~73.1~~ **73.6** **bc**	**4.4 bc** ~~57.7~~ **57.5** **b**	5.2 b 50.0 b	3.3 bc 68.3 bc	
	GBR	40	15		PESSEV Efficacy	45.56 a	**24.10 b** **47.1**	**25.50 b** **44.0**	27.43 b 39.8		27.59 b 39.4
	GBR	38	15		PESSEV	18.08 a	**7.86 bcd**	**7.91 bcd**	10.11 b		6.23 d

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	*UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
					Efficacy		**56.5**	~~56.3~~ **56.2**	44.1		65.5
	GBR	42	16		PESSEV Efficacy	21.63 a	**10.14 b** **53.1**	**10.55 b** **51.2**	9.99 b 53.8		10.10 b 53.3
	DEU	53	16	TA	PESSEV Efficacy	11.56 a a	**3.75 c** **67.6** c	**4.86 b** **58.0** b	1.25 gh 89.2 h	3.58 cd 69.0 c	
Mean efficacy				*8*	*Mean* Min Max	*23.9* 4.2 87.6	***58.7*** **15.8** ~~88.2~~ **88.3**	***53.1*** **6.0** **78.6**	*43.0* 7.3 89.2	*53.2* 5.0 85.7	
Mean efficacy				*7*	*Mean* Min Max	*33.7* 17.8 75.8	***45.3*** ~~13.8~~ **14.0** **64.0**	***44.1*** **21.0** **61.4**	*33.7* 0.0 53.8		*41.7* 16.8 65.5

At assessment date ''early'' (15-20 DA-B), in **leaf level 1**, when considering the mean efficacy across 2 trials, the test product CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 70.6 % and 64.2 % efficacy respectively. The level of infection observed in the untreated check was 6.3 % severity.
Performance of CA3642 at both rates was numerically higher than CA2702 (200 g azoxystrobin/ha) on average although no statistically significant differences were observed in the individual assessments.
Performance of CA3642 was also numerically higher than PROLINE 275 (198 g prothioconazole/ha) on average with no statistically significant differences observed in the individual assessments.

When considering **leaf level 2**, the co-formulated test product was compared to the solo azoxystrobin and prothioconazole formulations CA2702 and CA2445 in 4 trials while it was compared to the solo formulations CA2702 and PROLINE 275 in 6 trials.
The test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved a mean efficacy across 4 trials of 69.9 % and 74.7 % respectively and across 6 trials of 60.8 % and 57.8 % respectively. The level of infection observed in the untreated check was 9.6 % severity across 4 trials and 15.2 % across 6 trials.
Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha) on average. In 5 out of 10 individual assessments, CA3642 applied at 1.2 L/ha (180 g a.s/ha azoxystrobin and 180 g a.s./ha prothioconazole) reached statistically higher level of control than CA2702, in 3 of 10 trials the 1.4 L/ha dose rate obtains significantly higher efficacy.
Performance of CA3642 was comparable to CA2445 (200 g prothioconazole/ha) on average but significantly higher in 1 out of 4 individual assessments.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) on average but significantly higher for both rates in 1 out of 6 individual assessments compared to both rates. In one trial, the 1.2 L/ha dose rate was significantly inferior.

When considering **leaf level 3**, the co-formulated test product was compared to the solo azoxystrobin and prothioconazole formulations CA2702 and CA2445 in 8 trials while it was compared to the solo formulations CA2702 and PROLINE 275 in 7 trials.
CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved a mean efficacy across 8 trials of 58.7 % and 53.1 % respectively and across 7 trials of 45.3 % and 44.1 % respectively. The level of infection observed in the untreated check was 23.9 % severity across 8 trials and 33.7 % across 7 trials.
Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.2 L/ha (180 g a.s/ha azoxystrobin and 180 g a.s./ha prothioconazole) in 6 out of 15 individual assessments. In one of these trials, the solo formulation was statistically significantly superior. For CA3642 applied at 1.4 L/ha, the performance of the co-formulation was statistically significantly superior in 5 trials compared to the solo AZX formulation.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) on average and no statistically significant differences were observed when applied at 1.4 L/ha in all 8 individual assessments. The performance of CA2445 was statistically significantly superior compared to the 1.2 L/ha dose rate in 2 trials,
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) on average. In 1 out of the 7 individual assessments, CA3642 applied at both rates reached a significantly higher level of control of the disease.

Table 3.2-17: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Late assessment</u> - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	*UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha
Efficacy after 2 applications											
LEAF1 late	GBR	55	30		PESSEV Efficacy	8.5 a	**2.0 b** ~~76.5~~ **76.2**	**2.5 b** ~~70.6~~ **70.9**	3.4 b 60.0		2.6 b 69.4
	FRA	62	32	 TS	PESSEV Efficacy	67.2 a a	**14.2 b** **78.9** **bc**	**12.1 b** **82.0** **c**	23.2 b 65.5 b	13.0 b 80.7 c	
	FRA	57	30		PESSEV Efficacy	17.6 a	**5.3 bc** ~~69.9~~ **69.8**	**5.9 bc** ~~66.5~~ **66.4**	8.9 b 49.4	4.2 bc 76.1	
	FRA	56	33	 TL	PESSEV Efficacy	8.15 a a	**0.65 c** **92.0** **ef**	**1.08 c** ~~86.7~~ **86.8** **de**	4.65 b 42.9 b	0.41 c 95.0 f	
Mean efficacy				*1*		*8.5*	***76.5***	***70.6***	*60.0*		*69.4*
Mean efficacy				*3*	*Mean* Min Max	*31.0* 8.2 67.2	***80.3*** ~~69.9~~ **69.8** **92.0**	***78.4*** ~~66.5~~ **66.4** ~~86.7~~ **86.8**	*52.6* 42.9 65.5	*83.9* 76.1 95.0	
LEAF2 late	FRA	57	30		PESSEV Efficacy	68.7 a	**10.4 d** **84.9**	**12.1 d** **82.4**	29.7 b 56.8	12.5 d 81.8	
	DEU	57	29	 TL	PESSEV Efficacy	10.2 a a	**2.0 d** ~~80.4~~ **80.2** **e**	**2.8 cd** ~~72.5~~ **72.8** **cd**	6.7 b 34.3 b	2.8 cd 72.5 cd	
	DEU	45	30	 TA	PESSEV Efficacy	4.5 a a	**0.5 b** ~~88.9~~ **88.6** **c**	**0.6 b** **86.7** **c**	1.7 b 62.2 b	0.5 b 88.9 c	
	DEU	57	29		PESSEV Efficacy	6.8 a	**3.3 cd** ~~51.5~~ **51.1**	**3.1 de** ~~54.4~~ **53.7**	3.1 de 54.4	2.1 e 69.1	
	GBR	55	30		PESSEV Efficacy	68.7 a	**13.5 b** **80.3**	**15.7 b** ~~77.1~~ **77.2**	16.5 b 76.0		17.4 b 74.7
	DEU	60	25	 TL	PESSEV Efficacy	8.8 a a	**1.0 d** ~~88.6~~ **89.2** **cd**	**1.4 cd** ~~84.1~~ **84.6** **cd**	5.6 b 36.4 a	3.9 bc 55.7 b	
	FRA	62	32		PESSEV Efficacy	100.0 a	**67.6 def** **32.4**	**59.8 f** **40.2**	94.6 ab 5.4	64.9 ef 35.1	

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	*UTC*	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
	FRA	56	33	 TL	PESSEV Efficacy	35.43 a	**3.80 cd** **89.3** **de**	**4.19 cd** **88.2** **de**	26.59 b 25.0 b	3.23 cd 90.9 e	
Mean efficacy				*7*	*Mean* Min Max	*33.5* 4.5 100.0	***73.7*** **32.4** **89.3**	***72.6*** **40.2** **88.2**	*39.2* 5.4 62.2	*70.6* 35.1 90.9	
Mean efficacy				*1*		*68.7*	***80.3***	***77.1***	*76.0*		*74.7*
LEAF3 late	DEU	48	28		PESSEV Efficacy	25.1 a	**0.2 c** **99.2**	**0.7 c** ~~97.2~~ **97.4**	5.4 b 78.5	0.0 c 100.0	
	FRA	38	15		PESSEV Efficacy	5.2 a	**0.2 c** **96.2**	**0.5 c** ~~90.4~~ **90.2**	3.0 b 42.3	0.3 c 94.2	
Mean efficacy				*2*	*Mean* Min Max	*15.2* 5.2 25.1	***97.7*** **96.2** **99.2**	***93.8*** ~~90.4~~ **90.2** ~~97.2~~ **97.4**	*60.4* 42.3 78.5	*97.1* 94.2 100.0	

At assessment date ''late'' (15-33 DA-B), when considering **leaf level 1**, the co-formulated test product was compared to the solo azoxystrobin and prothioconazole formulations CA2702 and PROLINE 275 in 1 trial while it was compared to the solo formulations CA2702 and CA2445 in 3 trials.
In 1 trial, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 76.5 % and 70.6 % efficacy respectively. The mean efficacy achieved across 3 trials was 80.3% and 78.4% respectively. The level of infection observed in the untreated check was 8.5 % severity in 1 trial and 31 % severity across 3 trials.
Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha). A statistically significant difference was observed between CA2702 and CA3642 applied at 1.2 L/ha (180 g a.s/ha azoxystrobin and 180 g a.s./ha prothioconazole) in 2 out of 4 individual assessments.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha). No significant difference was observed between CA2445 and CA3642 applied at 1.4 L/ha in the individual assessments.
Performance of CA3642 was equivalent to PROLINE 275 (198 g g prothioconazole/ha) with no statistically significant differences.

In **leaf level 2**, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved a mean efficacy across 7 trials of 73.7 % and 72.6 % respectively and in 1 trial 80.3 % and 77.1% respectively. The level of infection observed in the untreated check was 33.5 % severity across 7 trials and 68.7 % in 1 trial.
Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.2 L/ha (180 g a.s/ha azoxystrobin and 180 g a.s./ha prothioconazole) in 5 out of the eight assessments.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) on average and significantly higher at 1.4 L/ha in 2 assessments.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) with no statistically significant difference.

In **leaf level 3**, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved a mean efficacy across 2 trials of 97.7 % and 93.8 % respectively. The level of infection observed in the untreated check was 15.2 % severity.
Performance of CA3642 was higher than CA2702 (200 g azoxystrobin/ha) on average and this is statistically significant for both rates in the 2 assessments.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) on average with no statistically significant differences observed in the individual assessments.

Table 3.2-18: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> - Maritime EPPO zone

Leaf level assm. Timing		Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type / Rate	*UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PROLINE 275 PTZ 275 g/L EC 0.72 L/ha 198 g PTZ/ha
Efficacy after 2 applications												
LEAF1 very late		GBR	71	41		PESSEV Efficacy	37.4 a	**11.1 d** ~~70.3~~ **70.4**	**11.8 d** ~~68.4~~ **68.6**	21.6 c 42.2		6.8 e 81.8
		FRA	70	43	 TA	PESSEV Efficacy	98.9 a a	**58.95 ef** **40.4** **e**	**58.75 ef** **40.6** **e**	71.44 cde 27.8 cde	67.44 def 31.8 cde	
		GBR	59	42		PESSEV Efficacy	9.9 a	**4.8 d** ~~51.5~~ **51.6**	**5.4 bc** ~~45.5~~ **45.6**	5.8 b 41.4		5.4 bc 45.5
		FRA	58	41	 TA	PESSEV Efficacy	14.9 a a	**5.9 c** ~~60.4~~ **60.3** **c**	**6.9 bc** ~~53.7~~ **54.1** **bc**	8.4 b 43.6 b	6.7 bc 55.0 bc	
		GBR	74	40		PESSEV Efficacy	22.4 a	**6.1 c** ~~72.8~~ **72.7**	**8.4 bc** ~~62.5~~ **62.3**	14.0 b 37.5		6.6 c 70.5
		GBR	65	43	 TA	PESSEV Efficacy	6.26 a a	**0.20 d** **96.8** **c**	**1.57 bc** ~~74.9~~ **75.0** **b**	0.52 d 91.7 c		1.50 bc 76.0 b
		GBR	59	41		PESSEV Efficacy	10.0 a	**2.5 c** ~~75.0~~ **74.8**	**3.1 bc** ~~69.0~~ **69.1**	4.2 b 58.0		4.1 b 59.0
		FRA	62	44	 TA	PESSEV Efficacy	10.5 a a	**0.5 c** ~~95.2~~ **95.1** **c**	**0.8 c** ~~92.4~~ **92.7** **c**	5.7 b 45.7 b	1.3 c 87.6 c	
		DEU	72	37	 TL	PESSEV Efficacy	10.8 a a	**2.6 cd** ~~75.9~~ **75.7** **cd**	**4.0 bcd** ~~63.0~~ **63.1** **bc**	9.7 a 10.2 a	4.5 bcd 58.3 b	
		GBR	67	47		PESSEV Efficacy	65.6 a	**23.9 b** ~~63.6~~ **63.5**	**26.2 b** **60.1**	35.4 b 46.0	33.3 b 49.2	
		GBR	60	41		PESSEV Efficacy	10.2 a	**6.4 b** ~~37.3~~ **37.0**	**6.0 b** ~~41.2~~ **41.4**	5.3 b 48.0	6.3 b 38.2	
		GBR	63	42	 TA	PESSEV Efficacy	38.2 a a	**3.1 f** ~~91.9~~ **92.0** **g**	**9.4 e** **75.4** **e**	23.6 b 38.2 b	5.9 ef 84.6 f	
		DEU	69	49		PESSEV	14.7 a	**0.7 d**	**1.1 cd**	3.6 bc	4.8 b	

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	*UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha
				TA	Efficacy	a	~~95.2~~ **95.1** **cd**	~~92.5~~ **92.6** **cd**	75.5 b	67.3 b	
	DEU	64	46	TL	PESSEV Efficacy	16.3 a a	**8.0 bc** ~~50.9~~ **51.3** **bc**	**6.3 bc** ~~61.3~~ **61.2** **c**	10.1 b 38.0 b	4.5 c 72.4 c	
	FRA	84	53		PESSEV Efficacy	9.3 a	**4.4 b** ~~52.7~~ **52.8**	**4.7 b** ~~49.5~~ **49.0**	6.2 b 33.3	4.3 b 53.8	
	GBR	72	46		PESSEV Efficacy	87.4 a	**70.1 d** **19.8**	**64.8 f** ~~25.9~~ **26.0**	67.9 e 22.3		72.8 c 16.7
	DEU	66	49	TA	PESSEV Efficacy	34.4 a a	**9.2 g** ~~73.3~~ **73.4** **g**	**16.8 def** **51.2** **def**	28.3 b 17.7 b	13.1 fg 61.9 fg	
	DEU	67	39		PESSEV Efficacy	7.54 a	**3.23 c** **57.2**	**2.95 c** **60.9**	4.98 b 34.0	2.99 c 60.3	
	FRA	72	45		PESSEV Efficacy	90.2 a	**68.3 ab** **24.3**	**77.3 ab** **14.3**	69.2 ab 23.3	67.1 ab 25.6	
Mean efficacy				*13*	*Mean* Min Max	*32.4* 7.5 98.9	***62.9*** **24.3** ~~95.2~~ **95.1**	***58.1*** **14.3** **92.5**	*37.0* 10.2 75.5	*57.4* 25.6 87.6	
Mean efficacy				*6*	*Mean* Min Max	*28.9* 6.3 87.4	***64.4*** **19.8** **96.8**	***57.7*** ~~25.9~~ **26.0** ~~74.9~~ **75.0**	*48.9* 22.3 91.7		*58.3* 16.7 81.8
LEAF2 very late	GBR	59	42		PESSEV Efficacy	21.4 a	**10.1 f** **52.8**	**9.7 f** **54.7**	11.0 e 48.6		14.3 b 33.2
	GBR	74	40		PESSEV Efficacy	52.9 a	**23.3 c** ~~56.0~~ **55.9**	**22.9 c** **56.7**	42.6 b 19.5		24.6 c 53.5
	GBR	65	43		PESSEV Efficacy	14.69 a	**1.19 b** **91.9**	**2.02 b** ~~86.2~~ **86.3**	1.09 b 92.6		2.28 b 84.5
	GBR	59	41		PESSEV Efficacy	23.9 a	**8.0 f** ~~66.5~~ **66.6**	**14.0 d** ~~41.4~~ **41.6**	16.5 bc 31.0		14.1 d 41.0
	FRA	54	36		PESSEV Efficacy	37.9 a	**14.7 bc** ~~61.2~~ **61.3**	**14.1 bc** ~~62.8~~ **62.7**	29.0 ab 23.5	7.8 c 79.4	
	DEU	72	37		PESSEV Efficacy	22.1 a	**12.5 c** ~~43.4~~ **43.5**	**15.1 bc** ~~31.7~~ **31.9**	16.6 bc 24.9	14.9 bc 32.6	

Leaf level assm. Timing		Country	DA-A	DA-B	No. of trials & ARM	**Name Conc Type**	*UTC*	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
		~~FRA~~ -	~~56~~ -	~~41~~ -	- -	~~PESSEV~~ ~~Efficacy~~	~~13.4 a~~	~~2.1 b~~ ~~84.3~~	~~4.7 b~~ ~~64.9~~	~~5.5 b~~ ~~59.0~~	~~5.6 b~~ ~~58.2~~	
		GBR	67	47		PESSEV Efficacy	77.9 a	**29.9 c** **61.6**	**32.3 bc** **58.5**	43.6 b 44.0	41.2 bc 47.1	
		GBR	60	41		PESSEV Efficacy	14.8 a	**9.5 b** ~~35.8~~ **35.9**	**8.4 b** ~~43.2~~ **43.0**	8.6 b 41.9	8.4 b 43.2	
		GBR	63	42		PESSEV Efficacy	80.3 a	**8.5 e** **89.4**	**15.1 e** **81.2**	59.4 c 26.0	12.3 e 84.7	
		GBR	84	52		PESSEV Efficacy	12.0 a	**3.4 c** ~~71.7~~ **72.0**	**3.0 c** ~~75.0~~ **75.1**	1.6 d 86.7	2.9 c 75.8	
		DEU	62	42		PESSEV Efficacy	31.8 a	**2.8 bc** ~~91.2~~ **91.4**	**5.9 bc** ~~81.4~~ **81.5**	7.1 bc 77.7	6.3 bc 80.2	
		DEU	64	46		PESSEV Efficacy	33.8 a	**8.5 c** **74.9**	**13.3 bc** ~~60.7~~ **60.8**	13.9 bc 58.9	19.4 b 42.6	
		FRA	84	53		PESSEV Efficacy	45.3 a	**19.2 c** **57.6**	**25.5 bc** **43.7**	25.6 bc 43.5	25.6 bc 43.5	
		GBR	67	44	 TA	PESSEV Efficacy	16.1 a a	**4.5 b** ~~72.0~~ **71.9** **b**	**4.6 b** ~~71.4~~ **71.6** **b**	5.7 b 64.6 b		3.0 b 81.4 b
		GBR	72	46		PESSEV Efficacy	96.8 a	**87.6 e** **9.5**	**85.2 f** **12.0**	90.2 d 6.8		87.8 e 9.3
		DEU	59	42		PESSEV Efficacy	14.9 a	**3.4 b** **77.2**	**4.7 b** **68.5**	5.9 b 60.4	4.6 b 69.1	
		~~DEU~~ -	~~75~~ -	~~38~~ -	- -	~~PESSEV~~ ~~Efficacy~~	~~6.7 a~~	~~0.4 ef~~ ~~94.0~~	~~1.9 b~~ ~~71.6~~	- -	~~0.2 ef~~ ~~97.0~~	
		DEU	67	39	 TA	PESSEV Efficacy	21.19 a a	**9.75 cd** **54.0** **cd**	**9.46 cd** **55.4** **cd**	14.90 b 29.7 b	10.24 cd 51.7 cd	
Mean efficacy					*~~13~~ 11*	*Mean* Min Max	*~~31.7~~ 35.6* ~~6.7~~ 12.0 80.3	***~~69.0~~ 65.3*** ~~35.8~~ **35.9** ~~94.0~~ **91.4**	***~~61.4~~ 60.2*** ~~31.7~~ **31.9** **81.4**		*~~61.9~~ 59.1* 32.6 97.0	
Mean efficacy					*6*	*Mean* Min Max	*37.6* 14.7 96.8	***58.1*** **9.5** **91.9**	***53.7*** **12.0** **86.2**	*43.8* 6.8 92.6		*50.5* 9.3 84.5

Leaf level assm. Timing		**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	***UTC***	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
LEAF3 very late		GBR	74	40		PESSEV Efficacy	71.6 a	**34.4 c 52.0**	**29.8 c 58.4**	49.3 b 31.1		34.1 c 52.4
		GBR	65	43		PESSEV Efficacy	27.88 a	**7.96 b 71.4**	**9.24 b 66.9**	10.11 b 63.7		9.20 b 67.0
		GBR	67	47		PESSEV Efficacy	88.3 a	**58.6 b ~~33.6~~ 33.7**	**61.0 b 30.9**	69.9 b 20.8	67.2 b 23.9	
		GBR	60	41		PESSEV Efficacy	24.7 a	**15.0 b 39.3**	**13.0 b 47.4**	13.2 b 46.6	14.6 b 40.9	
		GBR	63	42		PESSEV Efficacy	100.0 a	**26.8 e 73.2**	**33.9 e 66.1**	100.0 a 0.0	71.6 b 28.4	
		DEU	56	38	TA	PESSEV Efficacy	19.7 a a	**5.6 b ~~71.6~~ 71.4 bc**	**8.5 b ~~56.9~~ 56.7 bc**	12.0 b 39.1 b	7.6 b 61.4 bc	
		GBR	72	46		PESSEV Efficacy	100.0 a	**97.9 e 2.1**	**93.7 i 6.3**	96.8 h 3.2		98.9 b 1.1
		FRA	56	33	TA	PESSEV Efficacy	70.69 a a	**9.66 de 86.3 def**	**10.00 de 85.9 def**	50.47 b 28.6 b	7.35 e 89.6 ef	
Mean efficacy					*5*	*Mean* Min Max	*60.7* 19.7 100.0	***60.8*** **~~33.6~~ 33.7** **86.3**	***57.4*** **30.9** **85.9**	*27.0* 0.0 46.6	*48.8* 23.9 89.6	
Mean efficacy					*3*	*Mean* Min Max	*66.5* 27.9 100.0	***41.8*** **2.1** **71.4**	***43.8*** **6.3** **66.9**	*32.7* 3.2 63.7		*40.2* 1.1 67.0

At assessment date ''very late'' (36-53 DA-B), when considering **leaf level 1**, the co-formulated test product was compared to the solo formulations azoxystrobin and prothioconazole CA2702 and CA2445 in 13 trials while it was compared to the solo formulations CA2702 and PROLINE 275 in 6 trials.
When considering the mean efficacy across 13 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 62.9 % and 58.1 % respectively. The mean efficacy achieved across 6 trials were 64.4 % and 57.7 % respectively. The level of infection observed in the untreated check was 32.4 % severity across 13 trials and 28.9 % severity across 6 trials.
Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) in 12 out of 19 individual assessments. In one of these trials, the solo formulation was statistically significantly superior.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) on average with no statistically significant differences observed in most of the individual assessments. In 1 assessment, CA3642 at 1.4 L/ha reached a significantly higher level of control of the disease.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) on average. A statistically significant difference was observed between PROLINE 275 and CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) in favour of CA3642 in 4 out of 6 individual assessments. In one trial, the solo formulation was statistically significantly superior.

In **leaf level 2**, when considering the mean efficacy across 13 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 69 % and 61.4 % respectively. The mean efficacy achieved across 6 trials were 58.1 % and 53.7 % respectively. The level of infection observed in the untreated check was 31.7 % severity across 13 trials and 37.6 % severity across 6 trials.
Performance of CA3642 was higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) in 8 out of 18 individual assessments.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) and to PROLINE 275 (198 g g prothioconazole/ha) on average with no statistically significant differences observed in most of the individual assessments. In three trials, the solo formulation was statistically significantly inferior compared to the 1.4 L/ha dose rate.

In **leaf level 3**, when considering the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 60.8 % and 57.4 % respectively. The mean efficacy achieved across 3 trials were 41.8 % and 43.8 % respectively. The level of infection observed in the untreated check was 60.7 % severity across 5 trials and 66.5 % severity across 3 trials.
Performance of CA3642 was higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed in 4 out of 8 individual assessments. For three of these assessments, both dose rates of the test product were statistically significantly superior compared to the solo formulation.
Performance of CA3642 was higher than CA2445 (200 g prothioconazole/ha) on average and that was significant in 1 individual assessment.
Performance of CA3642 was equivalent to PROLINE 275 (198 g g prothioconazole/ha) on average with no statistically significant differences observed in 2 out of 3 individual assessments.

TRZAW – SEPTTR – North-East EPPO zone

The results of 15 trials are presented in order to confirm the interest of the mixture for the control of *Zymoseptoria tritici* (SEPTTR) under the conditions of the North-East EPPO climatic zone. The trials were carried out in Latvia (1), Lithuania (5) and Poland (9) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 16 -52 days later, at BBCH 39 – 61.

Table 3.2-19: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF2 early	POL	50	15		PESSEV	4.2 a	**0.2 b**	**0.4 b**	0.8 b	0.3 b
					Efficacy		~~95.2~~ **96.1**	~~90.5~~ **90.4**	81.0	92.9
	POL	64	15		PESSEV	8.4 a	**0.5 b**	**0.5 b**	0.8 b	0.6 b
					Efficacy		~~94.0~~ **93.7**	~~94.0~~ **94.6**	90.5	92.9
				TA		a	bc	bc	bc	bc
	LTU	42	19		PESSEV	11.1 a	**4.5 cd**	**4.8 bcd**	7.4 b	5.5 bc
					Efficacy		~~59.5~~ **59.8**	~~56.8~~ **56.4**	33.3	50.5
Mean efficacy				*3*	*Mean*	*7.9*	~~*82.9*~~ ***83.2***	~~*80.4*~~ ***80.5***	*68.3*	*78.7*
					Min	4.2	~~59.5~~ **59.8**	~~56.8~~ **56.4**	33.3	50.5
					Max	11.1	~~95.2~~ **96.1**	~~94.0~~ **94.6**	90.5	92.9
LEAF3 early	LTU	31	15		PESSEV	6.9 a	**1.3 c**	**2.8 bc**	3.8 bc	3.3 bc
					Efficacy		~~81.2~~ **81.0**	~~59.4~~ **60.2**	44.9	52.2
	POL	50	15		PESSEV	11.1 a	**0.7 b**	**1.0 b**	3.0 b	1.2 b
					Efficacy		**93.7**	**91.0**	73.0	89.2
	POL	67	15		PESSEV	4.3 a	**0.4 c**	**0.9 bc**	1.0 bc	0.8 bc
					Efficacy		~~90.7~~ **91.8**	~~79.1~~ **78.5**	76.7	81.4
				TA		a	c	c	bc	c
	POL	64	15		PESSEV	5.9 a	**0.8 bc**	**1.8 bc**	1.2 bc	0.1 c
					Efficacy		~~86.4~~ **86.1**	~~69.5~~ **70.2**	79.7	98.3
				TA		a	bc	bc	bc	c
	POL	66	15		PESSEV	4.3 a	**2.0 b**	**1.4 b**	2.1 b	1.5 b
					Efficacy		~~53.5~~ **52.8**	~~67.4~~ **66.7**	51.2	65.1
	POL	49	15		PESSEV	10.9 a	**1.6 cd**	**2.4 cd**	4.9 b	1.3 d
					Efficacy		~~85.3~~ **85.7**	~~78.0~~ **78.2**	55.0	88.1
	LTU	39	17		PESSEV	10.2 a	**2.5 cd**	**1.7 d**	3.6 cd	2.2 cd
					Efficacy		~~75.5~~ **75.6**	~~83.3~~ **82.9**	64.7	78.4
	LTU	42	19		PESSEV	28.5 a	**13.1 cd**	**14.4 bcd**	19.2 b	14.7 bcd
					Efficacy		~~54.0~~ **54.1**	~~49.5~~ **49.3**	32.6	48.4
				TA		a	cd	bcd	b	bcd
	LTU	39	14		PESSEV	11.3 a	**2.9 f**	**3.8 ef**	8.6 b	3.9 ef
					Efficacy		~~74.3~~ **74.5**	~~66.4~~ **66.7**	23.9	65.5
Mean efficacy				*9*	*Mean*	*10.4*	~~*77.2*~~ ***77.3***	***71.5***	*55.7*	*74.1*
					Min	4.3	~~53.5~~ **52.8**	~~49.5~~ **49.3**	23.9	48.4
					Max	28.5	**93.7**	**91.0**	79.7	98.3
LEAF4 early	LTU	43	16		PESSEV	7.5 a	**1.0 b**	**1.5 b**	2.1 b	2.3 b
					Efficacy		~~86.7~~ **86.4**	~~80.0~~ **79.7**	72.0	69.3
	POL	66	15		PESSEV	6.0 a	**2.3 b**	**2.8 b**	3.2 b	2.7 b
					Efficacy		~~61.7~~ **61.9**	~~53.3~~ **53.6**	46.7	55.0
Mean efficacy				*2*	*Mean*	*6.8*	***74.2***	***66.7***	*59.3*	*62.2*
					Min	6.0	~~61.7~~ **61.9**	~~53.3~~ **53.6**	46.7	55.0

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
					Max	7.5	~~86.7~~ **86.4**	~~80.0~~ **79.7**	72.0	69.3

At assessment date "early" (14-19 DA-B), in **leaf level 2**, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and applied at 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved mean efficacy 82.9% and 80.4% respectively, across 3 trials. The level of infection observed in the untreated check was 7.9% severity.
Mean efficacy of CA3642 was higher than CA2702 (200 g azoxystrobin/ha, 68.3%). A statistically significant difference was observed between CA2702 and CA3642 applied at 1.4 L/ha in 1 out of 3 individual assessments, although clear numerically differences were found in 2 out of 3 assessments, at both rates.
Performance of CA3642 was comparable to CA2445 (200 g prothioconazole/ha, 78.7%) and no statistical difference was found in all individual assessments.

In **leaf level 3**, the test product CA3642 applied at 1.4 and 1.2 L/ha, achieved mean efficacy 77.2% and 71.5% respectively, across 9 trials.
The level of infection observed in the untreated check was 10.4% severity.
Performance of CA3642 was higher than CA2702 on average (55.7%): this is statistically significant in 3 out of 9 individual assessments at 1.4 L/ha and in 2 out of 9 individual assessments at 1.2 L/ha, although it is numerically different in 7 out of 9 assessments at both rates.
Mean efficacy of CA3642 was equivalent to CA2445 (74.1%) with no statistical difference observed in all individual assessments.

In **leaf level 4**, across 2 trials, the level of infection observed in the untreated check was 6.8% severity, and similar conclusions could be drawn when considering the numerical values, although no statistical difference was observed between CA3642 and solo formulations CA2702 and CA2445 in all individual assessments.

Table 3.2-20: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF1 late	LTU	56	31	 TL	PESSEV Efficacy	33.9 a a	**13.3 d** ~~60.8~~ **60.9** **de**	**15.3 cd** **54.9** **cde**	16.3 bcd 51.9 b-e	13.1 d 61.4 e
	LTU	50	28		PESSEV Efficacy	6.4 a	**1.7 c** ~~73.4~~ **73.9**	**1.4 c** ~~78.1~~ **78.6**	1.3 c 79.7	4.8 b 25.0
	POL	82	31		PESSEV Efficacy	5.0 a	**1.4 c** ~~72.0~~ **73.1**	**2.2 bc** ~~56.0~~ **56.1**	3.7 b 26.0	2.8 bc 44.0
	POL	83	32		PESSEV Efficacy	6.0 a	**2.2 c** ~~63.3~~ **63.9**	**3.2 bc** ~~46.7~~ **47.1**	4.0 b 33.3	3.5 bc 41.7
	POL	84	32	 TA	PESSEV Efficacy	5.3 a a	**0.6 c** ~~88.7~~ **88.3** **c**	**1.0 c** ~~81.1~~ **81.0** **c**	3.6 b 32.1 b	1.6 c 69.8 c
	POL	61	34		PESSEV Efficacy	36.6 a	**1.4 b** **96.2**	**1.9 b** ~~94.8~~ **94.7**	1.2 b 96.7	1.2 b 96.7

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
	LVA	52	27		PESSEV	5.0 a	**0.0 b**	**0.1 b**	0.7 b	0.1 b
					Efficacy		~~100.0~~ **99.5**	~~98.0~~ **98.5**	86.0	98.0
Mean efficacy				*7*	*Mean*	*14.0*	~~79.2~~ ***79.4***	~~72.8~~ ***73.0***	*58.0*	*62.4*
					Min	5.0	~~60.8~~ **60.9**	~~46.7~~ **47.1**	26.0	25.0
					Max	36.6	~~100.0~~ **99.5**	~~98.0~~ **98.5**	96.7	98.0
LEAF2 late	POL	82	31		PESSEV	7.2 a	**2.9 ef**	**4.3 bcd**	5.5 b	4.7 bc
					Efficacy		~~59.7~~ **59.9**	~~40.3~~ **40.5**	23.6	34.7
	POL	83	32		PESSEV	10.8 a	**4.8 c**	**5.6 c**	7.6 b	6.3 bc
					Efficacy		~~55.6~~ **55.2**	~~48.1~~ **47.7**	29.6	41.7
	POL	61	34		PESSEV	10.4 a	**0.9 b**	**0.9 b**	1.1 b	1.0 b
					Efficacy		~~91.3~~ **91.6**	~~91.3~~ **91.0**	89.4	90.4
	POL	84	32		PESSEV	12.1 a	**2.2 d**	**3.6 cd**	6.7 b	3.7 cd
					Efficacy		~~81.8~~ **82.2**	~~70.2~~ **70.6**	44.6	69.4
	LVA	52	27		PESSEV	5.3 a	**0.0 b**	**0.0 b**	3.0 ab	0.1 b
					Efficacy		**100.0**	**100.0**	43.4	98.1
	POL	67	33		PESSEV	7.8 a	**2.4 d**	**3.6 c**	7.1 a	3.2 cd
					Efficacy		~~69.2~~ **69.3**	~~53.8~~ **53.6**	9.0	59.0
Mean efficacy				*6*	*Mean*	*8.9*	~~76.3~~ ***76.4***	~~67.3~~ ***67.2***	*39.9*	*65.5*
					Min	5.3	~~55.6~~ **55.2**	~~40.3~~ **40.5**	9.0	34.7
					Max	12.1	**100.0**	**100.0**	89.4	98.1

At a late assessment date (27-34 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) and applied at 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved mean efficacy 79.2% and 72.8% respectively, across 7 trials. The level of infection observed in the untreated check was 14.0% severity.
Mean efficacy of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha, 58.0%). A statistically significant difference was observed between CA2702 and CA3642 at 1.4 L/ha in 3 out of 7 individual assessments, and at 1.2 L/ha in 1 out of 7 assessments, although clear numerically differences were found in 4 out of 7 assessments, at both rates.
Performance of CA3642 was slightly higher than CA2445 (200 g prothioconazole/ha, 62.4%), a statistical difference was found in one out of seven assessments.

In leaf level 2, the test product CA3642 applied at 1.4 and 1.2 L/ha, achieved mean efficacy 76.3% and 67.3% respectively, across 6 trials.
The level of infection observed in the untreated check was 8.9% severity.
Performance of CA3642 was higher than CA2702 on average (39.9%): this is statistically significant in 4 out of 6 individual assessments at 1.4 L/ha and in 2 out of 6 individual assessments at 1.2 L/ha.
Mean efficacy of CA3642 was equivalent to CA2445 (65.5%) with no statistical difference observed in individual assessments when applied at 1.2 L/ha, while it performed statistically significantly superior to the solo formulation in 1 out of 6 assessments and numerically distinctly better in 4 of 6 trials when applied at 1.4 L/ha.

Table 3.2-21: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials &	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC

				ARM	Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	POL	75	40	 TA	PESSEV Efficacy	7.2 a a	**0.9 c** ~~87.5~~ **88.2** **d**	**1.8 bc** ~~75.0~~ **74.4** **bcd**	3.4 b 52.8 b	1.4 bc 80.6 cd
	LTU	65	38		PESSEV Efficacy	13.3 a	**5.9 b** ~~55.6~~ **56.1**	**5.6 b** ~~57.9~~ **58.0**	7.2 b 45.9	6.7 b 49.6
	POL	84	35		PESSEV Efficacy	10.1 a	**0.8 b** ~~92.1~~ **92.0**	**0.8 b** ~~92.1~~ **92.0**	1.1 b 89.1	1.2 b 88.1
	POL	70	42	 TA	PESSEV Efficacy	5.0 a a	**0.1 c** ~~98.0~~ **99.0** c	**0.2 c** ~~96.0~~ **96.5** c	1.4 b 72.0 b	0.2 c 96.0 c
	POL	74	40		PESSEV Efficacy	7.9 a	**2.0 d** ~~74.7~~ **74.2**	**1.7 d** ~~78.5~~ **78.4**	4.1 b 48.1	2.0 d 74.7
Mean efficacy				5	*Mean* Min Max	*8.7* 5.0 13.3	~~*81.6*~~ ***81.9*** ~~55.6~~ **56.1** ~~98.0~~ **99.0**	***79.9*** ~~57.9~~ **58.0** ~~96.0~~ **96.5**	*61.6* 45.9 89.1	*77.8* 49.6 96.0
LEAF2 very late	POL	75	40	 TA	PESSEV Efficacy	19.2 a a	**2.7 c** **85.9** **cd**	**4.6 c** ~~76.0~~ **76.3** **cd**	8.4 b 56.3 b	3.9 c 79.7 cd
	LTU	65	38		PESSEV Efficacy	28.9 a	**6.8 d** ~~76.5~~ **76.4**	**8.6 d** ~~70.2~~ **70.4**	14.4 b 50.2	11.9 bc 58.8
	POL	84	35		PESSEV Efficacy	13.0 a	**0.8 b** **93.8**	**0.6 b** ~~95.4~~ **95.7**	1.3 b 90.0	0.9 b 93.1
	POL	70	42		PESSEV Efficacy	14.5 a	**1.1 c** ~~92.4~~ **92.5**	**2.4 c** ~~83.4~~ **83.6**	8.0 b 44.8	1.9 c 86.9
	POL	74	40		PESSEV Efficacy	42.9 a	**14.1 c** **67.1**	**15.6 c** **63.6**	28.0 b 34.7	11.9 c 72.3
Mean efficacy				5	*Mean* Min Max	*23.7* 13.0 42.9	~~*83.2*~~ ***83.1*** **67.1** **93.8**	~~*77.8*~~ ***77.9*** **63.6** ~~95.4~~ **95.7**	*55.2* 34.7 90.0	*78.1* 58.8 93.1

At a very late assessment date, leaf **levels 1 and 2** were considered (35-42 DA-B), across five assessments each leaf level, with infection observed in the untreated check from 8.7% to 23.7% severity. Azoxystrobin solo formulation CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) showed a numerically lower control compared to CA3642, on both leaf levels. At leaf 1, statistically significant differences were detected in two (1.2 L/ha) and three (1.4 L/ha) out of five assessments.
At leaf 2, statistically significant differences were detected in four out of five assessments, at both rates.
No statistical difference was observed between CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) and prothioconazole solo formulation CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha), in all assessments at leaf 1, and in 4 out of 5 assessments at leaf 2. In a late assessment on leaf level 2, CA2445 showed a distinct lower control.

TRZAW – SEPTTR – South-East EPPO zone

The results of 7 trials are presented in order to confirm the interest of the mixture for the control of

Zymoseptoria tritici (SEPTTR) under the conditions of the South-East EPPO climatic zone. The trials were carried out in Hungary (2) and Romania (5) between 2019 and 2020. The first application took place at crop stage BBCH 30 - 33 and the second application was done 20 - 36 days later, at BBCH 41 -59.

Table 3.2-22: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Late assessment</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 late	ROU	56	28		PESSEV Efficacy	10.26 a	**0.05 b** ~~99.5~~ **99.6**	**0.06 b** **99.4**	0.20 b 98.1	0.08 b 99.2
Mean efficacy				1		*10.3*	***~~99.5~~ 99.6***	***99.4***	*98.1*	*99.2*
LEAF2 late	ROU	60	32		PESSEV Efficacy	7.31 a	**0.11 b** **98.5**	**0.06 b** **99.2**	0.06 b 99.2	0.05 b 99.3
	ROU	56	28		PESSEV Efficacy	100.00 a	**0.11 c** **99.9**	**0.13 c** **99.9**	0.69 b 99.3	0.14 c 99.9
Mean efficacy				*2*	*Mean* Min Max	*53.7* 7.3 100.0	***99.2*** **98.5** **99.9**	***99.5*** **99.2** **99.9**	*99.2* 99.2 99.3	*99.6* 99.3 99.9

At a late assessment date, 28-32 DA-B, **leaf levels 1 and 2** were considered, after 2 applications. The level of infection observed in the untreated check was 10.3%, and 53.7% severity respectively.

On both leaf levels, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control equivalent to reference solo products CA2702 (200 g azoxystrobin/ha) and CA2445 (200 g prothioconazole/ha). In one out of two assessments on leaf 2, CA3642 effectiveness at both rates was slightly but statistically significantly higher than CA2702.

Table 3.2-23: Efficacy of CA3642 against SEPTTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Very late assessment – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	HUN	65	45		PESSEV Efficacy	33.8 a	**2.8 b** ~~91.7~~ **91.8**	**4.7 b** **86.1 86.0**	2.5 b 92.6	2.3 b 93.2
	HUN	67	40	 TL	PESSEV Efficacy	10.9 a a	**0.9 b** ~~91.7~~ **91.5** **bcd**	**0.8 b** **92.7 92.3** **cd**	1.8 b 83.5 bcd	2.3 b 78.9 bc
Mean efficacy				*2*	*Mean* Min Max	*22.4* 10.9 33.8	***91.7*** ~~91.7~~ **91.5** ~~91.7~~ **91.8**	~~*89.4*~~ ***89.2*** ~~86.1~~ **86.0** ~~92.7~~ **92.3**	*88.0* 83.5 92.6	*86.0* 78.9 93.2
LEAF2 very late	HUN	62	42		PESSEV Efficacy	30.8 a	**0.0 d** **100.0**	**0.0 d** **100.0**	0.4 d 98.7	5.4 c 82.5
	HUN	65	45		PESSEV Efficacy	56.5 a	**10.5 c** ~~81.4~~ **81.5**	**18.0 b** **68.1**	10.3 c 81.8	9.1 c 83.9
	HUN	60	40		PESSEV Efficacy	22.6 a	**2.8 f** ~~87.6~~ **87.5**	**3.7 ef** ~~83.6~~ **83.5**	6.9 c 69.5	6.2 cd 72.6
	HUN	79	43	 TL	PESSEV Efficacy	18.1 a a	**3.8 b** ~~79.0~~ **78.9** **b**	**3.4 b** ~~81.2~~ **81.1** **b**	7.6 b 58.0 b	3.7 b 79.6 b
	HUN	67	40	 TL	PESSEV Efficacy	21.3 a a	**2.7 c** ~~87.3~~ **87.5** **cd**	**2.4 c** ~~88.7~~ **88.9** **cd**	3.9 c 81.7 cd	3.9 c 81.7 cd
Mean efficacy				*5*	*Mean* Min Max	*29.9* 18.1 56.5	***87.1*** ~~79.0~~ **78.9** **100.0**	***84.3*** **68.1** **100.0**	*77.9* 58.0 98.7	*80.0* 72.6 83.9

At a very late date (40-45 DA-B), no statistical difference was observed on **leaf level 1** between CA3642 applied at 1.2 or 1.4 L/ha (180 or 210 g azoxystrobin/ha and 180 or 210 g prothioconazole/ha) and both reference solo formulations CA2702 and CA2445 applied at 0.8 L/ha (200 g azoxystrobin/ha and 200 g prothioconazole/ha respectively), in all two assessments. The level of infection observed in the untreated check was 22.4% severity.

On **leaf level 2**, CA3642 applied at both rates achieved numerically slightly better control compared to CA2702 and CA2445, across five assessments. The level of infection observed in the untreated check was 29.9% severity.
CA3642 at 1.4 L/ha achieved significantly higher efficacy compared to the solo azoxystrobin formulation CA2702 in 1 assessment and compared to the solo prothioconazole formulation CA2445 in 2 assessments.

Comments of zRMS:

30 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved effectiveness at a similar level compared to prothioconazole used solo. Significantly inferior results have been noted for azoxystrobin used solo in some trials. The moderate level of control was observed after 2 applications. The justification of the mixture was visible on L1 in the early assessment. CA3642 achieved results of 64-71% vs 49% for azoxystrobin solo and 56% for prothioconazole. No results after 1 application were available. In the North-East EPPO zone, CA3642 presented comparable effectiveness to azoxystrobin and protioconazole solo. Significant differences were observed in some trials. In the early assessment, the test product had the mean efficacy of 81-83% vs 68% for AZX and 79% for PTZ on L2 and 80-86% vs 72% and 69% on L4. In the late assessment, CA3642 presented results of 73-79% whilst 58% for AZX and 62% for PTZ. In the South-East EPPO zone, no significant differences between active substances used solo and CA3642 were observed after 2 applications. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of SEPTTR in winter wheat.

Winter Wheat (TRZAW) – Powdery mildew (ERYSGR/T – *Blumeria graminis*)

TRZAW – ERYSGR/T – Maritime EPPO zone

The results of 9 trials are presented in order to confirm the interest of the mixture for the control of *Blumeria graminis* (ERYSGR/T) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in France (3), Germany (4) and Great Britain (2) in 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 17 - 37 days later, at BBCH 39 – 57.

Table 3.2-24: Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF2 early	~~FRA~~ ~~-~~	~~43~~ ~~-~~	~~16~~ ~~-~~	~~-~~ ~~-~~	~~PESSEV Efficacy~~	~~5.5 b~~	~~**2.7 cd** **50.9**~~	~~**3.3 cd** **40.0**~~	~~7.1 a 0.0~~	~~2.1 d 61.8~~
	GBR	49	15		PESSEV Efficacy	5.1 b	**0.0 c** **100.0**	**0.0 c** **100.0**	5.6 a 0.0	0.0 c 100.0

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
	FRA	43	13		PESSEV Efficacy	6.4 b	**1.6 cd** **75.0**	**1.9 cd** ~~70.3~~ **70.1**	8.0 a 0.0	1.6 cd 75.0
	FRA	40	13	TA	PESSEV Efficacy	4.1 a a	**0.4 de** ~~90.2~~ **89.4** **e**	**0.5 de** ~~87.8~~ **87.6** **e**	3.6 ab 12.2 ab	0.5 de 87.8 e
	DEU	53	16		PESSEV Efficacy	11.1 a	**0.1 b** **99.1**	**0.0 b** **100.0**	0.0 b 100.0	0.1 b 99.1
Mean efficacy				~~5~~ *4*	*Mean* Min Max	~~6.4~~ *6.7* 4.1 11.1	~~83.1~~ ***91.1*** ~~50.9~~ **75.0** **100.0**	~~79.6~~ ***89.4*** ~~40.0~~ **70.1** **100.0**	*22.4* 0.0 100.0	*84.7* 61.8 100.0
LEAF3 early	GBR	49	15	TA	PESSEV Efficacy	13.3 a a	**1.2 d** ~~91.0~~ **90.7** **d**	**1.5 cd** ~~88.7~~ **88.6** **d**	11.6 b 12.8 b	1.9 cd 85.7 d
	FRA	40	13		PESSEV Efficacy	4.2 a	**0.6 c** ~~85.7~~ **86.9**	**0.6 c** ~~85.7~~ **84.8**	3.7 ab 11.9	0.5 c 88.1
	DEU	49	14		PESSEV Efficacy	15.1 a	**0.0 c** **100.0**	**0.2 c** **98.7**	2.1 b 86.1	2.0 b 86.8
	DEU	53	16		PESSEV Efficacy	14.1 a	**0.2 b** ~~98.6~~ **98.9**	**0.2 b** ~~98.6~~ **98.8**	0.2 b 98.6	0.1 b 99.3
Mean efficacy				4	*Mean* Min Max	*11.7* 4.2 15.1	~~93.8~~ ***94.1*** ~~85.7~~ **86.9** **100.0**	~~92.9~~ ***92.7*** ~~85.7~~ **84.8** **98.7**	*52.3* 11.9 98.6	*90.0* 85.7 99.3
LEAF4 early	GBR	35	15	TL	PESSEV Efficacy	33.4 a a	**6.6 bc** **80.2** **c**	**4.8 bc** ~~85.6~~ **85.5** **c**	18.2 b 45.5 ab	3.0 bc 91.0 c
	DEU	43	15	TA	PESSEV Efficacy	10.1 a a	**1.5 f** ~~85.1~~ **85.7** **f**	**1.8 ef** ~~82.2~~ **82.6** **ef**	2.2 de 78.2 de	3.1 c 69.3 c
	DEU	49	14		PESSEV Efficacy	25.8 a	**0.1 e** ~~99.6~~ **99.7**	**1.0 cde** ~~96.1~~ **96.0**	2.5 bcd 90.3	3.3 b 87.2
	DEU	31	14	TL	PESSEV Efficacy	18.6 a a	**0.0 d** **100.0** **h**	**0.3 d** ~~98.4~~ **98.3** **fgh**	4.7 c 74.7 c	0.8 d 95.7 f
Mean efficacy				4	*Mean* Min Max	*22.0* 10.1 33.4	~~91.3~~ ***91.4*** **80.2** **100.0**	***90.6*** ~~82.2~~ **82.6** ~~98.4~~ **98.3**	*72.2* 45.5 90.3	*85.8* 69.3 95.7

At assessment date ‘’early’’ (13-16 DA-B), in **leaf level 2**, when considering the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) reached 83.1 % and 79.6 % efficacy respectively. The level of infection observed in the untreated check was 6.4 % severity.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was higher than CA2702 (200 g azoxystrobin/ha) on average and this is statistically significant in 4 out of 5 individual assessments.

Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2445 (200 g prothioconazole/ha) on average with no statistically significant differences observed in the individual assessments.

In **leaf level 3**, when considering the mean efficacy across 4 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 93.8 % and 92.9 % efficacy respectively. The level of infection observed in the untreated check was 11.7 % severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant in 3 out of 4 individual assessments for both 1.4 and 1.2 L/ha dose rate.
Performance of CA3642 was equivalent to CA2445 on average and no statistically significant difference was detected in 3 out of 4 individual assessments. In one assessment, CA3642 reached significantly higher efficacy than CA2445.

In **leaf level 4**, when considering the mean efficacy across 4 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 91.5 % and 90.8 % efficacy respectively. The level of infection observed in the untreated check was 22.0 % severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant in 3 out of 4 individual assessments for 1.4 dose rate and in 1 out of 4 individual assessments 1.2 L/ha dose rate.
Performance of CA3642 was higher compared to CA2445 on average and statistically significant difference was detected in 3 out of 4 individual assessments for both tested dose rates of the test product.

Table 3.2-25: Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 late	DEU	60	25		PESSEV Efficacy	4.1 a	**0.2 c** ~~95.1~~ **94.5**	**0.6 c** ~~85.4~~ **85.8**	2.9 b 29.3	0.5 c 87.8
Mean efficacy				*1*	*Mean*	*4.1*	*~~95.1~~ **94.5***	*~~85.4~~ **85.8***	*29.3*	*87.8*
LEAF2 late	~~FRA~~ -	~~57~~ -	~~30~~ -	- -	~~PESSEV Efficacy~~	~~4.4 bc~~	~~**3.2 bcd**~~ ~~**27.3**~~	~~**3.1 bcd**~~ ~~**29.5**~~	~~8.9 a~~ ~~0.0~~	~~2.3 cd~~ ~~47.7~~
	DEU	45	28	TA	PESSEV Efficacy	15.7 a a	**0.9 d** ~~94.3~~ **94.1** **ef**	**2.9 cd** ~~81.5~~ **81.9** **e**	13.5 a 14.0 b	2.5 cd 84.1 e
	DEU	60	25		PESSEV Efficacy	11.4 a	**1.3 de** ~~88.6~~ **88.7**	**2.0 de** ~~82.5~~ **82.4**	4.1 bc 64.0	4.3 b 62.3
Mean efficacy				*~~3~~ 2*	*Mean* Min Max	*~~10.5~~* *13.6* ~~4.4~~ 11.4 15.7	*~~70.0~~ **91.4*** ~~27.3~~ **88.7** ~~94.3~~ **94.1**	*~~64.5~~ **82.2*** ~~29.5~~ **81.9** ~~82.5~~ **82.4**	*26.0* 0.0 64.0	*64.7* 47.7 84.1
LEAF3 late	DEU	45	28		PESSEV Efficacy-	16.7 a	**0.2 c** ~~98.8~~ **98.9**	**0.8 c** ~~95.2~~ **95.5**	7.1 b 57.5	0.0 c 100.0

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
					cy					
Mean efficacy				*1*		*16.7*	~~*98.8*~~ ***98.9***	~~*95.2*~~ ***95.5***	*57.5*	*100.0*

At assessment date ''late'' (25-30 DA-B), in **leaf level 1**, in one trial, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved 95.1 % and 85.4 % efficacy respectively. The level of infection observed in the untreated check was 4.1 % severity.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was higher than CA2702 (200 g azoxystrobin/ha) and this is statistically significant.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2445 (200 g prothioconazole/ha) with no statistically significant difference.

In **leaf level 2**, when considering the mean efficacy across 3 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 70 % and 64.5 % efficacy respectively. The level of infection observed in the untreated check was 10.5 % severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant in all individual trials.
Performance of CA3642 was comparable to CA2445 on average. No statistically significant difference was detected in 2 out of 3 individual assessments. In one assessment, CA3642 reached significantly higher efficacy than CA2445.

In **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved 98.8 % and 95.2 % efficacy respectively. The level of infection observed in the untreated check was 16.7 % severity.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was higher than CA2702 (200 g azoxystrobin/ha) and this is statistically significant.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2445 (200 g prothioconazole/ha) with no statistically significant difference.

Table 3.2-26: Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	DEU	81	46		PESSEV Efficacy	5.2 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0	0.0 b 100.0
	DEU	75	38		PESSEV Efficacy	11.5 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.1 b 99.1	0.0 b 100.0
Mean efficacy				2	*Mean* Min	*8.4* 5.2	***100.0*** **100.0**	***100.0*** **100.0**	*99.6* 99.1	*100.0* 100.0

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
					Max	11.5	**100.0**	**100.0**	100.0	100.0
LEAF2 very late	DEU	72	37		PESSEV Efficacy	5.4 a	**0.2 b** ~~96.3~~ **96.8**	**0.3 b** ~~94.4~~ **94.9**	0.9 b 83.3	0.6 b 88.9
	DEU	59	42	TL	PESSEV Efficacy	8.9 a a	**0.4 c** ~~95.5~~ **95.4** **e**	**1.4 c** **84.3** **cde**	4.3 b 51.7 b	2.1 c 76.4 c
Mean efficacy				2	*Mean* Min Max	*7.2* 5.4 8.9	~~95.9~~ ***96.1*** ~~95.5~~ **95.4** ~~96.3~~ **96.8**	~~89.4~~ ***89.6*** **84.3** ~~94.4~~ **94.9**	*67.5* 51.7 83.3	*82.6* 76.4 88.9

At assessment date ''very late'' (37-46 DA-B), in **leaf level 1**, when considering the mean efficacy across 2 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved 100 % efficacy. The level of infection observed in the untreated check was 8.4 % severity.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2702 (200 g azoxystrobin/ha) on average. No statistical difference were observed in the individual assessments.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2445 (200 g prothioconazole/ha) on average. No statistical difference were observed in the individual assessments.

In **leaf level 2**, when considering the mean efficacy across 2 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 95.9 % and 89.4 % efficacy respectively. The level of infection observed in the untreated check was 7.2 % severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant in one out of two individual assessments.
Performance of CA3642 was distinctly superior to CA2445 on average. In one individual assessment performance of CA3642 applied at the higher dose rate 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) was statistically higher compared to CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha).

TRZAW – ERYSGR/T – North-East EPPO zone

The results of 9 trials are presented in order to confirm the interest of the mixture for the control of *Blumeria graminis* (ERYSGR/T) under the conditions of the North-East EPPO climatic zone. The trials were carried out in Latvia (1), Lithuania (4) and Poland (4) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 16 - 49 days later, at BBCH 39 – 61.

Table 3.2-27Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Early assessment – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF2 early	POL	50	15		PESSEV Efficacy	8.4 a	**0.7 c** ~~91.7~~ **92.1**	**1.3 c** ~~84.5~~ **84.1**	3.0 b 64.3	0.7 c 91.7
	POL	41	13		PESSEV Efficacy	7.3 a	**0.0 c** **100.0**	**0.0 c** **100.0**	2.4 b 67.1	0.0 c 100.0
	LTU	30	14		PESSEV Efficacy	10.6 a	**2.3 cd** ~~78.3~~ **77.9**	**3.4 cd** ~~67.9~~ **68.3**	8.1 b 23.6	2.3 cd 78.3
	LTU	31	15		PESSEV Efficacy	7.5 a	**0.1 c** **98.7**	**1.0 c** ~~86.7~~ **86.9**	3.4 b 54.7	1.0 c 86.7
	LTU	31	15		PESSEV Efficacy	8.3 a	**2.6 b** **68.7**	**3.0 b** **63.9**	7.5 a 9.6	4.2 b 49.4
Mean efficacy				*5*	*Mean* Min Max	*8.4* 7.3 10.6	***87.5*** **68.7** **100.0**	***80.6*** **63.9** **100.0**	*43.9* 9.6 67.1	*81.2* 49.4 100.0
LEAF3 early	POL	50	15	TL	PESSEV Efficacy	23.8 a a	**0.7 c** ~~97.1~~ **97.0** **d**	**1.1 bc** **95.4** **d**	4.8 b 79.8 b	1.1 bc 95.4 d
	POL	64	15		PESSEV Efficacy	6.5 a	**0.3 b** ~~95.4~~ **95.2**	**0.4 b** ~~93.8~~ **93.3**	0.6 b 90.8	0.8 b 87.7
	POL	41	13	TA	PESSEV Efficacy	17.2 a a	**1.7 c** ~~90.1~~ **90.3** **c**	**3.2 c** ~~81.4~~ **81.2** **c**	7.5 b 56.4 b	2.7 c 84.3 c
	POL	49	15		PESSEV Efficacy	30.9 a	**2.1 b** ~~93.2~~ **93.3**	**2.9 b** **90.6**	8.6 b 72.2	1.4 b 95.5
	LTU	39	14		PESSEV Efficacy	5.1 ab	**2.3 c** ~~54.9~~ **55.5**	**3.9 bc** ~~23.5~~ **23.1**	7.0 a 0.0	2.5 c 51.0
	LTU	30	14	TA	PESSEV Efficacy	10.6 a a	**3.5 de** ~~67.0~~ **67.2** **e**	**3.9 de** ~~63.2~~ **63.1** **de**	8.4 b 20.8 b	3.8 de 64.2 de
	LTU	31	15		PESSEV Efficacy	11.5 a	**2.2 b** ~~80.9~~ **80.7**	**3.6 b** ~~68.7~~ **69.1**	4.7 b 59.1	3.1 b 73.0
Mean efficacy				*7*	*Mean* Min Max	*15.1* 5.1 30.9	~~*82.6*~~ ***82.7*** ~~54.9~~ **55.5** ~~97.1~~ **97.0**	~~*73.8*~~ ***73.7*** ~~23.5~~ **23.1** **95.4**	*54.1* 0.0 90.8	*78.7* 51.0 95.5
LEAF4 early	POL	64	15	TA	PESSEV Efficacy	4.8 a a	**0.9 b** ~~81.3~~ **81.8** **b**	**0.4 b** ~~91.7~~ **92.2** **b**	1.1 b 77.1 b	0.3 b 93.8 b
Mean efficacy				*1*		*4.8*	~~*81.3*~~ ***81.8***	~~*91.7*~~ ***92.2***	*77.1*	*93.8*

At an early assessment date, **leaf levels 2 and 3** were considered (13-15 DA-B), after two applications, with a level of infection observed in the untreated check of 8.4% and 15.1%, respectively.

Mean efficacy of CA2702 over all assessed leaf levels and all valid assessment dates ranged from 43.9% to 54.1%.
In comparison, CA3642 achieved 82.6-87.5% efficacy at 1.4 L/ha and 73.8-80.6% efficacy at 1.2 L/ha.
At all assessments CA3642 achieved higher efficacy compared to CA2702.
Statistically significant differences were observed between CA2702 (200 g azoxystrobin/ha) and CA3642 at both rates (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) in all five assessments at leaf 2.

In four out of seven assessments at leaf 3, CA2702 performed statistically significantly inferior compared to CA3642 applied at 1.4 L/ha dose rate in four out of seven assessments at leaf 3 and in three out of seven assessments for 1.2 L/ha dose rate.

Mean efficacy of CA2445 over all assessed leaf levels and all valid assessment dates ranged from 78.7% to 81.2%.
No statistical difference was observed between CA2445 (200 g prothioconazole/ha) and CA3642 at both rates (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) in all individual assessments.

Table 3.2-28: Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	POL	70	42	TIO	PESSEV Efficacy	6.4 a a	**0.0 c** **100.0** c	**0.0 c** **100.0** c	2.1 b 67.2 b	0.0 c 100.0 c
Mean efficacy				*1*		*6.4*	***100.0***	***100.0***	*67.2*	*100.0*
LEAF2 very late	POL	70	42		PESSEV Efficacy	15.6 a	**0.0 c** **100.0**	**0.0 c** **100.0**	5.5 b 64.7	0.0 c 100.0
Mean efficacy				*1*		*15.6*	***100.0***	***100.0***	*64.7*	*100.0*

At assessment date "very late" (42 DA-B), in both considered leaf levels 1 and 2, the test product CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) and the reference prothioconazole formulation CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha) reached 100% effectiveness.
Azoxystrobin solo formulation CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) showed a significantly lower control on both leaf levels (67.2% and 64.7%).

TRZAW – ERYSGR/T – South-East EPPO zone

The results of 7 trials are presented in order to confirm the interest of the mixture for the control of *Blumeria graminis* (ERYSGR/T) under the conditions of the South-East EPPO climatic zone. The trials were carried out in Hungary (2), Slovakia (2) and Romania (3) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 32 and the second application was done 15 - 28 days later, at BBCH 41 - 55.

Table 3.2-29: Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
LEAF2 early	HUN	35	15		PESSEV	9.81 a	**0.00 c**	**0.00 c**	0.66 b	0.00 c
					Efficacy		**100.0**	**100.0**	93.3	100.0
	ROU	30	15		PESSEV	5.19 a	**0.00 c**	**0.00 c**	0.65 b	0.00 c
					Efficacy		**100.0**	**100.0**	87.5	100.0
	ROU	30	15		PESSEV	5.20 a	**0.00 c**	**0.00 c**	0.00 c	0.00 c
					Efficacy		**100.0**	**100.0**	100.0	100.0
	SVK	36	15		PESSEV	5.80 a	**0.43 g**	**0.50 g**	1.23 d	1.11 de
					Efficacy		~~92.6~~ **92.7**	**91.4**	78.8	80.9
	SVK	36	15		PESSEV	7.50 a	**0.54 g**	**0.65 g**	1.38 d	1.28 de
					Efficacy		**92.8**	**91.3**	81.6	82.9
Mean efficacy				5	*Mean*	*6.7*	***97.1***	***96.5***	*88.2*	*92.8*
					Min	5.2	~~92.6~~ **92.7**	**91.3**	78.8	80.9
					Max	9.8	**100.0**	**100.0**	100.0	100.0
LEAF3 early	HUN	35	15		PESSEV	12.35 a	**0.00 b**	**0.00 b**	2.56 b	0.00 b
					Efficacy		**100.0**	**100.0**	79.3	100.0
	HUN	35	15		PESSEV	30.63 a	**0.00 c**	**0.00 c**	5.65 b	0.00 c
					Efficacy		**100.0**	**100.0**	81.6	100.0
	ROU	30	15		PESSEV	13.51 a	**1.41 e**	**2.05 cd**	3.20 b	1.25 e
					Efficacy		~~89.6~~ **89.5**	**84.8**	76.3	90.7
	ROU	30	15		PESSEV	12.94 a	**1.15 d**	**1.36 cd**	2.45 b	1.08 d
					Efficacy		**91.1**	**89.5**	81.1	91.7
	SVK	36	15		PESSEV	13.04 a	**1.84 g**	**2.24 f**	3.36 d	3.16 de
					Efficacy		**85.9**	**82.8**	74.2	75.8
	SVK	36	15		PESSEV	16.74 a	**2.48 g**	**2.93 f**	4.49 d	4.11 e
					Efficacy		**85.2**	**82.5**	73.2	75.4
Mean efficacy				6	*Mean*	*16.5*	***92.0***	***89.9***	*77.6*	*88.9*
					Min	12.4	**85.2**	**82.5**	73.2	75.4
					Max	30.6	**100.0**	**100.0**	81.6	100.0

At an early assessment date, 15 DA-B, when considering **leaf 2**, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached an excellent level of control (respectively 96.5% and 97.1 %), across 5 assessments.
CA2702 (200 g azoxystrobin/ha) performed inferior compared to CA3642 applied at both dose rates: 88.2%. Efficacy of CA3642 was statistically higher than CA2702 in 4 out of 5 assessments, while both mixture and solo formulations showed 100% effectiveness in 1 out of 5 assessments.
CA3642 applied at both rates achieved comparable or slightly better control compared to CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha): 92.8 %. Efficacy of CA3642 was statistically higher than CA2445 in 2 out of 5 assessments, while both mixture and solo formulations showed 100% effectiveness in other 3 out of 5 assessments.
The level of infection observed in the untreated check was 6.7 % severity.

When considering **leaf 3**, on an average of 6 assessments, CA3642 applied at both rates reached a similar level of control (respectively 89.9% and 92.0 %), despite the higher level of infection observed in the untreated check (16.5 % severity).
Performance of CA3642 applied at both rates was statistically higher than CA2702 in 5 out of 6 assessments, and numerically higher in all individual assessments.
Performance of CA3642 was comparable or slightly better than CA2445 on average, with statistically significant difference observed in 3 out of 6 assessments at 1.2 L/ha (with one assessment, which demonstrated superior performance of the solo formulation), and in 2 out of 6 assessments at 1.4 L/ha.

Table 3.2-30: Efficacy of CA3642 against ERYSGR/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	HUN	65	45		PESSEV	12.0 a	**0.0 b**	**0.0 b**	3.8 b	0.0 b
					Efficacy		**100.0**	**100.0**	68.3	100.0
	ROU	58	43		PESSEV	8.8 a	**0.7 f**	**0.9 e**	2.7 b	0.6 f
					Efficacy		~~92.0~~ **92.4**	~~89.8~~ **89.6**	69.3	93.2
	ROU	58	43		PESSEV	7.2 a	**0.1 d**	**0.2 d**	1.2 b	0.1 d
					Efficacy		~~98.6~~ **98.3**	~~97.2~~ **97.4**	83.3	98.6
	SVK	57	36		PESSEV	5.1 a	**0.4 f**	**0.4 f**	1.0 cd	0.9 d
					Efficacy		~~92.2~~ **92.9**	~~92.2~~ **92.0**	80.4	82.4
	SVK	57	36		PESSEV	6.8 a	**0.6 f**	**0.7 f**	1.6 c	1.4 d
					Efficacy		~~91.2~~ **91.5**	~~89.7~~ **90.0**	76.5	79.4
Mean efficacy				5	*Mean*	*8.0*	~~94.8~~ ***95.0***	***93.8***	*75.6*	*90.7*
					Min	5.1	~~91.2~~ **91.5**	~~89.7~~ **89.6**	68.3	79.4
					Max	12.0	**100.0**	**100.0**	83.3	100.0
LEAF2 very late	HUN	62	42		PESSEV	11.1 a	**0.0 c**	**0.0 c**	2.4 b	0.0 c
					Efficacy		**100.0**	**100.0**	78.4	100.0
	HUN	65	45		PESSEV	26.3 a	**0.0 c**	**0.0 c**	10.8 b	0.0 c
					Efficacy		**100.0**	**100.0**	58.9	100.0
	ROU	58	43		PESSEV	16.4 a	**2.4 e**	**3.0 d**	4.5 b	2.3 e
					Efficacy		~~85.4~~ **85.6**	~~81.7~~ **82.0**	72.6	86.0
	ROU	58	43		PESSEV	15.6 a	**2.3 e**	**2.5 e**	4.6 b	2.3 e
					Efficacy		**85.3**	~~84.0~~ **83.9**	70.5	85.3
	SVK	57	36		PESSEV	11.2 a	**1.3 f**	**1.5 f**	2.8 d	2.8 d
					Efficacy		~~88.4~~ **88.3**	~~86.6~~ **86.5**	75.0	75.0
	SVK	57	36		PESSEV	13.4 a	**1.7 g**	**2.0 g**	3.7 d	3.4 e
					Efficacy		**87.3**	~~85.1~~ **85.3**	72.4	74.6
Mean efficacy				*6*	*Mean*	*15.7*	***91.1***	***89.6***	*71.3*	*86.8*
					Min	11.1	**85.3**	~~81.7~~ **82.0**	58.9	74.6
					Max	26.3	**100.0**	**100.0**	78.4	100.0

At assessment date ''very late'' (36-45 DA-B), in **leaf level 1**, when considering the mean efficacy across 5 trials, the test product CA3642 applied at 1.2 L/ha and 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) achieved 93.8 % and 94.8 % efficacy respectively. The level of infection observed in the untreated check was 8.0 % severity.
Performance of CA3642 at both rates was higher than CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) on average: 75.6%. Statistical significant differences were observed in four individual assessments.
Performance of CA3642 at both rates was comparable to CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha) on average - 90.7% - but statistically higher in 2 out of 5 individual assessments. In one assessment, the solo formulation demonstrated statistically significantly superior efficacy compared to 1.2 L/ha of CA3642.

In **leaf level 2**, when considering the mean efficacy across 6 trials, the test product CA3642 applied at 1.2 and 1.4 L/ha achieved 89.6 % and 91.1% respectively. The level of infection observed in the untreated check was 15.7 % severity.
Performance of CA3642 at both rates was higher than CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) on average: 71.3%. Statistical significant differences were observed in all individual assessments.
Performance of CA3642 at both rates was comparable to CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha) on average – 86.8% **-** but statistically higher in 2 out of 6 individual assessments. Only in one assessment, performance of CA2445 was significantly superior compared to performance of CA3642 at 1.2 L/ha.

Comments of zRMS:

25 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved effectiveness on similar effect compared to prothioconazole used solo. Significant inferior results have been noted for azoxystrobin used solo in some trials. The justification of mixture was visible in late and very late assessments. CA3642 achieved effectiveness of 82-91% whilst 26% for azoxystrobin solo and 65% for prothioconazole solo. No results after 1 application were available. In the North-East and South-East EPPO zones, CA3642 and the products containing prothioconazole solo presented comparable effectiveness. CA2702 had significant inferior results. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of ERYSGR/T in winter wheat.

Winter Wheat (TRZAW) – Brown rust (PUCCRE/T – *Puccinia recondita*)

TRZAW – PUCCRE/T – Maritime EPPO zone

The results of 7 trials are presented in order to confirm the interest of the mixture for the control of *Puccinia recondita* (PUCCRE/T) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in France (4), Germany (2) and Great Britain (1) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 37 and the second application was done 15 - 35 days later, at BBCH 39 – 57.

Table 3.2-31: Efficacy of CA3642 against PUCCRE/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Early assessment – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF2 early	FRA	43	16	-	PESSEV	8.9 a	0.0 b	0.1 b	0.1 b	0.2 b

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
	-	-		-	Efficacy		100.0	98.9	98.9	97.8
Mean efficacy				*1*	-	*8.9*	*100.0*	*98.9*	*98.9*	*97.8*
LEAF3 early	FRA -	43	16 -	- -	PESSEV Efficacy	7.8 a	0.4 d 94.9	0.2 d 97.4	1.0 cd 87.2	0.8 cd 89.7
Mean efficacy				*1*	-	*7.8*	*94.9*	*97.4*	*87.2*	*89.7*

At assessment date ''early'' (16 DA-B), in **leaf level 2**, in 1 trial, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 100 % and 89.9 % efficacy respectively. The level of infection observed in the untreated check was 8.9 % severity.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2702 (200 g azoxystrobin/ha) with no statistical difference.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) with no statistical difference.

In **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 94.9 % and 97.4 % efficacy respectively. The level of infection observed in the untreated check was 7.8 % severity.
Performance of CA3642 was superior to CA2702 (200 g azoxystrobin/ha) although no statistical difference was detected.
Performance of CA3642 was also slightly superior to CA2445 (200 g prothioconazole/ha) with no statistical difference.

Table 3.2-32: Efficacy of CA3642 against PUCCRE/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Late assessment – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF1 late	FRA	62	32		PESSEV Efficacy	11.7 a	**0.5 b** **95.7**	**0.3 b** **97.4**	0.4 b 96.6	1.4 b 88.0
	FRA -	57	30 -	- -	PESSEV Efficacy	26.2 a	0.0 b 100.0	0.1 b 99.6	0.0 b 100.0	6.0 b 77.1
Mean efficacy				*2* - -	*Mean* *Min* *Max*	*19.0* *11.7* *26.2*	*97.9* *95.7* *100.0*	*98.5* *97.4* *99.6*	*98.3* *96.6* *100.0*	*82.6* *77.1* *88.0*
LEAF2 late - -	FRA	57 -	30	- -	PESSEV Efficacy	11.9 a	0.0 b 100.0	0.0 b 100.0	0.1 b 99.2	3.2 b 73.1
Mean efficacy				*1*	-	*11.9*	*100.0*	*100.0*	*99.2*	*73.1*

At assessment date ''late'' (30-32 DA-B), in **leaf level 1**, when considering the mean efficacy across 2 1 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 97.9 95.7 % and 98.5 97.4 % efficacy respectively. The level of infection observed in the untreated check was 19 11.7 % severity.

Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2702 (200 g azoxystrobin/ha) on average with no statistical difference observed in the individual assessments.
Performance of CA3642 was numerically higher than CA2445 (200 g prothioconazole/ha) on average although no statistical difference was observed in the individual assessments.

~~In **leaf level 2**, in one trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 100 % efficacy for both application rates. The level of infection observed in the untreated check was 11.9 % severity.~~
~~Performance of CA3642 was equivalent to CA2702 (200 g azoxystrobin/ha) with no statistical difference.~~
~~Performance of CA3642 was numerically distinctly higher than CA2445 (200 g prothioconazole/ha), no statistical difference was observed.~~

Table 3.2-33: Efficacy of CA3642 against PUCCRE/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	FRA	62	44		PESSEV Efficacy	7.7 a	**0.3 b** ~~96.1~~ **96.3**	**0.0 b** ~~100.0~~ **99.8**	0.1 b 98.7	0.9 b 88.3
	GBR	56	41		PESSEV Efficacy	25.4 a	**9.9 bc** ~~61.0~~ **61.2**	**9.4 bc** ~~63.0~~ **63.1**	6.8 c 73.2	16.3 b 35.8
	DEU	62	42		PESSEV Efficacy	14.4 a	**0.0 b 100.0**	**0.0 b 100.0**	0.0 b 100.0	3.3 b 77.1
	FRA	84	53	TA	PESSEV Efficacy	10.7 a a	**0.7 c** ~~93.5~~ **94.0** d	**0.7 c 93.5** d	1.2 c 88.8 d	6.6 b 38.3 b
	DEU	81	46		PESSEV Efficacy	19.8 a	**4.9 f** ~~75.3~~ **75.4**	**7.0 ef** ~~64.6~~ **64.7**	4.7 f 76.3	11.7 bc 40.9
Mean efficacy				*5*	*Mean* Min Max	*15.6* 7.7 25.4	~~85.2~~ ***85.4*** ~~61.0~~ **61.2** **100.0**	***84.2*** ~~63.0~~ **63.1** **100.0**	*87.4* 73.2 100.0	*56.1* 35.8 88.3
LEAF2 very late	GBR	56	41		PESSEV Efficacy	25.8 a	**10.8 d 58.1**	**12.2 cd** ~~52.7~~ **52.9**	10.0 d 61.2	18.2 bc 29.5
	DEU	62	42	TL	PESSEV Efficacy	5.8 a a	**0.0 b 100.0** c	**0.0 b 100.0** c	0.0 b 100.0 c	0.9 b 84.5 b
	DEU	72	37		PESSEV Efficacy	5.9 a	**0.3 cd** ~~94.9~~ **95.6**	**0.8 cd** ~~86.4~~ **85.9**	0.2 d 96.6	1.5 bcd 74.6
Mean efficacy				*3*	*Mean* Min Max	*12.5* 5.8 25.8	~~84.4~~ ***84.6*** **58.1** **100.0**	~~79.7~~ ***79.6*** ~~52.7~~ **52.9** **100.0**	*86.0* 61.2 100.0	*62.8* 29.5 84.5

At assessment date ''very late'' (37-53 DA-B), in **leaf level 1**, when considering the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) achieved 85.2 % and 84.2 % efficacy respectively. The level of infection observed in the untreated check was 15.6 % severity.
Performance of CA3642 (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) was equivalent to CA2702 (200 g azoxystrobin/ha) on average with no statistical difference observed in the individual assessments.
Performance of CA3642 was numerically higher than CA2445 (200 g prothioconazole/ha) on average and that was statistically significant for two individual assessments.

In **leaf level 2**, when considering the mean efficacy across 3 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 84.4 % and 79.7% efficacy respectively. The level of infection observed in the untreated check was 12.5 % severity.
Performance of CA3642 was comparable to CA2702 with no statistical difference observed in the individual assessments.
Performance of CA3642 was numerically higher than CA2445 on average. In two individual assessments, performance of CA3642 applied at the higher dose rate of 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) and in one assessment applied at the rate of 1.2 L/ha was significantly higher compared to CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha).

TRZAW – PUCCRE/T – North-East EPPO zone

The results of 1 trial are presented in order to confirm the interest of the mixture for the control of *Puccinia recondita* (PUCCRE/T) under the conditions of the North-East EPPO climatic zone. The trial was carried out in Poland (1) in 2020. The first application took place at crop stage BBCH 30 and the second application was done 49 days later, at BBCH 57.

Table 3.2-34: Efficacy of CA3642 against PUCCRE/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF1 very late	POL	84	35		PESSEV Efficacy	8.6 a	**0.9 b** ~~89,5~~ **89.1**	**0.5 b** **94,2**	0.6 b 93,0	0.9 b 89,5
Mean efficacy				*1*		*8,6*	~~*89,5*~~ ***89.1***	***94,2***	*93,0*	*89,5*
Leaf 2 very late	POL	84	35		PESSEV Efficacy	5.9 a	**0.6 b** ~~89,8~~ **90.4**	**0.4 b** ~~93,2~~ **93.6**	0.4 b 93,2	0.7 b 88,1
Mean efficacy				*1*		*5,9*	~~*89,8*~~ ***90.4***	~~*93,2*~~ ***93.6***	*93,2*	*88,1*

At assessment date "very late" (35 DA-B), in both considered leaf levels 1 and 2, the test product CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control equivalent to solo formulation products applied at 0.8 L/ha CA2702 (200 g azoxystrobin/ha) and CA2445 (200 g prothioconazole/ha). No statistical difference was observed in all assessments.
The level of infection observed in the untreated check was 8.6% severity at leaf 1 and 5.9 % at leaf 2.

TRZAW – PUCCRE/T – South-East EPPO zone

The results of 1 trial are presented in order to confirm the interest of the mixture for the control of *Puccinia recondita* (PUCCRE/T) under the conditions of the South-East EPPO climatic zone. The trial was carried out in Romania (1) in 2020. The first application took place at crop stage BBCH 32 and the second application was done 15 days later, at BBCH 55.

Table 3.2-35: Efficacy of CA3642 against PUCCRE/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF2 early	ROU	30	15		PESSEV	6.0 a	**0.0 c**	**0.0 c**	0.5 b	0.0 c
					Efficacy		**100,0**	**100,0**	91,7	100,0
Mean efficacy				1		*6,0*	***100,0***	***100,0***	*91,7*	*100,0*
LEAF3 early	ROU	30	15		PESSEV	16.4 a	**1.9 e**	**2.4 de**	4.2 b	1.8 e
					Efficacy		~~88,4~~ **88.3**	~~85,4~~ **85.6**	74,4	89,0
Mean efficacy				1		*16,4*	*~~88,4~~* ***88.3***	*~~85,4~~* ***85.6***	*74,4*	*89,0*

At an early assessment date, 15 DA-B, **leaf levels 2 and 3** were considered, after 2 applications. The level of infection observed in the untreated check was 6.0 % and 16.4% severity respectively.
On both leaf levels, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control statistically significantly higher than CA2702 (200 g azoxystrobin/ha) and equivalent to CA2445 (200 g prothioconazole/ha).

Table 3.2-36: Efficacy of CA3642 against PUCCRE/T in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	ROU	58	43		PESSEV	9.7 a	**1.8 fg**	**2.3 ef**	4.3 b	1.7 g
					Efficacy		~~81,4~~ **81.0**	~~76,3~~ **76.0**	55,7	82,5
Mean efficacy				*1*		*9,7*	*~~81,4~~* ***81.0***	*~~76,3~~* ***76.0***	*55,7*	*82,5*
LEAF2 very late	ROU	58	43		PESSEV	22.4 a	**3.8 d**	**4.2 cd**	5.8 b	3.8 d
					Efficacy		**83,0**	~~81,3~~ **81.1**	74,1	83,0
Mean efficacy				*1*		*22,4*	***83,0***	*~~81,3~~* ***81.1***	*74,1*	*83,0*

At a very late assessment date, 43 DA-B, leaf levels 1 and 2 were considered, after 2 applications. The level of infection observed in the untreated check was 9.7% and 22.4% severity respectively.
On both leaf levels, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control statistically significantly higher than CA2702 (200 g azoxystrobin/ha).
CA2445 (200 g prothioconazole/ha) showed an effectiveness comparable to CA3642 at leaf level 1 when applied at 1.4 L/ha, and at leaf level 2 at both rates.
At leaf level 1, CA2445 showed a mean efficacy significantly higher than CA3642 applied at 1.2 L/ha.

Comments of zRMS:

9 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved effectiveness on similar level compared to azoxystrobin used solo. In the North-East EPPO zone, CA3642 had similar effect compared to both reference products of CA2702 and CA2445. In the South-East EPPO zone, no significant differences between prothioconazole used solo and CA3642 were observed after 2 applications. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of PUCCRE/T in winter oilseed rape.

Winter Wheat (TRZAW) – Yellow rust (PUCCST/I – *Puccinia striiformis*)

TRZAW – PUCCST/I – Maritime EPPO zone

The results of 11 trials are presented in order to confirm the interest of the mixture for the control of *Puccinia striiformis* (PUCCST/I) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in Germany (1) and Great Britain (10) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 35 and the second application was done 16 - 35 days later, at BBCH 39 – 59.

Table 3.2-37: Efficacy of CA3642 against PUCCST/I in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha
Efficacy after 2 applications											
LEAF1 early	GBR	42	15		PESSEV Efficacy	50.63 a	**0.35 c 99.3**	**0.43 c 99.2**	7.18 b 85.8	1.21 c 97.6	
	GBR	38	15		PESSEV Efficacy	4.66 a	**0.01 b 99.8**	**0.02 b** ~~99.6~~ **99.5**	0.49 b 89.5	0.02 b 99.6	
	GBR	49	14	TA	PESSEV Efficacy	4.93 a a	**0.00 c 100.0 d**	**0.00 c 100.0 d**	0.28 b 94.3 b	0.03 c 99.4 cd	
	GBR	33	15	TA	PESSEV Efficacy	24.81 a a	**0.00 b 100.0 c**	**0.00 b 100.0 c**	0.26 b 99.0 b	0.00 b 100.0 c	
	GBR	31	15	TA	PESSEV Efficacy	34.50 a a	**3.89 cd 88.7 cd**	**7.06 bc 79.5 bc**	5.79 cd 83.2 c	5.35 cd 84.5 c	
	GBR	51	17	TA	PESSEV Efficacy	8.5 a a	**0.0 b 100.0 b**	**0.6 b** ~~92.9~~ **92.5** **b**	3.1 b 63.5 b		0.2 b 97.6 b

Leaf level assm. timing	Country	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type / Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PROLINE 275 PTZ 275 g/L EC 0.72 L/ha 198 g PTZ/ha
					cy						
Mean efficacy				*5*	*Mean* Min Max	*23.9* 4.7 50.6	***97.6*** **88.7** **100.0**	***95.7*** **79.5** **100.0**	*90.4* 83.2 99.0	*96.2* 84.5 100.0	
Mean efficacy				*1*		*8.5*	***100.0***	***92.9***	*63.5*		*97.6*
LEAF2 early	GBR	42	15	TA	PESSEV Effica-cy	57.63 a a	**0.95 e** **98.4** **g**	**1.16 e** **98.0** **fg**	11.64 b 79.8 b	1.81 e 96.9 ef	
	GBR	38	15		PESSEV Effica-cy	4.16 a	**0.08 b** ~~98.1~~ **98.2**	**0.11 b** ~~97.4~~ **97.3**	0.98 b 76.4	0.13 b 96.9	
	GBR	49	14	TL	PESSEV Effica-cy	87.50 a a	**4.70 f** **94.6** **h**	**5.80 f** **93.4** **g**	46.50 b 46.9 b	13.86 c 84.2 c	
	GBR	33	15		PESSEV Effica-cy	56.88 a	**0.00 c** **100.0**	**0.00 c** **100.0**	7.54 b 86.7	0.00 c 100.0	
	GBR	31	15		PESSEV Effica-cy	67.63 a	**7.00 b** ~~89.6~~ **89.7**	**13.36 b** **80.2**	16.78 b 75.2	9.60 b 85.8	
	GBR	51	17		PESSEV Effica-cy	6.5 a	**0.0 b** **100.0**	**0.2 b** ~~96.9~~ **96.7**	1.2 b 81.5		0.0 b 100.0
Mean efficacy				*5*	*Mean* Min Max	*54.8* 4.2 87.5	***96.1*** ~~89.6~~ **89.7** **100.0**	***93.8*** **80.2** **100.0**	*73.0* 46.9 86.7	*92.7* 84.2 100.0	
Mean efficacy				*1*		*6.5*	***100.0***	~~96.9~~ ***96.7***	*81.5*		*100.0*
LEAF3 early	GBR	49	14		PESSEV Effica-cy	96.89 a	**24.75 i** **74.5**	**40.00 g** **58.7**	81.75 b 15.6	56.13 d 42.1	
	GBR	33	15		PESSEV Effica-cy	82.63 a	**0.00 c** **100.0**	**0.00 c** **100.0**	12.18 b 85.3	0.00 c 100.0	
	GBR	31	15		PESSEV Effica-cy	88.60 a	**13.13 cd** **85.2**	**18.23 bcd** **79.4**	29.98 b 66.2	17.91 bcd 79.8	
	GBR	40	15		PESSEV Effica-cy	19.13 a	**0.38 d** **98.0**	**1.19 d** **93.8**	13.23 b 30.8	1.31 d 93.2	
	GBR	33	15	TA	PESSEV Effica-	8.54 a a	**1.89 c** **77.9** **b**	**2.19 bc** **74.4** **b**	2.05 bc 76.0 b		2.49 bc 70.8 b

Leaf level assm. timing	Country	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
					cy						
Mean efficacy				*4*	*Mean* Min Max	*71.8* 19.1 96.9	***89.4*** **74.5** **100.0**	***83.0*** **58.7** **100.0**	*49.5* 15.6 85.3	*78.8* 42.1 100.0	
Mean efficacy				*1*		*8.5*	***77.9***	***74.4***	*76.0*		*70.8*
LEAF4 early	GBR	40	15	TA	PESSEV Effica-cy	24.06 a a	**2.48 b** **89.7** **b**	**3.26 b** ~~86.5~~ **86.4** **b**	22.96 a 4.6 a	4.10 b 83.0 b	
Mean efficacy				*1*		*24.1*	***89.7***	~~*86.5*~~ ***86.4***	*4.6*	*83.0*	

At assessment date ‘’early’’ (14-17 DA-B), in **leaf level 1**, in 5 trials the test product was compared to the solo azoxystrobin and prothioconazole formulations CA2702 and CA2445 while in 1 trial it was compared to the solo formulations CA2702 and PROLINE 275. When considering the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved 97.6 % and 95.7 % efficacy respectively. In 1 trial, it reached 100 % and 92.9 % efficacy respectively. The level of infection observed in the untreated check was 23.9 % severity across 5 trials and 8.5 % in 1 trial.
Performance of CA3642 was slightly higher compared to CA2702 (200 g azoxystrobin/ha) and significantly higher in 3 individual assessments.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) on average with no statistically significant differences observed in the individual assessments.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) with no statistically significant differences.

In **leaf level 2**, when considering the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 96.1 % and 93.8 % efficacy respectively. In 1 trial it reached 100 % and 96.9 % efficacy respectively. The level of infection observed in the untreated check was 54.8 % severity across 5 trials and 6.5 % in 1 trial.
Performance of CA3642 was numerically higher than CA2702 on average and this is statistically significant in 3 individual assessments.
Performance of CA3642 was slightly higher compared to CA2445 and significantly higher in 2 individual assessments.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) with no statistically significant differences.

In **leaf level 3**, when considering the mean efficacy across 4 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 89.4 % and 83 % efficacy respectively. In 1 trial, it reached 77.9 % and 74.4 % efficacy respectively. The level of infection observed in the untreated check was 71.8 % severity across 4 trials and 8.5 % in 1 trial.
Performance of CA3642 was numerically higher than CA2702 on average and this is statistically significant in 4 individual assessments at 1.4 L/ha and 3 assessments at 1.2 L/ha.
Performance of CA3642 was significantly higher than CA2455 in 1 of 4 assessmentsPerformance of CA3642 was numerically higher compared to PROLINE 275 (198 g g prothioconazole/ha) but with no statistically significant differences.

Table 3.2-38: Efficacy of CA3642 against PUCCST/I in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Late assessment – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
Efficacy after 2 applications											
LEAF1 late	GBR	48	32	TA	PESSEV Efficacy	47.4 a a	**4.6 c** ~~90.3~~ **90.2** **c**	**7.4 bc** ~~84.4~~ **84.5** **bc**	10.7 bc 77.4 b	5.6 bc 88.2 c	
	GBR	50	27		PESSEV Efficacy	21.41 a	**0.02 b** **99.9**	**0.04 b** **99.8**	2.70 b 87.4	0.28 b 98.7	
	GBR	61	34		PESSEV Efficacy	53.0 a	**0.3 e** **99.4**	**0.4 e** **99.2**	11.9 b 77.5	6.0 c 88.7	
	GBR	61	27	TL	PESSEV Efficacy	42.0 a a	**8.6 b** **79.5** **e**	**11.0 b** **73.8** **cde**	21.2 b 49.5 b		10.3 b 75.5 de
Mean efficacy				*3*	*Mean* Min Max	*40.6* 21.4 53.0	***96.5*** **90.3** **99.9**	***94.5*** **84.4** **99.8**	*80.8* 77.4 87.4	*91.9* 88.2 98.7	
Mean efficacy				*1*		*42.0*	***79.5***	***73.8***	*49.5*		*75.5*
LEAF2 late	GBR	48	32		PESSEV Efficacy	73.2 a	**20.8 c** **71.6**	**24.3 c** **66.8**	42.3 b 42.2	21.6 c 70.5	
	GBR	50	27		PESSEV Efficacy	17.06 a	**0.09 b** **99.5**	**0.15 b** **99.1**	3.05 b 82.1	0.52 b 97.0	
	GBR	61	34	TL	PESSEV Efficacy	50.0 a a	**0.4 d** **99.2** **e**	**0.5 d** **99.0** **e**	10.2 b 79.6 b	4.7 c 90.6 c	
	GBR	61	27		PESSEV Efficacy	82.1 a	**10.9 e** **86.7**	**15.3 de** **81.4**	27.4 b 66.6		13.7 de 83.3
Mean efficacy				*3*	*Mean* Min Max	*46.8* 17.1 73.2	***90.1*** **71.6** **99.5**	***88.3*** **66.8** **99.1**	*68.0* 42.2 82.1	*86.0* 70.5 97.0	
Mean efficacy				*1*		*82.1*	***86.7***	***81.4***	*66.6*		*83.3*

At assessment date ''late'' (27-34 DA-B), in **leaf level 1**, in 3 trials the test product was compared to the solo azoxystrobin and prothioconazole formulations CA2702 and CA2445 while in 1 trial it was compared to the solo formulations CA2702 and PROLINE 275. When considering the mean efficacy across 3 trials, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved 96.5 % and 94.5 %

efficacy respectively. In 1 trial, it reached 79.5 % and 73.8 % efficacy respectively. The level of infection observed in the untreated check was 40.6 % severity across 5 trials and 42 % in 1 trial.
Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.4 L/ha (180 g a.s/ha azoxystrobin and 180 g a.s./ha prothioconazole) in 3 individual assessments, and applied at 1.2 L/ha in 2 assessments.
Performance of CA3642 was equivalent to CA2445 (200 g prothioconazole/ha) on average but significantly higher in 1 individual assessment.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) with no statistically significant difference observed.

In **leaf level 2**, when considering the mean efficacy across 3 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 90.1 % and 88.3 % efficacy respectively. In 1 trial, it reached 86.7 % and 81.4 % efficacy respectively. The level of infection observed in the untreated check was 46.8 % severity across 3 trials and 82.1 % in 1 trial.
Performance of CA3642 was significantly higher than CA2702 in all 3 individual assessments.
Performance of CA3642 was equivalent to CA2445 on average but significantly higher in 1 individual assessment.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) with no statistically significant difference.

Table 3.2-39: Efficacy of CA3642 against PUCCST/I in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Very late assessment – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha
Efficacy after 2 applications											
LEAF1 very late	GBR	77	42		PESSEV Efficacy	88.9 a	**4.5 d** ~~94.9~~ **95.0**	**5.0 d** **94.4**	45.3 b 49.0	42.9 b 51.7	
	GBR	54	36		PESSEV Efficacy	32.0 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.9 b 97.2	0.2 b 99.4	
	GBR	68	43	TA	PESSEV Efficacy	38.8 a a	**0.9 d** **97.7** f	**2.0 d** ~~94.8~~ **94.9** ef	24.8 b 36.1 b	7.1 cd 81.7 d	
	DEU	64	46		PESSEV Efficacy	9.1 a	**0.5 c** ~~94.5~~ **94.4**	**0.2 c** ~~97.8~~ **97.7**	0.3 c 96.7	0.9 c 90.1	
	GBR	74	40	TA	PESSEV Efficacy	5.6 a a	**0.0 c** **100.0** c	**1.4 bc** ~~75.0~~ **75.3** abc	3.9 ab 30.4 ab		0.5 bc 91.1 bc
	GBR	59	41		PESSEV Effica-	10.2 a	**0.6 e** ~~94.1~~ **94.3**	**3.9 c** ~~61.8~~ **62.2**	5.1 b 50.0		2.1 d 79.4

Leaf level assm. timing	**Coun-try**	**DA-A**	**DA-B**	**No. of tri-als & AR M**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
					cy						
Mean efficacy				*4*	*Mean* Min Max	*42.2* 9.1 88.9	***96.8*** ~~94.5~~ **94.4** **100.0**	***96.8*** **94.4** **100.0**	*69.8* 36.1 97.2	*80.7* 51.7 99.4	
Mean efficacy				*2*	*Mean* Min Max	*7.9* 5.6 10.2	~~*97.1*~~ ***97.2*** ~~94.1~~ **94.3** **100.0**	~~*68.4*~~ ***68.8*** ~~61.8~~ **62.2** ~~75.0~~ **75.3**	*40.2* 30.4 50.0		*85.2* 79.4 91.1
LEAF2 very late	GBR	77	42		PESSEV Effica-cy	100.0 a	**5.4 f** **94.6**	**6.1 f** **93.9**	71.0 c 29.0	80.9 b 19.1	
	GBR	54	36		PESSEV Effica-cy	80.3 a	**0.0 c** **100.0**	**0.0 c** **100.0**	8.6 b 89.3	0.0 c 100.0	
	GBR	68	43		PESSEV Effica-cy	67.8 a	**5.6 d** **91.7**	**5.5 d** **91.9**	32.3 b 52.4	14.1 c 79.2	
	DEU	64	46		PESSEV Effica-cy	8.4 a	**0.2 d** ~~97.6~~ **97.5**	**0.4 d** **95.2**	2.7 bc 67.9	0.3 d 96.4	
	GBR	74	40		PESSEV Effica-cy	5.2 a	**0.0 c** **100.0**	**0.0 c** **100.0**	3.4 b 34.6		0.0 c 100.0
	GBR	65	43		PESSEV Effica-cy	5.56 a	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0		0.00 b 100.0
	GBR	59	41		PESSEV Effica-cy	22.7 a	**9.5 e** ~~58.1~~ **58.4**	**18.6 b** ~~18.1~~ **18.0**	18.6 b 18.1		12.6 c 44.5
Mean efficacy				*4*	*Mean* Min Max	*64.1* 8.4 100.0	***96.0*** **91.7** **100.0**	***95.3*** **91.9** **100.0**	*59.6* 29.0 89.3	*73.7* 19.1 100.0	
Mean efficacy				*3*	*Mean* Min Max	*11.2* 5.2 22.7	***86.0*** ~~58.1~~ **58.4** **100.0**	***72.7*** ~~18.1~~ **18.0** **100.0**	*50.9* 18.1 100.0		*81.5* 44.5 100.0
LEAF3 very late	GBR	77	42		PESSEV Effica-cy	100.0 a	**19.1 h** **80.9**	**49.8 g** **50.2**	95.4 b 4.6	88.6 d 11.4	
	GBR	54	36	TA	PESSEV Effica-cy	96.8 a a	**0.0 c** **100.0** c	**0.0 c** **100.0** c	13.3 b 86.3 b	0.0 c 100.0 c	
	GBR	68	43		PESSEV Effica-cy	83.5 a	**7.1 f** **91.5**	**13.1 ef** **84.3**	60.4 b 27.7	30.2 cd 63.8	
	GBR	65	43		PESSE	5.86	**0.00 b**	**0.00 b**	0.00 b		0.00 b

Leaf level assm. timing	**Coun-try**	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**
					V Effica-cy	a	**100.0**	**100.0**	100.0		100.0
Mean efficacy				*3*	*Mean* Min Max	*93.4* 83.5 100.0	***90.8*** **80.9** **100.0**	***78.2*** **50.2** **100.0**	*39.5* 4.6 86.3	*58.4* 11.4 100.0	
Mean efficacy				*1*		*5.9*	***100.0***	***100.0***	*100.0*		*100.0*
LEAF4 very late	GBR	68	43		PESSEV Effica-cy	100.0 a	**18.2 g** **81.8**	**22.9 g** **77.1**	92.9 b 7.1	63.0 c 37.0	
Mean efficacy				*1*		*100.0*	***81.8***	***77.1***	*7.1*	*37.0*	

At assessment date ''very late'' (36-46 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved a mean efficacy across 4 trials of 96.8 % for both application rates and across 2 trials of 97.1 % and 68.4 % respectively. The level of infection observed in the untreated check was 42.2 % severity across 4 trials and 7.9 % across 2 trials.

Performance of CA3642 was numerically higher than CA2702 (200 g azoxystrobin/ha) on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.4 L/ha (210 g azoxystrobin and 210 g prothioconazole/ha) in 4 individual assessments, and applied at 1.2 L/ha in 3 assessments.
Performance of CA3642 was numerically higher than CA2445 (200 g prothioconazole/ha) on average and this is statistically significant in 2 individual assessments.
Performance of CA3642 at 1.4 L/ha was numerically higher than PROLINE 275 (198 g prothioconazole/ha) on average and this is statistically significant in 1 individual assessment.

In **leaf level 2**, the test product CA3642 applied at 1.4 and 1.2 L/ha, achieved a mean efficacy across 4 trials of 96 % and 95.3 % respectively and across 3 trials of 86 % and 72.7 % respectively. The level of infection observed in the untreated check was 64.1 % severity across 4 trials and 11.2 % across 2 trials.
Performance of CA3642 was numerically higher than CA2702 on average. A statistically significant difference was observed between CA2702 and CA3642 applied at 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) in 5 individual assessments.
Performance of CA3642 was numerically higher than CA2445 on average and this is statistically significant in 2 individual assessments.
Performance of CA3642 was equivalent to PROLINE 275 (198 g prothioconazole/ha) on average. In 1 assessment, CA3642 applied at 1.4 L/ha achieved significantly higher efficacy.

In **leaf level 3**, the test product CA3642 applied at 1.4 and 1.2 L/ha, achieved a mean efficacy across 3 trials of 90.8 % and 78.2 % respectively and in 1 trial it reached 100 % efficacy for both application rates. The level of infection observed in the untreated check was 93.4 % severity across 3 trials and 5.9 % across 1 trial.
Performance of CA3642 was numerically higher than CA2702 on average and this is statistically significant in 3 individual assessments.
Performance of CA3642 was numerically higher than CA2445 on average and this is statistically significant in 2 individual assessments.

Performance of CA3642 was equivalent to PROLINE 275 with no statistical difference.

TRZAW – PUCCST/I – North-East EPPO zone

The results of 1 trial are presented in order to confirm the interest of the mixture for the control of *Puccinia striiformis* (PUCCST/I) under the conditions of the North-East EPPO climatic zone. The trial was carried out in Poland (1) in 2020. The first application took place at crop stage BBCH 30 and the second application was done 49 days later, at BBCH 57.

Table 3.2-40: Efficacy of CA3642 against PUCCST/I in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF1 very late	POL	84	35	TA	PESSEV Efficacy	7.1 a a	**0.4 b** ~~94.4~~ **94.7** **b**	**1.1 b** ~~84.5~~ **85.0** **b**	0.8 b 88.7 b	0.7 b 90.1 b
Mean efficacy				*1*		*7.1*	*~~94.4~~* ***94.7***	*~~84.5~~* ***85.0***	*88.7*	*90.1*

At a very late assessment date (35 DA-B), on **leaf level 1**, no statistical difference was observed between CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) and solo formulations applied at 0.8 L/ha CA2702 (200 g azoxystrobin/ha) and CA2445 (200 g prothioconazole/ha). All treatments reached high level of control, 84.5% or more, with a level of infection observed in the untreated check at 7.1 % severity.

TRZAW – PUCCST/I – South-East EPPO zone

The results of 2 trials are presented in order to confirm the interest of the mixture for the control of *Puccinia striiformis* (PUCCST/I) under the conditions of the South-East EPPO climatic zone. The trials were carried out in Romania (2) in 2019. The first application took place at crop stage BBCH 33 - 34 and the second application was done 21 - 28 days later, at BBCH 59 – 61.

Table 3.2-41: Efficacy of CA3642 against PUCCST/I in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Late assessment</u> – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF1 late	ROU	55	27	TA	PESSEV Efficacy	20.88 a a	**0.04 b** **99.8** **d**	**0.04 b** **99.8** **d**	0.26 b 98.8 b	0.06 b 99.7 d
Mean efficacy				*1*		*20.9*	***99.8***	***99.8***	*98.8*	*99.7*
LEAF2 late	ROU	55	27		PESSEV Efficacy	29.56 a	**0.09 b** **99.7**	**0.15 b** **99.5**	0.63 b 97.9	0.15 b 99.5

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 (PROLINE) PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
				TL		a	**d**	**d**	b	d
Mean efficacy				*1*		*29.6*	***99.7***	***99.5***	*97.9*	*99.5*
LEAF3 late	ROU	55	27		PESSEV Efficacy	57.94 a	**0.02 b** **100.0**	**0.18 b** **99.7**	0.53 b 99.1	0.18 b 99.7
Mean efficacy				*1*		*57.9*	***100.0***	***99.7***	*99.1*	*99.7*

At a late assessment date, 27 DA-B, leaf levels 1, 2 and 3 were considered, after 2 applications. The level of infection observed in the untreated check was 20.9%, 29.6%, and 57.9% severity respectively.
In leaf levels 1 and 2, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control slightly but statistically significantly higher than CA2702 (200 g azoxystrobin/ha). While in leaf level 3 no statistically significant difference was detected, at both rates.
On all leaf levels, CA2445 (200 g prothioconazole/ha) showed an effectiveness comparable to CA3642 applied at both rates, with no statistically significant difference observable.

Table 3.2-42: Efficacy of CA3642 against PUCCST/I in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 (PROLINE) PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF2 very late	ROU	57	36		PESSEV Efficacy	5.16 a	**0.03 b** **99.4**	**0.03 b** **99.4**	0.04 b 99.2	0.02 b 99.6
Mean efficacy				*1*		*5.2*	***99.4***	***99.4***	*99.2*	*99.6*

At a very late assessment date, 36 DA-B, leaf level 2 was considered, with a low infection (5.2% severity). After 2 applications, all treatments achieved efficacy of 99.2% or more and no difference was observed between CA3642 applied at both rates (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) and the solo formulation products.

Comments of zRMS:

14 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved effectiveness on similar level compared to prothioconazole used solo. Significant inferior results have been noted for azoxystrobin used solo in some trials. The justification of mixture was visible in the early assessment. CA3642 achieved results of 83-89% whilst 50% for azoxystrobin solo and 79% for prothioconazole solo. The differences were observed also in the very late assessment (97% vs 70% and 81% on L1, 95-96% vs 60% and 74% on L2, 78-91% vs 40% and 58% on L3). In the North-East and South-East EPPO zone, CA3642 and active substances used solo had comparable effectiveness after 2 applications. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of PUCCST in winter wheat.

Winter Wheat (TRZAW) – Tan spot (PYRNTR – *Pyrenophora tritici-repentis*)

TRZAW – PYRNTR – Maritime EPPO zone

The results of 1 trial are presented in order to confirm the interest of the mixture for the control of *Pyrenophora-tritici-repentis* (PYRNTR) under the conditions of the Maritime EPPO climatic zone. The trial was carried out in Czech Republic (1) in 2019. The first application took place at crop stage BBCH 32 and the second application was done 24 days later, at BBCH 41.

Table 3.2-43: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applica-tions										
LEAF3 early	CZE	41	17		PESSEV Efficacy	7.1 a	**0.7 c** ~~90.1~~ **89.9**	**0.9 c** ~~87.3~~ **87.1**	2.6 b 63.4	1.2 c 83.1
Mean efficacy				*1*		*7.1*	*~~90.1~~* ***89.9***	*~~87.3~~* ***87.1***	*63.4*	*83.1*
LEAF4 early	CZE	41	17		PESSEV Efficacy	16.7 a	**1.8 c** ~~89.2~~ **89.5**	**2.6 c** ~~84.4~~ **84.3**	6.9 b 58.7	3.4 c 79.6
Mean efficacy				*1*		*16.7*	*~~89.2~~* ***89.5***	*~~84.4~~* ***84.3***	*58.7*	*79.6*

At assessment date ‘’early’’ (17 DA-B), in **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha), achieved 90.1 % and 87.3 % efficacy respectively. The level of infection observed in the untreated check was 7.1 % severity.
Performance of CA3642 was higher than CA2702 (200 g azoxystrobin/ha) and this is statistically significant.
Performance of CA3642 was slightly higher than CA2445 (200 g prothioconazole/ha) but with no statistically significant difference.

Table 3.2-44: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applica-tions										
LEAF1 very late	CZE	59	35		PESSEV Efficacy	58.4 a	**21.4 c 63.4**	**22.5 c 61.5**	27.2 c 53.4	29.4 c 49.7
Mean efficacy				*1*		*58.4*	***63.4***	***61.5***	*53.4*	*49.7*

At assessment date ‘’very late’’ (35 DA-B), in **leaf level 1**, in 1 trial, the test product CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) and 1.2 L/ha (180 g azoxystrobin and

180 g prothioconazole/ha), achieved 63.4 % and 61.5 % respectively. The level of infection observed in the untreated check was 58.4 % severity.
Performance of CA3642 applied at 1.4 (210 g azoxystrobin and 210 g prothioconazole/ha) was numerically higher than CA2702 (200 g azoxystrobin/ha) with no statistically significant difference.
Performance of CA3642 was also numerically higher than CA2445 (200 g prothioconazole/ha) with no statistically significant difference.

TRZAW – PYRNTR – North-East EPPO zone

The results of 10 trials are presented in order to confirm the interest of the mixture for the control of *Pyrenophora-tritici-repentis* (PYRNTR) under the conditions of the North-East EPPO climatic zone. The trials were carried out in Latvia (7) and Lithuania (3) between 2019 and 2021. The first application took place at crop stage BBCH 32 - 37 and the second application was done 16 -33 days later, at BBCH 39 – 59.

Table 3.2-45: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Early assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
Efficacy after 2 applications										
LEAF1 early	LVA	44	14	 TA	PESSEV Efficacy	9.9 a a	**1.0 c** ~~89.9~~ **90.4** **cd**	**1.4 c** ~~85.9~~ **85.8** **bcd**	7.3 b 26.3 a	0.7 c 92.9 d
	LVA	41	13	 TA	PESSEV Efficacy	6.5 a a	**1.3 c** ~~80.0~~ **80.3** **b**	**1.5 c** **76.9** **b**	4.3 b 33.8 a	1.6 c 75.4 b
	LVA	49	21	 TA	PESSEV Efficacy	13.8 a a	**2.3 d** **83.3** **d**	**2.2 d** **84.1** **d**	5.9 c 57.2 c	2.7 d 80.4 d
Mean efficacy				*3*	*Mean* Min Max	*10.1* 6.5 13.8	***84.4*** **80.0** **89.9**	***82.3*** **76.9** **85.9**	*39.1* 26.3 57.2	*82.9* 75.4 92.9
LEAF2 early	LTU	31	15		PESSEV Efficacy	5.0 a	**2.0 c** ~~60.0~~ **60.3**	**1.9 c** ~~62.0~~ **63.1**	4.4 ab 12.0	2.7 bc 46.0
	LVA	44	14		PESSEV Efficacy	26.8 a	**3.6 d** **86.6**	**3.9 d** **85.4**	16.8 c 37.3	4.0 d 85.1
	LVA	41	13		PESSEV Efficacy	29.0 a	**4.9 c** **83.1**	**4.8 c** ~~83.4~~ **83.6**	16.8 b 42.1	6.3 c 78.3
	LVA	42	14		PESSEV Efficacy	7.8 a	**1.9 cd** ~~75.6~~ **75.8**	**1.7 cd** ~~78.2~~ **77.6**	5.1 b 34.6	1.2 d 84.6
Mean efficacy				*4*	*Mean* Min Max	*17.2* 5.0 29.0	~~*76.3*~~ ***76.5*** ~~60.0~~ **60.3** **86.6**	~~*77.3*~~ ***77.4*** ~~62.0~~ **63.1** **85.4**	*31.5* 12.0 42.1	*73.5* 46.0 85.1
LEAF4 early	LVA	41	14		PESSEV Efficacy	11.0 a	**9.7 a** ~~11.8~~ **11.9**	**7.5 a** ~~31.8~~ **32.3**	10.5 a 4.5	7.9 a 28.2
Mean efficacy				*1*		*11.0*	~~*11.8*~~ ***11.9***	~~*31.8*~~ ***32.3***	*4.5*	*28.2*

At assessment date "early" (13-21 DA-B), in **leaf levels 1 and 2**, the test product CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control equivalent to the level of efficacy achieved by CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha), with no statistical difference observed in all individual assessments.

Azoxystrobin solo formulation CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) showed a significantly lower control on both leaf levels 1 and 2. A statistical difference was observed in all individual assessments.
The level of infection observed in the untreated check was 10.1% severity at leaf 1 and 17.2% severity at leaf 2.

Table 3.2-46: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 late	LTU	56	31		PESSEV Efficacy	16.0 abc	**11.9 c** ~~25.6~~ **25.8**	**13.3 bc** ~~16.9~~ **17.2**	15.1 abc 5.6	12.5 bc 21.9
	LTU	50	28		PESSEV Efficacy	8.4 a	**4.1 b** ~~51.2~~ **51.3**	**3.2 b** ~~61.9~~ **61.8**	4.9 b 41.7	7.6 a 9.5
	LTU	41	25	TL	PESSEV Efficacy	31.8 a a	**13.8 bc** **56.6** **c**	**13.9 bc** **56.3** **c**	19.5 b 38.7 b	15.4 bc 51.6 c
	LVA	52	27		PESSEV Efficacy	6.8 a	**1.5 b** ~~77.9~~ **78.0**	**1.3 b** ~~80.9~~ **81.2**	4.0 b 41.2	1.5 b 77.9
Mean efficacy				*4*	*Mean* Min Max	*15.8* 6.8 31.8	~~52.8~~ ***52.9*** ~~25.6~~ **25.8** ~~77.9~~ **78.0**	~~54.0~~ ***54.1*** ~~16.9~~ **17.2** ~~80.9~~ **81.2**	*31.8* 5.6 41.7	*40.2* 9.5 77.9
LEAF2 late	LVA	51	21		PESSEV Efficacy	80.6 a	**38.3 b** **52.5**	**35.8 b** **55.6**	73.4 a 8.9	30.8 b 61.8
	LVA	52	27		PESSEV Efficacy	14.1 a	**4.8 c** ~~66.0~~ **65.8**	**3.9 c** ~~72.3~~ **72.7**	9.7 b 31.2	5.2 c 63.1
	LVA	62	35		PESSEV Efficacy	28.9 a	**20.7 bc** **28.4**	**22.0 bc** **23.9**	24.1 ab 16.6	22.4 bc 22.5
	LVA	70	37		PESSEV Efficacy	34.4 a	**15.1 c** ~~56.1~~ **56.2**	**16.9 c** ~~50.9~~ **50.7**	25.2 b 26.7	16.8 c 51.2
Mean efficacy				*4*	*Mean* Min Max	*39.5* 14.1 80.6	***50.7*** **28.4** ~~66.0~~ **65.8**	***50.7*** **23.9** ~~72.3~~ **72.7**	*20.9* 8.9 31.2	*49.6* 22.5 63.1

At a late assessment date, **leaf levels 1 and 2** were considered (21-37 DA-B), across four assessments each leaf level, with infection observed in the untreated check from 15.8% to 39.5% severity.
No statistical difference was observed between CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) and prothioconazole solo formulation CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha), in three out of four assessments at leaf 1, and in all four assessments at leaf 2. In a late assessment on leaf level 1, CA2445 showed a distinct lower control.
Azoxystrobin solo formulation CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) showed a numerically lower control compared to CA3642, on both leaf levels.
At leaf 1, statistically significant differences were detected in one out of four assessments, although numerical differences were observed in all four assessments.

At leaf 2, statistically significant differences were detected in three out of four assessments.

Table 3.2-47: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Very late assessment – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	LVA	60	35		PESSEV	9.5 a	**1.9 c**	**2.8 c**	5.3 b	3.1 c
					Efficacy		**80.0**	~~70.5~~ **71.1**	44.2	67.4
	LVA	62	35		PESSEV	4.1 a	**2.9 b**	**3.1 b**	3.2 b	3.1 b
					Efficacy		~~29.3~~ **30.5**	~~24.4~~ **25.6**	22.0	24.4
	LVA	70	37		PESSEV	16.1 a	**2.2 c**	**2.8 c**	7.6 b	2.5 c
					Efficacy		**86.3**	~~82.6~~ **82.9**	52.8	84.5
				TA		a	c	c	b	c
Mean efficacy				*3*	*Mean*	*9.9*	***65.2***	~~59.2~~ ***59.9***	*39.7*	*58.7*
					Min	4.1	~~29.3~~ **30.5**	~~24.4~~ **25.6**	22.0	24.4
					Max	16.1	**86.3**	~~82.6~~ **82.9**	52.8	84.5

At a very late assessment date (35-37 DA-B), on leaf level 1, across three assessments, no statistical difference was observed between CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) and prothioconazole solo formulation CA2445 applied at 0.8 L/ha (200 g prothioconazole/ha), although mean efficacy was slightly higher for CA3642.
Azoxystrobin solo formulation CA2702 applied at 0.8 L/ha (200 g azoxystrobin/ha) showed a mean efficacy lower than the mixture formulation CA3642, with statistical difference detected in two out of three assessments.
The level of infection observed in the untreated check was 9.9% severity.

TRZAW – PYRNTR – South-East EPPO zone

The results of 1 trial are presented in order to confirm the interest of the mixture for the control of *Pyrenophora-tritici-repentis* (PYRNTR) under the conditions of the South-East EPPO climatic zone. The trial was carried out in Slovakia (1) in 2020. The first application took place at crop stage BBCH 31 and the second application was done 21 days later, at BBCH 49.

Table 3.2-48: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Early assessment – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF2 early	SVK	36	15		PESSEV	7.0 a	**0.8 f**	**0.8 f**	1.5 d	1.5 d
					Efficacy		~~88.6~~ **89.3**	~~88.6~~ **88.4**	78.6	78.6
Mean efficacy				*1*		*7.0*	~~88.6~~ ***89.3***	~~88.6~~ ***88.4***	*78.6*	*78.6*
LEAF3 early	SVK	36	15		PESSEV	15.0 a	**1.8 h**	**2.0 g**	3.7 e	4.3 d

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
					Efficacy		~~88.0~~ **88.3**	~~86.7~~ **88.4**	75.3	71.3
Mean efficacy				*1*		*15.0*	*~~88.0~~* ***88.3***	*~~86.7~~* ***88.4***	*75.3*	*71.3*

At an early assessment date, 15 DA-B, **leaf levels 2 and 3** were considered, after 2 applications. The level of infection observed in the untreated check was 7.0% and 15.0% severity respectively.
On both leaf levels, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control statistically and numerically higher than both solo formulation products, CA2702 (200 g azoxystrobin/ha) and CA2445 (200 g prothioconazole/ha).

Table 3.2-49: Efficacy of CA3642 against PYRNTR in wheat compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – <u>Very late assessment</u> – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 very late	SVK	57	36		PESSEV	25.0 a	**4.3 i**	**5.0 h**	8.6 d	6.7 f
					Efficacy		**82.8**	**80.0**	65.6	73.2
Mean efficacy				*1*		*25.0*	***82.8***	***80.0***	*65.6*	*73.2*
LEAF2 very late	SVK	57	36		PESSEV	46.3 a	**8.0 f**	**10.3 e**	18.3 c	14.2 d
					Efficacy		**82.7**	**77.8**	60.5	69.3
Mean efficacy				*1*		*46.3*	***82.7***	***77.8***	*60.5*	*69.3*

At an assessment date "very late", 36 DA-B, leaf levels 2 and 3 were considered, after 2 applications. The level of infection observed in the untreated check was 25.0% and 46.3% severity respectively.
On both leaf levels, CA3642 applied at 1.2 L/ha and at 1.4 L/ha (180-210 g azoxystrobin/ha and 180-210 g prothioconazole/ha) reached a level of control significantly higher than both solo formulation products, CA2702 (200 g azoxystrobin/ha) and CA2445 (200 g prothioconazole/ha).

Comments of zRMS:

12 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved effectiveness on similar level compared to prothioconazole used solo. Significant inferior results have been noted for azoxystrobin used solo in some trials. The justification of mixture was observed on L1 in the very late assessment (62-63% for CA3642 vs 53% for CA2702 and 50% for CA2445). In the North-East zone, no significant differences between the test product and active substances used solo were detected. In the South-East EPPO zone, the justification of mixture was observed in the early assessment. CA3642 achieved 88-89% on L2 and 88% on L3 whilst 78,6% and 75% for CA2702 and 78,6% and 71% for CA2445, respectively. In the very late assessment, the corelation was 80-83% vs 66% and 73%. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of PYRNTR in winter wheat.

Summary of co-formulation justification data on cereals

Representative data from winter wheat is provided to support the justification in cereals.

On SEPTTR a clear benefit was observed from applications of CA3642 compared to CA2702 in all EPPO zones with statistical differences frequently observed. CA3642 also achieved overall higher mean efficacy compared to CA2445.

On ERYSGR/ERYSGT a clear benefit was observed from applications of CA3642 compared to CA2702 with statistical differences observed across all EPPO zones in most assessments. Compared to CA2445, the efficacy of CA3642 was more comparable although overall mean higher efficacy was observed from the mixture, with some statistical differences observed.

On PUCCRE/PUCCRT CA3642 achieved higher mean efficacy compared to CA2445 (some stats diffs) in Mar zone with higher disease infestation and more comparable to CA2702, although mean efficacy was frequently higher in the Maritime EPPO zone. In the trial from the North-East zone where infection was lower, differences were less clear. In the South-East zone a clear benefit of CA3642 compared to CA2702 was observed, with efficacy of CA2445 being more comparable.

On PUCCST in the Maritime zone CA3642 achieved overall higher mean efficacy compared to CA2445 or CA2702 with statistical differences being observed in some assessments. In the trial from the North-East zone where infection was lower, differences were less clear. In the South-East zone a significant benefit of CA3642 compared to CA2702 was observed, with efficacy of CA2445 being more comparable.

On PYRNTR in all EPPO zones a clear benefit was observed from applications of CA3642 compared to CA2702 with statistical differences observed. Compared to CA2445 also, CA3642 achieved overall mean higher efficacy with some statistical differences observed.

The results demonstrate that the proposed mixture product CA3645 provides better overall efficacy of a range of common pathogens compared to solo products of the components azoxystrobin and prothio-conazole. The benefit of the mixture is most clearly demonstrated in those pathogens which are more challenging for fungicide control. No antagonistic effects were observed from the co-formulation.

Ratio justification on cereals

The results of 21 trials carried out in 2019 are presented to justify the selection of the mixture’s active substances ratio. Representative data from winter wheat is provided to support the justification in ce-reals.

CA3642, a formulation containing 150 g azoxystrobin and 150 g prothioconazole per litre is compared in this preliminary section to another co-formulation, *i.e.* CA3664 (not registered), which contains 200 g azoxystrobin and 150 g prothioconazole per litre.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-122.

The analysis is carried out for key representative uses.
The results are presented hereafter for the following diseases and analysed for the Maritime and North-East EPPO zones:

- Septoria leaf spot – *Zymoseptoria tritici* (SEPTTR)
- Powdery mildew – *Blumeria graminis* / *Blumeria graminis* f. sp. *tritici* (ERYSGR / ERYSGT)
- Brown rust – *Puccinia recondita* / *Puccinia triticina* (PUCCRE / PUCCRT)
- Yellow rust – *Puccinia striiformis* / *Puccinia striiformis* f. sp. *tritici* (PUCCST / PUCCSI)

Winter Wheat (TRZAW) – Septoria leaf spot (SEPTTR – *Zymoseptoria tritici*)

TRZAW – SEPTTR – Maritime EPPO zone

The results of 14 trials are presented in order to justify the active substances ratio for the control of *Zymoseptoria tritici* (SEPTTR) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in France (5), Germany (4) and Great Britain (5) in 2019. The first application took place at crop stage BBCH 31 - 35 and the second application was done 17 - 34 days later, at BBCH 39 - 45.

Table 3.2-xx: Efficacy of CA3642 against SEPTTR in wheat to the efficacy of products containing azoxystrobin and prothioconazole in a different concentration – Early assessment – Maritime EPPO zone

Leaf level assm. Timing	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	GBR	51	17	TIO	PESSEV Efficacy	8.1 a a	**4.1 a** ~~49.4~~ **49.6** **a**	**4.2 a** ~~48.1~~ **48.2** **a**	6.4 a 21.0 a
Mean efficacy				1		*8.1*	~~*49.4*~~ ***49.6***	~~*48.1*~~ ***48.2***	*21.0*
LEAF2 early	GBR	37	20		PESSEV Efficacy	9.8 a	**3.1 d** ~~68.4~~ **68.3**	**4.1 c** ~~58.2~~ **58.5**	2.7 e 72.4
	FRA	31	14	TA	PESSEV Efficacy	5.2 a a	**2.0 b** ~~61.5~~ **62.0** **b**	**2.0 b** ~~61.5~~ **61.0** **b**	2.3 b 55.8 b
	GBR	51	17	TIO	PESSEV Efficacy	18.8 a a	**9.8 b** ~~47.9~~ **47.8** **a**	**8.8 b** ~~53.2~~ **52.9** **a**	7.2 b 61.7 a
	GBR	33	15		PESSEV Efficacy	10.33 a	**3.74 e** **63.8**	**5.03 d** **51.3**	3.96 e 61.7
	FRA	43	13	TA	PESSEV Efficacy	17.8 a a	**7.2 cd** ~~59.6~~ **59.5** **cd**	**4.6 d** ~~74.2~~ **74.0** **d**	6.5 cd 63.5 cd
	GBR	48	18		PESSEV Efficacy	15.0 a	**6.3 b** ~~58.0~~ **57.9**	**5.9 b** ~~60.7~~ **61.0**	6.1 b 59.3
	FRA	43	16		PESSEV Efficacy	6.68 a	**2.76 c** **58.7 58.6**	**2.46 c** ~~63.2~~ **63.1**	2.44 c 63.5
Mean efficacy				7	*Mean* Min Max	*11.9* 5.2 18.8	***59.7*** ~~47.9~~ **47.8** ~~68.4~~ **68.3**	***60.3*** **51.3** ~~74.2~~ **74.0**	*62.6* 55.8 72.4
LEAF3 early	GBR	48	18		PESSEV Efficacy	75.8 a	**53.3 c** **29.7**	**52.6 c** **30.6**	54.0 c 28.8
	FRA	43	16		PESSEV Efficacy	19.85 a	**8.85 bc** **55.4**	**6.23 c** **68.6**	8.81 bc 55.6
	GBR	37	20		PESSE	23.8 a	**11.2 e**	**13.2 d**	14.6 c

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
				TA	V Efficacy	a	~~52.9~~ **53.0** **e**	~~44.5~~ **44.6** **d**	38.7 c
	FRA	31	14		PESSEV Efficacy	15.1 a	**5.3 b** ~~64.9~~ **64.7**	**6.4 b** ~~57.6~~ **57.5**	6.6 b 56.3
	GBR	51	17	TIO	PESSEV Efficacy	33.4 a a	**28.8 a** ~~13.8~~ **14.0** **a**	**26.4 a** **21.0** **a**	27.4 a 18.0 a
	GBR	33	15		PESSEV Efficacy	17.81 a	**6.41 f** **64.0**	**6.88 f** **61.4**	11.45 b 35.7
	FRA	43	13		PESSEV Efficacy	87.6 a	**54.7 cd** ~~37.6~~ **37.5**	**52.1 d** **40.5**	57.9 cd 33.9
Mean efficacy				7	*Mean* Min Max	*39.1* 15.1 87.6	***45.5*** ~~13.8~~ **14.0** ~~64.9~~ **64.7**	***46.3*** **21.0** **68.6**	*38.1* 18.0 56.3
LEAF4 early	GBR	51	17		PESSEV Efficacy	69.1 a	**41.3 bc** **40.2**	**36.2 c** **47.6**	38.3 c 44.6
	FRA	32	14		PESSEV Efficacy	11.2 a	**5.6 b** ~~50.0~~ **50.3**	**3.8 b** ~~66.1~~ **66.4**	3.3 b 70.5
	DEU	49	14		PESSEV Efficacy	11.2 a	**2.4 c** ~~78.6~~ **78.2**	**4.9 bc** ~~56.3~~ **56.5**	2.8 c 75.0
	FRA	38	15	TA	PESSEV Efficacy	33.2 a a	**5.9 b** ~~82.2~~ **82.1** **b**	**6.5 b** ~~80.4~~ **80.5** **b**	6.5 b 80.4 b
	DEU	43	15		PESSEV Efficacy	5.20 a	**0.94 c** ~~81.9~~ **82.0**	**2.41 bc** ~~53.7~~ **53.6**	1.19 bc 77.1
Mean efficacy				5	*Mean* Min Max	*26.0* 5.2 69.1	***66.6*** **40.2** ~~82.2~~ **82.1**	~~*60.8*~~ ***60.9*** **47.6** ~~80.4~~ **80.5**	*69.5* 44.6 80.4

At an early assessment date, when considering 1 assessment on **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a level of control of 49.4% and 48.1% efficacy respectively, but numerically higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (21%) although no statistical difference was observed.

For **leaf 2**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached 59.7% and 60.3% efficacy on an average of seven individual assessments, equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (62.6%). No statistical difference was observed in five individual assessments. In one assessment, the efficacy of CA3664 was statistically superior to that of CA3642 applied at both rates, in one trial the performance of CA3664 obtained higher efficacy than CA3642 applied at 1.2 L/ha.

When considering **leaf 3**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached 45.5% and 46.3% efficacy on an average of seven individual assessments but higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (38.1%). No statistical difference was observed in five individual assessments. In the other two assessments, the efficacy of CA3642 applied at both rates was statistically superior to that of CA3664.

For **leaf 4**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached 66.6% and 60.8% efficacy on an average of five individual assessments, equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (69.5%). No statistical difference was observed in all the five individual assessments.

Table 3.2-50: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SEPTTR in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	FRA	62	32	TS	PESSEV Efficacy	67.2 a a	**14.2 b** **78.9** **bc**	**12.1 b** **82.0** **c**	20.6 b 69.3 bc
	FRA	57	30		PESSEV Efficacy	17.6 a	**5.3 bc** ~~69.9~~ **69.8**	**5.9 bc** ~~66.5~~ **66.4**	6.5 bc 63.1
	FRA	56	33	TL	PESSEV Efficacy	8.15 a a	**0.65 c** **92.0** **ef**	**1.08 c** ~~86.7~~ **86.8** **de**	1.80 c 77.9 cd
Mean efficacy				3	*Mean* Min Max	*31.0* 8.2 67.2	***80.3*** ~~69.9~~ **69.8** **92.0**	***78.4*** ~~66.5~~ **66.4** ~~86.7~~ **86.8**	*70.1* 63.1 77.9
LEAF2 late	FRA	57	30		PESSEV Efficacy	68.7 a	**10.4 d** **84.9**	**12.1 d** **82.4**	14.2 cd 79.3
	DEU	57	29	TL	PESSEV Efficacy	10.2 a a	**2.0 d** ~~80.4~~ **80.2** **e**	**2.8 cd** ~~72.5~~ **72.8** **cd**	2.0 d 80.4 e
	DEU	45	30	TA	PESSEV Efficacy	4.5 a a	**0.5 b** ~~88.9~~ **88.6** c	**0.6 b** **86.7** c	0.6 b 86.7 c
	DEU	60	25	TL	PESSEV Efficacy	8.8 a a	**1.0 d** ~~88.6~~ **89.2** **cd**	**1.4 cd** ~~84.1~~ **84.6** **cd**	2.0 cd 77.3 bcd
	FRA	62	32		PESSEV Efficacy	100.0 a	**67.6 def** **32.4**	**59.8 f** **40.2**	80.4 cd 19.6
	FRA	56	33	TL	PESSEV Efficacy	35.43 a a	**3.80 cd** **89.3** **de**	**4.19 cd** **88.2** **de**	7.48 c 78.9 c

Leaf level assm. Timing	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				6	*Mean* Min Max	*37.9* 4.5 100.0	***77.4*** **32.4** **89.3**	***75.7*** **40.2** **88.2**	*70.4* 19.6 86.7
LEAF3 late	FRA	38	15		PESSEV Efficacy	5.2 a	**0.2 c** **96.2**	**0.5 c** ~~90.4~~ **90.2**	0.3 c 94.2
Mean efficacy				1		*5.2*	***96.2***	~~*90.4*~~ ***90.2***	*94.2*

At a late assessment date, when considering **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (80.3% and 78.4% efficacy) on an average of three individual assessments higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (70.1%). No statistical difference was observed in two individual assessments. In the other assessment, the efficacy of CA3642 applied at 1.4 L/ha was statistically superior compared to CA3664.

For **leaf 2** at a late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (77.4% and 75.7% efficacy) on an average of six individual assessments higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (70.4%). No statistical difference was detected in the individual assessments between CA3642 applied at 1.4 L/ha and CA3664. In one trial, CA3642 applied at both rates reached statistically superior efficacy compared to CA3664. In one trial only, CA3642 applied at 1.2 L/ha was statistically inferior compared to CA3664.

At a late assessment date **for leaf 3**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (96.2% and 90.4% efficacy) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (94.2%). No statistical difference was observed in the individual assessment.

Table 3.2-51: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SEPTTR in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Very late assessment – Maritime EPPO zone

Leaf level assm. Timing	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	GBR	71	41		PESSEV Efficacy	37.4 a	**11.1 d** ~~70.3~~ **70.4**	**11.8 d** ~~68.4~~ **68.6**	11.7 d 68.7
	FRA	70	43	TA	PESSEV Efficacy	98.9 a a	**58.95 ef** **40.4** **e**	**58.75 ef** **40.6** **e**	56.24 f 43.1 e
	GBR	59	42		PESSEV Efficacy	9.9 a	**4.8 d** ~~51.5~~ **51.6**	**5.4 bc** ~~45.5~~ **45.6**	5.6 b 43.4
	FRA	58	41		PESSEV Efficacy	14.9 a	**5.9 c** ~~60.4~~ **60.3**	**6.9 bc** ~~53.7~~ **54.1**	6.7 bc 55.0

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC 1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
				TA		a	**c**	**bc**	bc
	GBR	74	40		PESSEV Efficacy	22.4 a	**6.1 c** ~~72.8~~ **72.7**	**8.4 bc** ~~62.5~~ **62.3**	6.7 c 70.1
	GBR	65	43	TA	PESSEV Efficacy	6.26 a a	**0.20 d** **96.8** **c**	**1.57 bc** ~~74.9~~ **75.0** **b**	0.77 cd 87.7 bc
	GBR	59	41		PESSEV Efficacy	10.0 a	**2.5 c** ~~75.0~~ **74.8**	**3.1 bc** ~~69.0~~ **69.1**	4.3 b 57.0
	FRA	62	44	TA	PESSEV Efficacy	10.5 a a	**0.5 c** ~~95.2~~ **95.1** **c**	**0.8 c** ~~92.4~~ **92.7** **c**	0.7 c 93.3 c
	DEU	72	37	TL	PESSEV Efficacy	10.8 a a	**2.6 cd** ~~75.9~~ **75.7** **cd**	**4.0 bcd** ~~63.0~~ **63.1** **bc**	5.5 bc 49.1 b
Mean efficacy				9	*Mean* Min Max	*24.6* 6.3 98.9	***70.9*** **40.4** **96.8**	***63.3*** **40.6** ~~92.4~~ **92.7**	*63.1* 43.1 93.3
LEAF2 very late	GBR	59	42		PESSEV Efficacy	21.4 a	**10.1 f** **52.8**	**9.7 f** **54.7**	10.0 f 53.3
	GBR	74	40		PESSEV Efficacy	52.9 a	**23.3 c** ~~56.0~~ **55.9**	**22.9 c** **56.7**	29.9 c 43.5
	GBR	65	43		PESSEV Efficacy	14.69 a	**1.19 b** **91.9**	**2.02 b** ~~86.2~~ **86.3**	2.11 b 85.6
	GBR	59	41		PESSEV Efficacy	23.9 a	**8.0 f** ~~66.5~~ **66.6**	**14.0 d** ~~41.4~~ **41.6**	12.9 de 46.0
	FRA	54	36		PESSEV Efficacy	37.9 a	**14.7 bc** ~~61.2~~ **61.3**	**14.1 bc** ~~62.8~~ **62.7**	14.3 bc 62.3
	DEU	72	37		PESSEV Efficacy	22.1 a	**12.5 c** ~~43.4~~ **43.5**	**15.1 bc** ~~31.7~~ **31.9**	13.8 bc 37.6
Mean efficacy				6	*Mean* Min Max	*28.8* 14.7 52.9	***62.0*** ~~43.4~~ **43.5** **91.9**	~~55.6~~ ***55.7*** ~~31.7~~ **31.9** ~~86.2~~ **86.3**	*54.7* 37.6 85.6
LEAF3 very late	GBR	74	40		PESSEV Efficacy	71.6 a	**34.4 c** **52.0**	**29.8 c** **58.4**	38.4 c 46.4
	GBR	65	43		PESSEV Efficacy	27.88 a	**7.96 b** **71.4**	**9.24 b** **66.9**	10.49 b 62.4
	FRA	56	33	TA	PESSEV Efficacy	70.69 a a	**9.66 de** **86.3** **def**	**10.00 de** **85.9** **def**	15.88 cd 77.5 cd

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Mean efficacy				3	*Mean*	*56.7*	***69.9***	***70.4***	*62.1*
					Min	27.9	**52.0**	**58.4**	46.4
					Max	71.6	**86.3**	**85.9**	77.5

At a very late assessment date, when considering **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached 70.9% and 63.3% efficacy on an average of nine individual assessments higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (63.1%). The efficacy of CA3642 applied at 1.4 L/ha was statistically higher to CA3664 in the 3 out of 9 individual assessments.

For **leaf 2** at a very late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached 62% and 55.6% efficacy on an average of six individual assessments higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (54.7%). The efficacy of CA3642 applied at 1.4 L/ha was statistically higher to CA3664 in the 1 out of 6 individual assessments.

At a very late assessment date for **leaf 3**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (69.9% and 70.4% efficacy) on an average of three individual assessments higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (62.1%). No statistical difference was observed in the individual assessments.

TRZAW – SEPTTR – North-East EPPO zone

The results of 6 trials are presented in order to justify the active substances ratio for the control of *Zymoseptoria tritici* (SEPTTR) under the conditions of the North-East EPPO climatic zone. The trials were carried out in Poland (6) in 2019. The first application took place at crop stage BBCH 31 - 33 and the second application was done 15 - 52 days later, at BBCH 43 – 59.

Table 3.2-52: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SEPTTR in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Early assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF2 early	POL	45	15	TL	PESSEV Efficacy	23.8 a a	**0.1 b** ~~99.6~~ **99.7** **c**	**0.6 b** ~~97.5~~ **97.6** **c**	0.3 b 98.7 c
	POL	68	15	TA	PESSEV Efficacy	5.4 a a	**1.1 b** ~~79.6~~ **80.6** **b**	**1.2 b** ~~77.8~~ **77.4** **b**	1.6 b 70.4 b
	POL	67	15	TA	PESSEV Efficacy	5.1 a a	**0.7 b** ~~86.3~~ **86.6** **b**	**0.7 b** ~~86.3~~ **86.9** **b**	0.9 b 82.4 b

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				*3*	*Mean Min Max*	*11.4 5.1 23.8*	*~~88.5~~* ***89.0*** *~~79.6~~* ***80.6*** *~~99.6~~* ***99.7***	*~~87.2~~* ***87.3*** *~~77.8~~* ***77.4*** *~~97.5~~* ***97.6***	*83.8 70.4 98.7*
LEAF3 early	POL	45	15		PESSEV Efficacy	17.4 a	**0.3 b** ~~98.3~~ **98.2**	**0.6 b** ~~96.6~~ **96.4**	0.6 b 96.6
	POL	68	15		PESSEV Efficacy	14.4 a	**4.8 b** ~~66.7~~ **66.6**	**3.3 b** **77.1**	4.5 b 68.8
	POL	67	14		PESSEV Efficacy	6.0 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
	POL	31	16		PESSEV Efficacy	7.8 a	**0.6 f** ~~92.3~~ **92.8**	**1.2 de** ~~84.6~~ **85.0**	0.8 ef 89.7
	POL	67	15		PESSEV Efficacy	14.2 a	**3.3 b** ~~76.8~~ **76.7**	**4.1 b** ~~71.1~~ **71.2**	3.6 b 74.6
Mean efficacy				*5*	*Mean Min Max*	*12.0 6.0 17.4*	*~~86.8~~* ***86.9*** *~~66.7~~* ***66.6*** ***100.0***	***85.9*** *~~71.1~~* ***71.2*** ***100.0***	*85.9 68.8 100.0*

At an early assessment date, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (88.5% and 87.2% efficacy on an average of 3 assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (83.8%). No statistical difference was observed in the individual assessments.

For **leaf 3**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (86.8% and 85.9% efficacy on an average of 5 assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (85.9%). No statistical difference was observed between CA3642 and CA3664 in the individual assessments.

Table 3.2-53: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SEPTTR in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Late assessment – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC CA3642 300 g/L SC**		**CA3664 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	POL	84	32	TL	PESSEV Efficacy	18.6 a a	**1.2 d** ~~93.5~~ **93.6** **c**	**1.9 cd** ~~89.8~~ **90.1** **c**	2.5 cd 86.6 c
	POL	87	34	TA	PESSEV Efficacy	24.1 a a	**3.8 b** **84.2** **b**	**5.3 b** ~~78.0~~ **78.2** **b**	5.8 b 75.9 b

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 300 g/L SC CA3642 300 g/L SC		CA3664 350 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
	POL	85	32		PESSEV Efficacy	17.5 a	**3.0 c** ~~82.9~~ **83.1**	**3.9 c** **77.7**	3.0 c 82.9
	POL	53	23		PESSEV Efficacy	9.2 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*4*	*Mean* Min *Max*	*17.4* *9.2* *24.1*	***90.2*** ~~82.9~~ ***83.1*** ***100.0***	~~86.4~~ ***86.5*** ***77.7*** ***100.0***	*86.3* *75.9* *100.0*
LEAF2 late	POL	53	23		PESSEV Efficacy	9.6 a	**0.0 b** **100.0**	**0.6 b** ~~93.8~~ **93.5**	0.5 b 94.8
	POL	85	32		PESSEV Efficacy	23.3 a	**5.3 c** ~~77.3~~ **77.7**	**5.9 c** ~~74.7~~ **75.0**	7.1 c 69.5
	POL	84	32	TL	PESSEV Efficacy	45.0 a a	**4.4 b** ~~90.2~~ **90.3** **d**	**5.9 b** **86.9** **cd**	5.6 b 87.6 cd
Mean efficacy				*3*	*Mean* Min Max	*26.0* *9.6* *45.0*	~~89.2~~ ***89.3*** ~~77.3~~ ***77.7*** ***100.0***	***85.1*** ~~74.7~~ ***75.0*** ~~93.8~~ ***93.5***	*84.0* *69.5* *94.8*

At a late assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (90.2% and 86.4% efficacy on an average of 4 assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (86.3%). No statistical difference was observed in the individual assessments.

For **leaf 2**, at a late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (89.2% and 85.1% efficacy on an average of 3 assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (84%). No statistical difference was observed in the individual assessments.

Table 3.2-54: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SEPTTR in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Very late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	POL	57	35		PESSEV Efficacy	10.9 a	**1.8 e** ~~83.5~~ **83.7**	**3.6 d** ~~67.0~~ **67.1**	3.4 d 68.8
	POL	51	36		PESSEV Efficacy	7.5 a	**1.0 e** **86.7**	**2.2 d** ~~70.7~~ **70.5**	3.4 c 54.7
Mean efficacy				*2*	*Mean* Min Max	*9.2* 7.5 10.9	~~85.1~~ ***85.2*** ~~83.5~~ **83.7** **86.7**	***68.8*** ~~67.0~~ **67.1** ~~70.7~~ **70.5**	*61.7* 54.7 68.8

At a very late assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached 85.1% and 68.8% efficacy on an average of 2 assessments respectively, higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (61.7%). For both assessments, CA3642 at 1.4 L/ha achieved significantly higher efficacy compared to CA3664, and that is also the case for CA3642 at 1.2 L/ha for one assessment.

Comments of zRMS:

20 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 and CA3664 achieved comparable results after 2 applications. The moderate effectiveness has been noted in the most trials. The justification of ratio was visible in the late and very late assessment with results of 78-80% on L1 and 70% on L2. CA3664 achieved 70% on L1 and 62% on L2. In the North-East EPPO zone, the justification of ratio was detected in the very late assessment. The test mixture presented the mean efficacy of 69-85% whilst 62% for the reference product. In conclusion, the composition of AZX and PTZ at claimed dose rate in CA3642 is justified for control of SEPTTR in winter wheat.

Winter Wheat (TRZAW) – Powdery mildew (ERYSGR/T – *Blumeria graminis*)

TRZAW – ERYSGR/T – Maritime EPPO zone

The results of 5 trials are presented in order to justify the active substances ratio for the control of *Blumeria graminis* (ERYSGR/T) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in France (2), Germany (2) and Great Britain (1) in 2019. The first application took place at crop stage BBCH 31 - 37 and the second application was done 27 - 35 days later, at BBCH 39 – 59.

Table 3.2-55: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSGR/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Early assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 early	~~FRA~~	~~43~~ -	~~16~~	- -	~~PESSEV~~ ~~Efficacy~~	~~5.5 b~~	~~**2.7 cd**~~ ~~**50.9**~~	~~**3.3 cd**~~ ~~**40.0**~~	~~4.1 c~~ ~~25.5~~
	GBR	49	15		PESSEV Efficacy	5.1 b	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	FRA	43	13		PESSEV Efficacy	6.4 b	**1.6 cd** **75.0**	**1.9 cd** ~~70.3~~ **70.1**	2.9 c 54.7
Mean efficacy				3	*Mean* Min Max	~~5.7~~ 5.8 5.1 6.4	~~*75.3*~~ ***87.5*** ~~50.9~~ **75.0** **100.0**	~~*70.1*~~ ***85.1*** ~~40.0~~ **70.1** **100.0**	~~*60.0*~~ *77.4* ~~25.5~~ 54.7 100.0
LEAF3 early	GBR	49	15	 TA	PESSEV Efficacy	13.3 a a	**1.2 d** ~~91.0~~ **90.7** **d**	**1.5 cd** ~~88.7~~ **88.6** **d**	2.2 cd 83.5 cd
	DEU	49	14		PESSEV Efficacy	15.1 a	**0.0 c** **100.0**	**0.2 c** **98.7**	0.0 c 100.0
Mean efficacy				2	*Mean* Min Max	*14.2* 13.3 15.1	~~*95.5*~~ ***95.4*** ~~91.0~~ **90.7** **100.0**	***93.7*** ~~88.7~~ **88.6** **98.7**	*91.7* 83.5 100.0
LEAF4 early	DEU	43	15		PESSEV Efficacy	10.1 a	**1.5 f** ~~85.1~~ **85.7**	**1.8 ef** ~~82.2~~ **82.6**	0.5 g 95.0

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
				TA		a	f	ef	g
	DEU	49	14		PESSEV Efficacy	25.8 a	**0.1 e** ~~99.6~~ **99.7**	**1.0 cde** ~~96.1~~ **96.0**	0.2 e 99.2
Mean efficacy				~~4~~ 2	*Mean* Min Max	*18.0* 10.1 25.8	~~*92.4*~~ ***92.7*** ~~85.1~~ **85.7** ~~99.6~~ **99.7**	~~*89.2*~~ ***89.3*** ~~82.2~~ **82.6** ~~96.1~~ **96.0**	*97.1* 95.0 99.2

At an early assessment date, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (75.3% and 70.1% efficacy on an average of 3 assessments) higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (60%). No statistical difference was observed in the individual assessments.

For leaf 3, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (95.5% and 93.7% efficacy on an average of 2 assessments) higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (91.7%). No statistical difference was observed in the individual assessments.

At an early assessment date for leaf 4, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (92.4% and 89.2% efficacy on an average of 2 assessments) equivalent (rule of 10%) to the level of efficacy achieved by CA3664 applied at 1 L/ha (97.1%).

There is no statistical difference in one individual assessment. However, in the other assessment, CA3642 applied at both rates achieved significantly lower efficacy than CA3664.

Table 3.2-56: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSGR/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	DEU	60	25		PESSEV Efficacy	4.1 a	**0.2 c** ~~95.1~~ **94.5**	**0.6 c** ~~85.4~~ **85.8**	0.4 c 90.2
Mean efficacy				1		*4.1*	~~*95.1*~~ ***94.5***	~~*85.4*~~ ***85.8***	*90.2*
LEAF2 late	~~FRA~~ ~~-~~	~~57~~ ~~-~~	~~30~~ ~~-~~	~~-~~ ~~-~~	~~PESSEV~~ ~~Efficacy~~	~~4.4 bc~~	~~**3.2 bcd**~~ ~~27.3~~	~~**3.1 bcd**~~ ~~29.5~~	~~3.9 bcd~~ ~~11.4~~
	DEU	60	25		PESSEV Efficacy	11.4 a	**1.3 de** ~~88.6~~ **88.7**	**2.0 de** ~~82.5~~ **82.4**	2.1 de 81.6
~~*Mean efficacy*~~				~~2~~ ~~-~~ ~~-~~	~~*Mean*~~ ~~Min~~ ~~Max~~	~~*7.9*~~ ~~4.4~~ ~~11.4~~	~~*57.9*~~ ~~27.3~~ ~~88.6~~	~~*56.0*~~ ~~29.5~~ ~~82.5~~	~~*46.5*~~ ~~11.4~~ ~~81.6~~

At a late assessment date, when considering **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (95.1% and 85.4% efficacy) compared to the level of efficacy achieved by CA3664 applied at 1 L/ha (90.2%). No statistical difference was observed in the individual assessment.

For **leaf 2**, at a late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a low level of control (57.9% and 56% efficacy on an average of 2 assessments) higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (46.5%). No statistical difference was observed in the individual assessments.

Table 3.2-57: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSGR/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Very late assessment – Maritime EPPO zone

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 very late	DEU	81	46		PESSEV Efficacy	5.2 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1		5.2	***100.0***	***100.0***	*100.0*
LEAF2 very late	DEU	72	37		PESSEV Efficacy	5.4 a	**0.2 b** ~~96.3~~ **96.8**	**0.3 b** ~~94.4~~ **94.9**	0.3 b 94.4
Mean efficacy				1		5.4	~~96.3~~ **96.8**	~~94.4~~ **94.9**	94.4

At a very late assessment date, when considering **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent and same level of control (100% efficacy) compared to the level of efficacy achieved by CA3664 applied at 1 L/ha (100%). No statistical difference was observed in the assessment.
For **leaf 2**, at a very late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (96.3% and 94.4% efficacy) respectively compared to the level of efficacy achieved by CA3664 applied at 1 L/ha (94.4%). No statistical difference was observed in the assessment.

TRZAW – ERYSGR/T – North-East EPPO zone

The results of 1 trial are presented in order to justify the active substances ratio for the control of *Blumeria graminis* (ERYSGR/T) under the conditions of the North-East EPPO climatic zone. The trial was carried out in Poland (1) in 2019. The first application took place at crop stage BBCH 32 and the second application was done 30 days later, at BBCH 59.

Table 3.2-58: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSGR/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Early assessment – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF2 early	POL	45	15		PESSEV Efficacy	10.1 a	**0.0 b** **100.0**	**0.2 b** **98.0**	0.3 b 97.0
Mean efficacy				*1*		*10.1*	***100.0***	***98.0***	*97.0*
LEAF3 early	POL	45	15		PESSEV Efficacy	15.2 a	**0.1 b** ~~99.3~~ **99.2**	**0.4 b** ~~97.4~~ **97.5**	0.3 b 98.0

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				*1*		*15.2*	*~~99.3~~* ***99.2***	*~~97.4~~* ***97.5***	*98.0*

At an early assessment date, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (100% and 98% efficacy on 1 assessment) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (97.0%). No statistical difference was observed.

For **leaf 3**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (99.3% and 97.4% efficacy on 1 assessment) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (98.0%). No statistical difference was observed.

Table 3.2-59: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSGR/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 late	POL	53	23		PESSEV Efficacy	6.8 a	**0.2 b** ~~97.1~~ **97.2**	**0.4 b** ~~94.1~~ **93.5**	0.4 b 94.1
Mean efficacy				*1*		*6.8*	*~~97.1~~* ***97.2***	*~~94.1~~* ***93.5***	*94.1*

At a late assessment date, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (97.1% and 94.1% efficacy on 1 assessment) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (94.1%). No statistical difference was observed.

Comments of zRMS:

5 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 at 1,2-1,4 l/ha achieved good results after 2 applications. Similar effect has been noted for the reference product of CA3664 in most trials. The justification of ratio was visible on L2 in early assessment. The test mixture presented results of 85-88% whilst 77% for the reference product. No significant differences between CA3642 and CA3664 were detected in the North-East EPPO zones. In conclusion, the composition of AZX and PTZ at claimed dose rate in CA3642 is justified for control of ERYSGR in winter wheat.

Winter Wheat (TRZAW) – Brown rust (PUCCRE/T – *Puccinia recondita*)

TRZAW – PUCCRE/T – Maritime EPPO zone

The results of 4 trials are presented in order to justify the active substances ratio for the control of *Puccinia recondita* (PUCCRE/T) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in France (3) and Germany (1) in 2019. The first application took place at crop stage BBCH 31 - 37 and the second application was done 18 - 35 days later, at BBCH 39 – 57.

~~**Table 3.2-60: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCRE/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Early assessment – Maritime EPPO zone**~~

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF2 early	FRA -	43 -	16	- -	PESSEV Efficacy	8.9 a	0.0 b 100.0	0.1 b 98.9	0.0 b 100.0
Mean efficacy				1	-	*8.9*	*100.0*	*98.9*	*100.0*
LEAF3 early	FRA -	43	16 -	- -	PESSEV Efficacy	7.8 a	0.4 d 94.9	0.2 d 97.4	1.0 cd 87.2
Mean efficacy				1	-	*7.8*	94.9	97.4	87.2

~~**At an early assessment date**, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (100% and 98.9% efficacy) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (100%). No statistical difference was observed in the individual assessment.~~

~~For **leaf 3**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (94.9% and 97.4% efficacy) higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (87.2%). No statistical difference was observed in the individual assessments.~~

Table 3.2-61: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCRE/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Late assessment</u> – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	FRA	62	32		PESSEV Efficacy	11.7 a	**0.5 b** **95.7**	**0.3 b** **97.4**	0.4 b 96.6
	~~FRA~~ -	~~57~~	~~30~~ -	- -	~~PESSEV~~ ~~Efficacy~~	~~26.2 a~~	~~0.0 b~~ ~~100.0~~	~~0.1 b~~ ~~99.6~~	~~0.0 b~~ ~~100.0~~
~~*Mean efficacy*~~				~~2~~ - -	~~*Mean*~~ ~~*Min*~~ ~~*Max*~~	~~*19.0*~~ ~~11.7~~ ~~26.2~~	~~*97.9*~~ ~~95.7~~ ~~100.0~~	~~*98.5*~~ ~~97.4~~ ~~99.6~~	~~*98.3*~~ ~~96.6~~ ~~100.0~~
~~LEAF2 late~~	~~FRA~~	~~57~~	~~30~~	-	~~PESSEV~~	~~11.9 a~~	~~0.0 b~~	~~0.0 b~~	~~0.0 b~~

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
		~~-~~		~~-~~	~~Efficacy~~		~~**100.0**~~	~~**100.0**~~	~~100.0~~
~~*Mean efficacy*~~				~~1~~	~~-~~	~~*11.9*~~	~~***100.0***~~	~~***100.0***~~	~~*100.0*~~

At a late assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (~~97.9~~ 95.7% and ~~98.5~~ 97.4% efficacy on an average of ~~2~~ 1 individual assessment~~s~~) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (~~98.3~~ 96.6%). No statistical difference was observed in the individual assessments.

~~For **leaf 2**, at a late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (100% efficacy) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (100%). No statistical difference was observed in the individual assessment.~~

Table 3.2-62: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCRE/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Very late assessment – Maritime EPPO zone

Leaf level assm. Timing	Coun-try	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applica-tions									
LEAF1 very late	FRA	62	44		PESSEV Effica-cy	7.7 a	**0.3 b** ~~96.1~~ **96.3**	**0.0 b** **100.0 99.8**	0.1 b 98.7
	DEU	81	46		PESSEV Effica-cy	19.8 a	**4.9 f** ~~75.3~~ **75.4**	**7.0 ef** **64.6 64.7**	4.4 f 77.8
Mean efficacy				2	*Mean* Min Max	*13.8* 7.7 19.8	~~*85.7*~~ ***85.9*** ~~75.3~~ **75.4** ~~96.1~~ **96.3**	***82.3*** ~~64.6~~ **64.7** ~~100.0~~ **99.8**	*88.2* 77.8 98.7
LEAF2 very late	DEU	72	37		PESSEV Effica-cy	5.9 a	**0.3 cd** ~~94.9~~ **95.6**	**0.8 cd** ~~86.4~~ **85.9**	0.1 d 98.3
Mean efficacy				1		5.9	~~*94.9*~~ ***95.6***	~~*86.4*~~ ***85.9***	*98.3*

At a very late assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (85.7% and 82.3% efficacy on an average of 2 individual assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (88.2%). No statistical difference was observed in the individual assessments.

For **leaf 2**, at a very late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (94.9% and 86.4% efficacy) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (98.3%). No statistical difference was observed in the individual assessment.

TRZAW – PUCCRE/T – North-East EPPO zone

The results of 4 trials are presented in order to justify the active substances ratio for the control of *Puccinia recondita* (PUCCRE/T) under the conditions of the North-East EPPO climatic zone. The trials were carried out in Poland (4) in 2019. The first application took place at crop stage BBCH 30 - 32 and the second application was done 30 - 53 days later, at BBCH 52 – 59.

Table 3.2-63: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCRE/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Early assessment</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applica-tions									
LEAF2 early	POL	45	15		PESSEV Efficacy	7.7 a	**0.1 b** ~~98.7~~ **99.2**	**0.0 b** **100.0**	0.1 b 98.7
Mean effica-cy				*1*		*7.7*	~~98.7~~ ***99.2***	***100.0***	*98.7*
LEAF3 early	POL	45	15		PESSEV Efficacy	15.8 a	**0.1 b** ~~99.4~~ **99.6**	**0.4 b** ~~97.5~~ **97.6**	0.7 b 95.6
Mean effica-cy				*1*		*15.8*	~~99.4~~ ***99.6***	~~97.5~~ ***97.6***	*95.6*

At an early assessment date, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (98.7% and 100% efficacy on 1 assessment) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (98.7%). No statistical difference was observed.

For **leaf 3**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (99.4% and 97.5% efficacy on 1 assessment) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (95.6%). No statistical difference was observed.

Table 3.2-64: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCRE/T in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Late assessment</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applica-tions									
LEAF1 late	POL	84	32		PESSEV Efficacy	8.2 a	**0.5 b** **93.9**	**0.7 b** **91.5**	0.1 b 98.8

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
	POL	87	34	TA	PESSEV Efficacy	16.4 a a	**2.1 c** ~~87.2~~ **87.0** c	**1.7 c** ~~89.6~~ **89.8** c	0.7 c 95.7 c
	POL	85	32	TA	PESSEV Efficacy	14.5 a a	**0.2 c** ~~98.6~~ **98.8** c	**0.2 c** ~~98.6~~ **98.8** c	1.1 c 92.4 c
	POL	53	23		PESSEV Efficacy	4.4 a	**0.0 b 100.0**	**0.1 b** ~~97.7~~ **98.6**	0.1 b 97.7
Mean efficacy				~~4~~ *3*	*Mean* Min Max	*10.9* *4.4* *16.4*	***94.9*** ~~87.2~~ ***87.0*** ***100.0***	***94.4*** ~~89.6~~ ***89.8*** ~~98.6~~ ***98.8***	*96.2* *92.4* *98.8*
LEAF2 late	POL	53	23		PESSEV Efficacy	8.8 a	**0.1 b** ~~98.9~~ **98.6**	**0.3 b** ~~96.6~~ **97.1**	0.2 b 97.7
Mean efficacy				*1*		*8.8*	~~98.9~~ ***98,6***	~~96.6~~ ***97.1***	*97.7*

For **leaf 1**, at a **late assessment date**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (94.9% and 94.4% efficacy on an average of 4 assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (96.2%). No statistical difference was observed in the individual assessments.

At a late assessment date, when considering **leaf 2**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (98.9% and 96.6% efficacy on 1 assessment) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (97.7%). No statistical difference was observed.

Comments of zRMS:

8 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime and North-East EPPO climatic zones, CA3642 and CA3664 achieved comparable effectiveness after 2 applications. No significant differences were observed and the mean efficacy was on high level.

Winter Wheat (TRZAW) – Yellow rust (PUCCST/I – *Puccinia striiformis*)

TRZAW – PUCCST/I – Maritime EPPO zone

The results of 4 trials are presented in order to justify the active substances ratio for the control of *Puccinia striiformis* (PUCCST/I) under the conditions of the Maritime EPPO climatic zone. The trials were carried out in Great Britain (4) in 2019. The first application took place at crop stage BBCH 31 - 35 and the second application was done 18 – 34 days later, at BBCH 39 – 59.

Table 3.2-65: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCST/I in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Early assessment</u> – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 early	GBR	51	17	TA	PESSEV Efficacy	8.5 a a	**0.0 b** **100.0** **b**	**0.6 b** ~~92.9~~ **92.5** **b**	0.9 b 89.4 b
Mean efficacy				1		*8.5*	***100.0***	*~~92.9~~* ***92.5***	*89.4*
LEAF2 early	GBR	51	17		PESSEV Efficacy	6.5 a	**0.0 b** **100.0**	**0.2 b** **96.9**	0.0 b 100.0
Mean efficacy				1		*6.5*	***100.0***	***96.9***	*100.0*
LEAF3 early	GBR	33	15	TA	PESSEV Efficacy	8.54 a a	**1.89 c** **77.9** **b**	**2.19 bc** **74.4** **b**	2.49 bc 70.8 b
Mean efficacy				1		*8.5*	***77.9***	***74.4***	*70.8*

At an early assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (100% and 92.9% efficacy) higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (89.4%). No statistical difference was observed in the individual assessment.

For **leaf 2**, at an early assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (100% and 96.9% efficacy) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (100%). No statistical difference was observed in the individual assessment.

At an early assessment date, for **leaf 3**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (77.9% and 74.4% efficacy) higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (70.8%). No statistical difference was observed in the individual assessment.

Table 3.2-66: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCST/I in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – <u>Late assessment</u> – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	GBR	61	27	TL	PESSEV Efficacy	42.0 a a	**8.6 b** **79.5** **e**	**11.0 b** **73.8** **cde**	14.0 b 66.7 bcd
Mean efficacy				1		*42.0*	***79.5***	***73.8***	*66.7*
LEAF2 late	GBR	61	27		PESSEV Efficacy	82.1 a	**10.9 e** **86.7**	**15.3 de** **81.4**	17.6 cd 78.6
Mean efficacy				1		*82.1*	***86.7***	***81.4***	*78.6*

At a late assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (79.5% and 73.8% efficacy) numerically higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (66.7%). In this assessment, the efficacy of CA3642 applied at 1.4 L/ha was statistically superior compared to CA3664.

For **leaf 2** at a late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached a good level of control (86.7% and 81.4% efficacy) numerically higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (78.6%). The efficacy of CA3642 applied at 1.4 L/ha was statistically superior compared to CA3664 in this individual assessment.

Table 3.2-67: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PUCCST/I in wheat compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different concentration – Very late assessment – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	GBR	74	40		PESSEV	5.6 a	**0.0 c**	**1.4 bc**	1.9 bc
				TA	Efficacy	a	**100.0** c	~~75.0~~ **75.3** abc	66.1 abc
	GBR	59	41		PESSEV	10.2 a	**0.6 e**	**3.9 c**	3.7 c
					Efficacy		~~94.1~~ **94.3**	~~61.8~~ **62.2**	63.7
Mean efficacy				2	*Mean*	*7.9*	~~97.1~~ ***97.2***	~~68.4~~ ***68.8***	*64.9*
					Min	5.6	~~94.1~~ **94.3**	~~61.8~~ **62.2**	63.7
					Max	10.2	**100.0**	~~75.0~~ **75.3**	66.1
LEAF2 very late	GBR	74	40		PESSEV	5.2 a	**0.0 c**	**0.0 c**	0.0 c
					Efficacy		**100.0**	**100.0**	100.0
	GBR	65	43		PESSEV	5.56 a	**0.00 b**	**0.00 b**	0.00 b
					Efficacy		**100.0**	**100.0**	100.0
	GBR	59	41		PESSEV	22.7 a	**9.5 e**	**18.6 b**	12.7 c
					Efficacy		~~58.1~~ **58.4**	~~18.1~~ **18.0**	44.1
Mean efficacy				3	*Mean*	*11.2*	***86.0***	***72.7***	*81.4*
					Min	5.2	~~58.1~~ **58.4**	~~18.1~~ **18.0**	44.1
					Max	22.7	**100.0**	**100.0**	100.0
LEAF3 very late	GBR	65	43		PESSEV	5.86 a	**0.00 b**	**0.00 b**	0.00 b
					Efficacy		**100.0**	**100.0**	100.0
Mean efficacy				1		*5.9*	***100.0***	***100.0***	*100.0*

At a very late assessment date, for **leaf 1**, CA3642 applied at 1.4 L/ha reached an excellent level of control (97.1% efficacy) and at 1.2 L/ha reached a low level of control (68.4% efficacy) on an average of two individual assessments higher than the level of efficacy achieved by CA3664 applied at 1 L/ha (64.9%). There is no statistical difference in one individual assessment. However in the other assessment, the efficacy of CA3642 applied at 1.4 L/ha was statistically superior compared to CA3664.

For **leaf 2**, at a very late assessment date, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an acceptable level of control (86% and 72.7% efficacy on an average of three individual assessments) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (81.4%). No statistical difference was observed in two individual assessments. However in one individual assessment, the efficacy of CA3642 applied at 1.4 L/ha was statistically superior compared to CA3664.

At a very late assessment date, when considering **leaf 3**, CA3642 applied at 1.4 L/ha and at 1.2 L/ha reached an excellent level of control (100% efficacy) equivalent to the level of efficacy achieved by CA3664 applied at 1 L/ha (100%). No statistical difference was observed in the assessment.

Comments of zRMS:

4 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications. Similar effect has been noted for the reference product of CA3664 but slight differences were observed in the late assessment. The test mixture had results of 74-80% on L1 and 81-87% on L2 whilst 67% and 79% for the reference product. No results from the North-East and South-East EPPO zones were presented. In conclusion, the composition of AZX and PTZ at claimed dose rate in CA3642 is justified for control of PUCCST in winter wheat.

Summary of the ratio justification data on cereals

Representative data from winter wheat is provided to support the justification in cereals.

On SEPTTR CA3642 achieved higher mean efficacy at early and late assessment timings on all leaf levels compared to CA3664 in all EPPO zones.

On ERYSGR/ERYSGT efficacy of CA3642 was often comparable with that of CA3664 although higher efficacy of the test product was observed in many assessments.

On PUCCRE/PUCCRT CA3642 was usually comparable with CA3664 although higher efficacy of the test product was observed in some assessments.

On PUCCST CA3642 was usually comparable with CA3664 although higher efficacy of the test product was observed in some assessments.

The results demonstrate there no benefit is derived from the increased weighting of azoxystrobin in the formulation CA3664, compared to the equal weighting with prothioconazole in CA3645. In fact on the more difficult to control pathogens the proposed formulation CA3645 demonstrated overall better efficacy. The data therefore supports the justification for the chosen ratio in the mixture product.

Oilseed rape

According to EPPO standard PP 1/306 (1) General principles for the development of co-formulated mixtures of plant protection products, justification should be provided; "for using mixtures from the point of view of efficacy, their potential advantages and disadvantages, plus an examination of the appropriateness of such mixtures in terms of managing resistance."

Azoxystrobin and prothioconazole are widely known active substances which are on the market since several years. Whilst products containing either azoxystrobin or prothioconazole alone or in combination are approved for use, CA3642 offers the convenience and benefits associated with the use of two complementary and overlapping modes of action of two active ingredients in a single product, with a different ratio to existing products. The new product CA3642 contains 150 g/L of both active ingredients.

In this section, justification is provided regarding the interest of the mixture and the active substances' ratio.

First, the effectiveness of the co-formulated product CA3642 for which registration is sought is compared to authorised products containing either azoxystrobin (CA2702, 250 g/L azoxystrobin, SC) or prothioconazole (CA2445, 250 g/L prothioconazole, EC or PROLINE 275, 275 g/L prothioconazole, EC) alone.

Then, to demonstrate the selection of the mixture ratio, CA3642 is compared to another co-formulation (CA3664) which contains 200 g azoxystrobin and 150 g prothioconazole per litre. Although that formulation is not authorised, the trials are permissible in the preliminary section to compare the efficacy of the different ratios.

Finally, further justification is discussed with reference to resistance management and other benefits.

Mixture justification on oilseed rape

The results of 85 trials carried out from 2019 to 2021 are presented to demonstrate the advantage of using CA3642 compared to products containing just one of the active ingredients.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

The intended application rate for the product CA3642 in oilseed rape is the range 1.0 L/ha - 1.2 L/ha:

- An application of 1.0 L/ha CA3642 equates to 150 g azoxystrobin and 150 g prothioconazole per hectare.
- An application of 1.2 L/ha CA3642 equates to 180 g azoxystrobin and 180 g prothioconazole per hectare.

Efficacy achieved by two applications of CA3642 at both intended dose rates is compared to efficacy achieved by products containing either azoxystrobin or prothioconazole, applied with a comparable amount of the single active ingredient per hectare:

- CA3642 is compared to CA2702 applied at 0.7 L/ha corresponding to 175 g azoxystrobin per hectare.
- CA3642 is compared to either to CA2445 or PECARI 250 EC applied at 0.7 L/ha corresponding to 175 g prothioconazole per hectare.

The analysis is carried out for key representative uses.
The results are presented hereafter for the following diseases and analysed by EPPO zone:

- Alternaria leaf spot – *Alternaria brassicae* (ALTEBA), 25 trials
- Powdery mildew – *Erysiphe cruciferarum* (ERYSCR), 17 trials
- Sclerotinia stem rot – *Sclerotinia sclerotiorum* (SCLESC), 43 trials

Winter oilseed rape (BRSNW)

BRSNW – ALTEBA

<u>Maritime EPPO zone</u>
A total of 7 trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in the Czech Republic (1 trial), Germany (5 trials) and Great Britain (1 trial) between 2019 and 2021.
In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 50-55 and the second application was done 19-41 days later, at BBCH 65.

A summary of the efficacy of CA3642 applied twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 or PECARI 250 EC (prothioconazole), both applied at 175 g a.s./ha, against ALTEBA in BRSNW in the Maritime EPPO zone is presented in Table 3.2-68. Data from individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**.

Across 3 trials (including 5 data sets), the test product CA3642 achieved a mean efficacy of 76% on the leaves when applied at both rates of 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) and 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole/ha), which was identical to that achieved by CA2702 and the prothioconazole solo products (76%).
Across 4 trials on the pods, CA3642 gave a higher level of efficacy compared to CA2702 with 91% and 90% efficacy for CA3642 at 1.2 L and 1.0 L/ha, respectively, and 82% efficacy for CA2702, with both rates of CA3642 being statistically comparable to CA2702 in 2 trials and significantly more effective in 2 trials. Prothioconazole alone achieved 89% efficacy across the 4 trials which is statistically comparable to both rates of CA3642 in 3 trials and significantly less effective in 1 trial.
On the stems across 2 trials, the test product CA3642 achieved a mean efficacy of 83% and 78% when applied at 1.2 L/ha and 1.0 L/ha, respectively, which was slightly more effective than that given by CA2702 (73%) and comparable to prothioconazole alone (79%). Both rates of CA3642 are statistically comparable to prothioconazole alone in both trials, and statistically comparable to CA2702 in 1 trial, being significantly more effective in the other trial.

Overall, there is a clear benefit for efficacy on the pods and stems from treatment with CA3642 compared to azoxystrobin alone.

North-East EPPO zone
A total of 10 trials from the North-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in Latvia (3 trials) or Poland (7 trials) between 2019 and 2021.
In trials where both applications were conducted in the spring, the first application took place at crop stage BBCH 33-55 and the second application was done 22-46 days later, at BBCH 65-69.
In 1 trial where the first application was conducted in the autumn and the second application was conducted in the spring, the first application took place at crop stage BBCH 15 and the second application was done 206 days later, at BBCH 69.

A summary of the efficacy of CA3642 applied once or twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 (prothioconazole), both applied at 175 g a.s./ha, against ALTEBA in BRSNW in the North-East EPPO zone is presented in
Table 3.**2**-**69**. Data from individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**.

One application
Data are available to compare the efficacy of one application of both rates of CA3642 with that of CA2702 in 1 trial on the leaves.

After one spring application, CA3642 applied at 1.2 L and 1.0 L/ha achieved 95% and 96% efficacy, respectively, at 22 DA-A, compared to 94% efficacy for CA2702. There were no significant differences between treatments.
Two applications
Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 in 2 trials on the leaves at early timings, 4 trials on the leaves at later timings and 3 trials on the pods.
After 2 spring applications at early assessment timings across 2 trials, CA3642 achieved 95% efficacy on the leaves when applied at both 1.2 L and 1.0 L/ha, compared to 92% efficacy for CA2702; there were significant differences between the treatments in either trial.
At later timings on the leaves across 4 trials, 2 spring applications of CA3642 achieved 84% and 81%

efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 83% efficacy for CA2702. There were significant differences between treatments in any of the 4 trials.

On the pods across 3 trials, 2 spring applications of CA3642 achieved 91% and 88% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 83% efficacy for CA2702. There were significant differences between treatments in any of the 3 trials.

Data are available to compare the efficacy of both rates of CA3642 with that of CA2702 and CA2445 across 2 trials at the later timings on the leaves, across a total of 3 trials on the pods and across a total of 5 trials on the stems.

Across 2 trials (at later timings) on the leaves, 2 spring applications of CA3642 achieved 73% and 71% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 75% efficacy for CA2702 and 65% efficacy for CA2445. There were no significant differences between treatments in both trials.

Across 2 trials on the pods, 2 spring applications of CA3642 achieved 91% and 84% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 89% efficacy for CA2702 and 89% efficacy for CA2445, with no significant differences between treatments in either trial.
In 1 trial on the pods, 2 split-season applications of CA3642 achieved 88% and 75% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 87% efficacy for CA2702 and 90% efficacy for CA2445, with no significant differences between treatments.

Across 4 trials on the stems, 2 spring applications of CA3642 achieved 94% and 92% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 92% efficacy for CA2702 and 84% efficacy for CA2445, with no significant differences between treatments in any of the 4 trials.
In 1 trial on the stems, 2 split-season applications of CA3642 achieved 88% and 82% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 86% efficacy for CA2702 and 86% efficacy for CA2445, with no significant differences between treatments.

Overall, there is a clear benefit for efficacy on the leaves, pods and stems from treatment with two spring applications of CA3642 compared to prothioconazole alone. There was also a benefit on the pods and stems from treatment with two spring applications of CA3642 compared to azoxystrobin alone.

South-East EPPO zone
A total of 8 trials from the South-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in Hungary (4 trials), Romania (2 trials) or Slovakia (2 trials) between 2019 and 2021.
In trials where both applications were conducted in the spring, the first application took place at crop stage BBCH 35-55 and the second application was done 21-35 days later, at BBCH 65-67.
In 2 trials where the first application was conducted in the autumn and the second application was conducted in the spring, the first application took place at crop stage BBCH 16-17 and the second application was done 185-197 days later, at BBCH 65.

A summary of the efficacy of CA3642 applied twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 (prothioconazole), both applied at 175 g a.s./ha, against ALTEBA in BRSNW in the South-East EPPO zone is presented in

Table 3**.2-70**. ~~Data from individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**~~

One application
Data are available to compare the efficacy of one application of both rates of CA3642 with that of CA2702 and CA2445 in 2 trials on the leaves.

Across 2 trials, CA3642 achieved 99% efficacy on the leaves when applied once at both 1.2 L and 1.0 L/ha, compared to 99.5% efficacy for both CA2702 and CA2445. There were no significant differences between treatments.

Two applications

Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 in 3 trials on the leaves at early timings, 4 trials on the leaves at later timings and a total of 8 trials on the pods.

After 2 applications at early assessment timings across 3 trials, CA3642 achieved 90% and 82% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 78% efficacy for CA2702. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 2 trials and significantly more effective in 1 trial.
At later assessment timings across 4 trials, CA3642 achieved 91% and 88% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 80% efficacy for CA2702. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 2 trials and significantly more effective in 2 trials.
Across 8 trials on the pods, CA3642 achieved 86% and 82% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 73% efficacy for CA2702. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 5 trials, the higher rate was significantly more effective in 3 trials while the lower 1.0 L/ha rate was significantly more effective in 2 trials and significantly less effective in 1 trial.

Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 and CA2445 in 2 trials on the leaves at early timings, 3 trials on the leaves at later timings, a total of 5 trials on the pods, 1 trial at an early timing on the stems and 3 trials at later timings on the stems.

After 2 spring applications at early assessment timings across 2 trials, CA3642 achieved 89% and 83% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 81% efficacy for CA2702 and 96% efficacy for CA2445. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 1 trial and significantly more effective in 1 trial. The efficacy for both rates of CA3642 was statistically comparable to that of CA2445 in 1 trial and significantly less effective in 1 trial.
At later assessment timings across 3 trials, CA3642 achieved 92% and 90% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 83% efficacy for CA2702 and 92% for CA2445. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 1 trial and significantly more effective in 2 trials. Both rates of CA3642 were statistically comparable to CA2445 in all 3 trials.
Across 3 trials on the pods, two spring applications of CA3642 achieved 98% and 95% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 83% efficacy for CA2702 and 94% efficacy for CA2445. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 2 trials and significantly more effective in 1 trial. Both rates of CA3642 were statistically comparable to CA2445 in all 3 trials.
Across 2 trials on the pods, two split-season applications of CA3642 achieved 73% and 66% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 64% efficacy for CA2702 and 47% efficacy for CA2445. The efficacy for the higher 1.2 L/ha rate of CA3642 was statistically comparable to that of CA2702 and CA2445 in both trials. Compared to both CA2702 and CA2445, the lower 1.0 L/ha rate of CA3642 was statistically comparable in 1 trial and significantly less effective in 1 trial.
In 1 trial on the stems, two spring applications of CA3642 achieved 94% and 91% efficacy when applied at 1.2 L and 1.0 L/ha, respectively, compared to 96% efficacy for CA2702 and 97% efficacy for CA2445. There were no significant differences between treatments.

At later timings across 3 trials, two spring applications of CA3642 achieved 94% and 89% efficacy on the stems when applied at 1.2 L and 1.0 L/ha, respectively, compared to 75% efficacy for CA2702 and 88% efficacy for CA2445. The efficacy for both rates of CA3642 was statistically comparable to that of CA2702 in 1 trial and significantly more effective in 2 trials. Both rates of CA3642 were statistically comparable to CA2445 in 2 trials and significantly more effective in 1 trial.

Overall, there is a clear benefit for efficacy on the leaves, pods and stems from treatment with two applications of CA3642 compared to azoxystrobin alone that was particularly evident on the pods and stems, and the benefits were greater after 2 spring applications. CA3642 applied at the higher rate of 1.2 L/ha provides a benefit compared to prothioconazole alone.

Table 3.2-68: Efficacy of CA3642 against ALTEBA in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Maritime EPPO zone

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**[a]	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 250 g/L SC**	**Summarized PTZ products* 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**Summarized PTZ products***	**CA2702**	**Summarized PTZ products***
Efficacy after 2 applications													
LEAF	95-102	72-76	3	***Mean***	***16.8***	***76.2***	***76.4***	***76.1***	***76.0***	5 data sets =	5 data sets =	5 data sets =	5 data sets =
				Min	6.6	28.7	29.3	28.2	27.9				
				Max	33.7	100.0	100.0	100.0	100.0				
POD	94-102	55-76	4	***Mean***	***36.1***	***90.9***	***89.8***	***81.9***	***88.9***	2=	3=	2=	3=
				Min	15.4	76.0	75.0	49.5	75.2	2>	1>	2>	1>
				Max	66.1	100.0	100.0	100.0	100.0				
STEM	109-112	73	2	***Mean***	***18.1***	***83.4***	***78.1***	***72.5***	***79.2***	1=	2=	1=	2=
				Min	17.4	78.0	77.3	55.9	77.1	1>		1>	
				Max	18.8	88.9	78.8	89.2	81.2				

*CA2445 or PECARI 250 EC

Table 3.2-69: Efficacy of CA3642 against ALTEBA in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – North-East EPPO zone

Part Rated	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**	**CA3642 at 1.0 L/ha compared to**

				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
Efficacy after 1 application													
LEAF	22	-	1	***Mean***	***10.7***	***95.3***	***96.3***	***94.4***		1=		1=	
Efficacy after 2 applications													
LEAF early	43-44	21	2	***Mean*** Min Max	***11.1*** 7.5 14.7	***95*** 93.3 96.6	***95*** 94.7 95.2	***92.3*** 89.3 95.2		2=		2=	
LEAF late	58-81	36-50	4	***Mean*** Min Max	***9.7*** 5.4 20.3	***84.4*** 50 97	***81.1*** 50 95.1	***83*** 57.4 95.6		4=		4=	
			2	***Mean*** Min Max	***6.5*** 5.4 7.6	***73*** 50 96.1	***71.1*** 50 92.1	***74.8*** 57.4 92.1	***65*** 35.2 94.7	2=	2=	2=	2=
POD	58-256	36-54	4	***Mean*** Min Max	***9.7*** 5.2 21.3	***90.3*** 80.8 97.7	***84.4*** 75 94.8	***83.6*** 61.5 94.8		4=		4=	
POD	58-84	36-54	3***	***Mean*** Min Max	***10.7*** 5.2 21.3	***91*** 80.8 97.7	***87.6*** 75 94.8	***82.5*** 61.5 94.8		3=		3=	
			2***	***Mean*** Min Max	***6.2*** 5.6 6.8	***91.4*** 88.2 94.6	***83.9*** 75 92.9	***88.9*** 86.8 91.1	***88.6*** 87.5 89.7	2=	2=	2=	2=
POD	256	50	1**	***Mean***	***6.8***	***88.2***	***75***	***86.8***	***89.7***	1=	1=	1=	1=
STEM	81-256	48-56	5	***Mean*** Min Max	***7.1*** 4.2 10.8	***92.4*** 88 97.2	***90.1*** 81.7 97.2	***91.1*** 86 95.4	***84.5*** 78.7 94.4	5=	5=	5=	5=
STEM	81-85	48-56	4***	***Mean*** Min Max	***7.7*** 4.2 10.8	***93.5*** 89.5 97.2	***92.1*** 81.7 97.2	***92.4*** 88.4 95.4	***84.2*** 78.7 94.4	4=	4=	4=	4=
STEM	256	50	1**	***Mean***	***5***	***88***	***82***	***86***	***86***	1=	1=	1=	1=

Table 3.2-70: Efficacy of CA3642 against ALTEBA in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – South-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTD[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 gPTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	CA2702	CA2445	CA2702	CA2445
Efficacy after 1 application													
LEAF	21-35	-	2	***Mean***	***8.5***	***99***	***99.3***	***99.5***	***99.5***	2=	2=	2=	2=
				Min	6	98	98.6	98.9	99.1				
				Max	11.1	100	100	100	100				
Efficacy after 2 applications													
LEAF early	35-56	14-28	3	***Mean***	***11.1***	***89.6***	***81.7***	***78.4***		2=		2=	
				Min	9	82.1	75.8	68.4		1>		1>	
				Max	14.8	95.5	90.5	93.5					
			2	***Mean***	***12.2***	***88.8***	***83.2***	***81***	***95.9***	1=	1=	1=	1=
				Min	9.5	82.1	75.8	68.4	95.8	1>	1<	1>	1<
				Max	14.8	95.5	90.5	93.5	95.9				
LEAF late	60-77	39-56	4	***Mean***	***14.9***	***91.1***	***85.9***	***80.3***		2=		2=	
				Min	10.4	86.8	74.2	71		2>		2>	
				Max	21.9	96.6	94.1	91.5					
			3	***Mean***	***14.7***	***92.2***	***89.8***	***83.4***	***92.1***	1=	3=	1=	3=
				Min	10.4	86.8	86.4	78.8	87.9	2>		2>	
				Max	21.9	96.6	94.1	91.5	95				
Efficacy after 2 applications													
POD	60-264	37-79	8	***Mean***	***15.7***	***86.2***	***82.3***	***72.9***		5=		5=	
				Min	5.8	57.7	65.4	45.2		3>		2>	
				Max	32	100	100	99				1<	
POD	60-81	37-56	6***	***Mean***	***14.2***	***90.6***	***87.7***	***75.8***		4=		4=	
				Min	5.8	76.3	70.6	53.7		2>		2>	
				Max	32	100	100	99					
			3***	***Mean***	***8.9***	***97.7***	***94.7***	***83.1***	***94.1***	2=	3=	2=	3=
				Min	5.8	93.9	85.0	53.7	82.3	1>		1>	

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTD[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 gPTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	CA2702	CA2445	CA2702	CA2445
				Max	14.7	100.0	100.0	99.0	100.0				
POD	251-264	54-79	2**	***Mean*** Min Max	***20.2*** 10.4 30	***73*** 57.7 88.3	***66*** 65.4 66.7	***64.3*** 45.2 83.3	***47.3*** 9.6 85	2=	2=	1= 1<	1= 1<
Efficacy after 2 applications													
STEM	56	21	1	***Mean***	***7.2***	***94.1***	***90.8***	***96.4***	***96.6***	1=	1=	1=	1=
STEM	60-77	39-56	3	***Mean*** Min Max	***7.4*** 4.9 10.7	***93.7*** 89.7 96.9	***89.4*** 83.2 93.8	***74.8*** 60 93.3	***87.9*** 78.5 94.9	1= 2>	2= 1>	1= 2>	2= 1>

**Trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring

Comments of zRMS:

25 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved effectiveness on similar level compared to prothioconazole used solo. Significant inferior results have been noted for azoxystrobin used solo in some trials. The moderate to high level of control was observed after 2 applications. No results after 1 application were available. In the North-East EPPO zone, CA3642 and CA2702 containing azoxystrobin solo had similar effect (>90%). Also no statistical differences were detected after 2 applications. In the South-East EPPO zone, no significant differences between active substances used solo and CA3642 were observed after 1 spring application. Slight differences were visible after 2 applications. The test mixture is superior compared to azoxystrobin on stems (89-94% vs 75%) and pods (88-91% vs 76%). In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of ALTEBA in winter oilseed rape.

BRSNW – ERYSCR

Maritime EPPO zone

Two trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against ERYSCR in winter oilseed rape. The trials were carried out in France (1 trial) and Great Britain (1 trial) in 2019 or 2020.
In one trial, both applications were conducted in the spring. The first application took place at crop stage BBCH 50 and the second application was done 21 days later, at BBCH 65.
In the other trial, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 19 and the second application was done 135 days later, at BBCH 67.

A summary of the efficacy of CA3642 applied twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 (prothioconazole), both applied at 175 g a.s./ha, against ERYSCR in BRSNW in the Maritime EPPO zone is presented in **Table 3.2-71**. ~~Data from individual~~

trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**.

In 1 trial, two spring applications of CA3642 achieved a mean efficacy of 66% on the leaves when applied at both rates of 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) and 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole/ha). CA2702 achieved 34% efficacy and CA2445 achieved 67% efficacy. Both rates of CA3642 gave significantly more effective control compared to CA2702 and statistically comparable efficacy compared to CA2445.
In 1 trial, two split-season applications of CA3642 achieved a mean efficacy of 35% on the leaves when applied at both rates of 1.2 L/ha (180 g azoxystrobin and 180 g prothioconazole/ha) and 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole/ha). CA2702 achieved 19% efficacy and CA2445 achieved 28% efficacy. Both rates of CA3642 gave significantly more effective control compared to CA2702 and statistically comparable efficacy compared to CA2445.
On the pods, zero or very low control (<5%) was achieved by the treatments making analysis of the results invalid.
Similarly, low control on the stems (2.5-21% efficacy) does not allow a valid assessment of the data.

Overall, there is a clear and consistent benefit for efficacy on the leaves from treatment with two applications (two spring applications or two split-season applications) of CA3642 compared to azoxystrobin alone. Against ERYSCR, there is no clear benefit for CA3642 compared to prothioconazole alone.

North-East EPPO zone
No data are available.

South-East EPPO zone
A total of 15 trials from the South-East EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against ERYSCR in winter oilseed rape. The trials were carried out in Hungary (6 trials), Romania (6 trials) and Slovakia (3 trials) in 2019 or 2020.
In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 37-55 and the second application was done 20-38 days later, at BBCH 65-69.
In the other 4 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-16 and the second application was done 155-197 days later, at BBCH 65-66.

A summary of the efficacy of CA3642 applied once or twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 (prothioconazole), both applied at 175 g a.s./ha, against ERYSCR in BRSNW in the South-East EPPO zone is presented in **Błąd! Nie można odnaleźć źródła odwołania.**. Data from individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**. table 3.2-72.

One application
Data are available to compare the efficacy of one spring application of both rates of CA3642 with that of CA2702 and CA2445 in 3 trials on the leaves and 1 trial on the stems.

Across 4 trials on the leaves, mean efficacy of 97% and 95% was achieved by one spring application of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 96% efficacy and CA2445 achieved 98% efficacy. There were no significant differences between treatments in any of the 3 trials.
In 1 trial on the stems, mean efficacy of 91% and 84% was achieved by one spring application of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 90% efficacy and CA2445 achieved 98% efficacy. There were no significant differences between treatments.

Two applications
Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 in 6 trials on the leaves, 8 trials on the pods and 11 trials on the stems.

At early timings across 6 trials on the leaves, mean efficacy of 93% and 91% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 75% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of CA2702 in 5 trials and significantly more effective in 1 trial.
At later timings across 6 trials on the leaves, mean efficacy of 91% and 88% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 46% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to that of CA2702 in 4 trials and significantly more effective in 2 trials while the lower 1.0 L/ha rate is statistically comparable to that of CA2702 in 5 trials and significantly more effective in 1 trial.

Across 8 trials on the pods, mean efficacy of 75% and 72% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 53% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to that of CA2702 in 5 trials and significantly more effective in 3 trials while the lower 1.0 L/ha rate is statistically comparable to that of CA2702 in 6 trials and significantly more effective in 2 trials.

Across 11 trials on the stems, mean efficacy of 86% and 82% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 59% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to that of CA2702 in 6 trials and significantly more effective in 5 trials while the lower 1.0 L/ha rate is statistically comparable to that of CA2702 in 7 trials and significantly more effective in 4 trials.

Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 and CA2445 in a total of 9 trials on the leaves, a total of 11 trials on the pods and a total of 14 trials on the stems.

At early timings across 5 trials on the leaves, mean efficacy of 93% and 90% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 74% efficacy and CA2445 achieved 96% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of CA2445 in all 5 trials, and statistically comparable to CA2702 in 4 trials being significantly more effective in 1 trial.
At later timings across 6 trials, mean efficacy of 93% and 91% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 78% efficacy and CA2445 achieved 88% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of CA2445 in all 6 trials, and statistically comparable to CA2702 in 3 trials being significantly more effective in 3 trials.
At later timings across 3 trials, mean efficacy of 76% and 75% was achieved on the leaves by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 28% efficacy and CA2445 achieved 81% efficacy. The efficacy of both rates of CA3642 is significantly more effective than CA2702 in all 3 trials, and statistically comparable to that of CA2445 in 2 trials being significantly less effective in 1 trial.
At even later timings across 5 trials, mean efficacy of 91% and 89% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 38% efficacy and CA2445 achieved 88% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of CA2445 in all 5 trials. The higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 3 trials and significantly more effective in 2 trials while the lower 1.0 L rate is statistically comparable to CA2702 in 4 trials being significantly more effective in 1 trial.
At even later timings across 3 trials, mean efficacy of 41% and 33% was achieved on the leaves by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 19% efficacy and CA2445 achieved 64% efficacy. The efficacy of both rates of CA3642 is significantly more effective than CA2702 in 2 trials and significantly more effective in 1 trial, and statistically comparable to that of CA2445 in 2 trials being significantly less effective in 1 trial.

Across 7 trials on the pods, mean efficacy of 74% and 71% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 50% efficacy and CA2445 achieved 72% efficacy. The higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 4 trials and significantly more effective in 3 trials while the lower 1.0 L rate is statistically comparable to CA2702 in 5 trials being significantly more effective in 2 trials. The higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2445 in all 7 trials while the lower 1.0 L rate is statistically comparable to CA2445 in 6 trials being significantly less effective in 1 trial.
Across 3 trials on the pods, mean efficacy of 47% and 24% was achieved on the leaves by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 17% efficacy and CA2445 achieved 60% efficacy. The higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials while the lower 1.0 L rate is statistically comparable to CA2702 in all 3 trials. The higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2445 in 1 trial, significantly more effective in 1 trial and significantly less effective in 1 trial, while the lower 1.0 L rate is statistically comparable to CA2445 in 2 trials being significantly less effective in 1 trial.

At an early timing in 1 trial, mean efficacy of 93% and 87% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 90% efficacy and CA2445 achieved 94% efficacy. There are no significant difference between treatments.
At later timings across 10 trials, mean efficacy of 86% and 83% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 57% efficacy and CA2445 achieved 85% efficacy. The efficacy of both rates of CA3642 is statistically comparable to CA2702 in 6 trials and significantly more effective in 4 trials. The higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2445 in all 10 trials while the lower 1.0 L rate is statistically comparable to CA2445 in 9 trials being significantly less effective in 1 trial.
At later timings across 3 trials, mean efficacy of 41% and 29% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 21% efficacy and CA2445 achieved 57% efficacy. Compared to both CA2702 and CA2445, the efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable in 2 trials and significantly more effective in 1 trial. The efficacy of the lower 1.0 L/ha rate of CA3642 is statistically comparable to both CA2702 and CA2445 in all 3 trials.

Overall, there is a clear and consistent benefit for efficacy on the leaves, pods and stems from treatment with two applications (two spring applications or two split-season applications) of CA3642 compared to azoxystrobin alone. Against ERYSCR, there is no clear benefit for CA3642 compared to prothioconazole alone.

Table 3.2-71: Efficacy of CA3642 against ERYSCR in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Maritime EPPO zone

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
Efficacy after 2 applications													
LEAF	80-177	42-59	2	***Mean***	***28.4***	***50.8***	***50.2***	***26***	***47.2***	2>	2=	2>	2=
				Min	26.7	35.3	34.9	18.5	27.8				
				Max	30.1	66.4	65.5	33.5	66.7				
	80	59	1***	***Mean***	***30.1***	***66.4***	***65.5***	***33.5***	***66.7***	1>	1=	1>	1=
	177	42	1**	***Mean***	***26.7***	***35.3***	***34.9***	***18.5***	***27.8***	1>	1=	1>	1=
POD	195	60	1**	***Mean***	***17***	***0***	***4.9***	***0***	***2.7***	1=	1=	1=	1=
STEM	195	60	1**	***Mean***	***14***	***15.6***	***11.1***	***2.5***	***20.9***	1=	1=	1=	1=

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring

Table 3.2-72: Efficacy of CA3642 against ERYSCR in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – South-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
Efficacy after 1 application													
LEAF	21-38	-	3	***Mean***	***10.1***	***96.5***	***95.1***	***96.2***	***98.4***	3=	3=	3=	3=
				Min	5.2	89.5	85.3	88.5	95.2				
				Max	19.4	100	100	100	100				
Efficacy after 2 applications													
LEAF early	35-59	14-28	6	***Mean***	***19.5***	***93.4***	***90.5***	***75.4***		5=		5=	
				Min	5.1	85.7	80.6	25		1>		1>	
				Max	50	100	100	95.6					
			5	***Mean***	***22.4***	***92.5***	***90.1***	***73.6***	***95.5***	4=	5=	4=	4=
				Min	9.8	85.7	80.6	25	91.1	1>		1>	1<
				Max	50	100	100	95.6	100				
LEAF mid	51-231	30-39	9	***Mean***	***37.6***	***87.5***	***85.6***	***61.1***	***85.7***	3=	7=	3=	6=
				Min	19.8	47.6	52.2	18.2	50	6>	2<	6>	3<
				Max	95.5	100	100	92.6	100				
	51-77	30-39	6***	***Mean***	***37.2***	***93.4***	***91.1***	***77.5***	***88.2***	3=	6=	3=	5=
				Min	19.8	86.6	85.7	33.3	73.6	3>		3>	1<
				Max	95.5	100	100	92.6	100				
	191-231	31-36	3**	***Mean***	**38.3**	***75.7***	***74.5***	***28.3***	***80.9***	3>	1=	3>	1=
				Min	30	47.6	52.2	18.2	50		2<		2<
				Max	55	93.7	86.7	33.3	100				
LEAF late	67-257	46-62	9	***Mean***	***44.2***	***74.5***	***70***	***36.9***		6=		7=	
				Min	11.8	20	20	0		3>		2>	
				Max	70	95.6	91.7	87.6					

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
LEAF late	67-77	46-54	6***	***Mean***	***47.6***	***91.2***	***88.2***	***45.7***		4=		5=	
				Min	24.5	85.7	85.7	0		2>		1>	
				Max	70	95.6	91.7	87.6					
			5***	***Mean***	***52.3***	***90.6***	***88.6***	***37.8***	***88.3***	3=	5=	4=	5=
				Min	38.8	85.7	85.7	0	85.7	2>		1>	
				Max	70	95.6	91.7	87.6	91.7				
LEAF late	202-257	47-62	3**	***Mean***	***37.3***	***41.1***	***33.4***	***19.2***	***63.8***	2=	2=	2=	2=
				Min	11.8	20	20	0	41.5	1>	1<	1>	1<
				Max	50	52.4	60.2	47.5	90				
Efficacy after 2 applications													
POD	59-257	38-62	11	***Mean***	***26.9***	***67.6***	***58.4***	***43.5***		6=		9=	
				Min	5.6	16.7	0	0		5>		2>	
				Max	60	100	100	98.4					
	59-78	38-57	8***	***Mean***	***23.3***	***75.2***	***71.5***	***53.3***		5=		6=	
				Min	5.6	16.7	16.7	0		3>		2>	
				Max	60	100	100	90.7					
			7***	***Mean***	***25.2***	***73.5***	***70.9***	***50.2***	***72***	4=	7=	5=	6=
				Min	5.6	16.7	16.7	0	16.7	3>		2>	1<
				Max	60	100	100	90.7	100				
	217-257	48-62	3**	***Mean***	***36.6***	***47.4***	***23.5***	***17.2***	***59.7***	1=	1=	3=	2=
				Min	9.7	20	0	0	39.2	2>	1<		1<
				Max	50	72.2	50.5	51.5	80		1>		
Efficacy after 1 application													
STEM	38	-	1	***Mean***	***12.2***	***90.6***	***84.3***	***90.9***	***97.5***	1=	1=	1=	1=
Efficacy after 2 applications													
STEM early	59	21	1	***Mean***	***11.2***	***92.8***	***87.3***	***89.9***	***93.8***	1=	1=	1=	1=
STEM late	59-257	36-62	14	***Mean***	***31.2***	***76***	***70.6***	***50.4***		8=		10=	
				Min	8.4	20	0	0		6>		4>	
				Max	88.8	99.1	98.6	96.1					

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
STEM late	59-78	36-57	11***	***Mean*** Min Max	***29.7*** 8.4 88.8	***85.6*** 40 99.1	***81.8*** 40 98.6	***58.5*** 0 96.1		6= 5>		7= 4>	
			10***	***Mean*** Min Max	***30*** 8.4 88.8	***85.7*** 40 99.1	***82.7*** 40 98.6	***57.1*** 0 96.1	***84.5*** 40 99.2	6= 4>	10=	6= 4>	9= 1<
	217-257	48-62	3**	***Mean*** Min Max	***36.8*** 10.3 50	***40.8*** 20 82.5	***29.3*** 0 68	***20.7*** 0 62.1	***56.5*** 49.5 60	2= 1>	2= 1>	3=	3=

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring

Comments of zRMS:

17 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved very low to moderate effectiveness after 2 applications. Significant inferior results were observed for CA2702 containing azoxystrobin solo. Comparable effect was visible between CA3642 and CA2445 containing prothioconazole solo. No results after 1 application were available. In the North-East EPPO zone, data has not been submitted in this chapter. In the South-East EPPO zone, CA3642 presented similar effectiveness compared to azoxystrobin and prothioconazole used solo. High results have been noted after 1 application. Significant inferior efficacy was observed for CA2702 after 2 applications in part of trials. Comparable effect was visible between CA3642 and CA2445 containing prothioconazole solo. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of ERYSCR in winter oilseed rape.

BRSNW – SCLESC

Maritime EPPO zone

A total of 18 trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in France (3 trials), the Czech Republic (6 trials), Germany (8 trials) and Great Britain (1 trial) between 2019 and 2021.

In 12 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 34-55 and the second application was done 18-44 days later, at BBCH 65-69.

In the other 6 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-19 and the second application was done 135-208 days later, at BBCH 65-67.

A summary of the efficacy of CA3642 applied twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 or Proline 275 (prothioconazole), both applied at 175 g a.s./ha, against SCLESC in BRSNW in the Maritime EPPO zone is presented in Table 3.2-73. ~~Data from individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**.~~

Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 and prothioconazole alone in a total of 3 trials on the leaves, 1 trial on the pods and a total of 8 trials on the stems.

At early timings across 2 trials on the leaves, mean efficacy of 67% and 68% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 57% efficacy and prothioconazole alone achieved 70% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of prothioconazole alone in both trials, and is statistically comparable to CA2702 in 1 trial being significantly more effective in 1 trial.

At later timings across 3 trials, mean efficacy of 52% and 51% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 46% efficacy and prothioconazole alone achieved 53% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of prothioconazole alone in 2 trials and significantly less effective in 1 trial. The efficacy of both rates of CA3642 is statistically comparable to CA2702 in 2 trials being significantly more effective in 1 trial.

In 1 trial on the pods, mean efficacy of 83% was achieved by two spring applications of CA3642 at both 1.2 L/ha and 1.0 L/ha. CA2702 achieved 75% efficacy and prothioconazole alone achieved 100% efficacy. There are no significant differences between treatments.

At an early timing across 3 trials, mean efficacy of 84% and 79% was achieved on the stems by two spring applications of CA3642 at both 1.2 L/ha and 1.0 L/ha. CA2702 achieved 76% efficacy and prothioconazole alone achieved 82% efficacy. There are no significant differences between treatments in any of the 3 trials.

At later timings across 5 trials, mean efficacy of 88% and 87% was achieved on the stems by two

spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 67% efficacy and prothioconazole alone achieved 91% efficacy. Both rates of CA3642 are statistically comparable to prothioconazole alone in all 5 trials, and statistically comparable to CA2702 in 4 trials being significantly more effective in 1 trial.
At later timings across 3 trials, mean efficacy of 94% and 93% was achieved on the stems by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 84% efficacy and prothioconazole alone achieved 90% efficacy. There are no significant differences between treatments in any of the 3 trials.
At even later timings across 3 trials, mean efficacy of 79% and 68% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 67% efficacy and prothioconazole alone achieved 72% efficacy. Compared to both CA2702 and prothioconazole alone, the higher 1.2 L rate of CA3642 is statistically comparable in 2 trials and significantly more effective in 1 trial. The efficacy of the lower 1.0 L/ha rate of CA3642 is statistically comparable to both CA2702 and prothioconazole alone.
At even later timings across 3 trials, mean efficacy of 69% and 68% was achieved on the stems by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 62% efficacy and prothioconazole alone achieved 57% efficacy. Both rates of CA3642 are statistically comparable to prothioconazole alone in all 3 trials, and statistically comparable to CA2702 in 2 trials being significantly more effective in 1 trial.

Overall, there is a clear and consistent benefit for efficacy on the leaves, pods and stems from treatment with two applications of CA3642 compared to azoxystrobin alone. On the stems, CA3642 applied at the higher rate of 1.2 L/ha provides a benefit compared to prothioconazole alone.

North-East EPPO zone

A total of 16 trials from the North-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in Latvia (2 trials) and Poland (14 trials) between 2019 and 2021.
In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 32-55 and the second application was done 21-47 days later, at BBCH 65-69.
In the other 5 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 16-20 and the second application was done 187-210 days later, at BBCH 65-68.

A summary of the efficacy of CA3642 applied twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 (prothioconazole), both applied at 175 g a.s./ha, against SCLESC in BRSNW in the North-East EPPO zone is presented in
Table 3.**2-74**. ~~Data from individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**.~~

Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 in 2 trials on the pods, 2 trials on the stems at later timings and 8 trials at even later timings.

Across 2 trials on the pods, mean efficacy of 94% and 83% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 73% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of CA2702 in 1 trial and significantly more effective in 1 trial.
At later timings across 2 trials, mean efficacy of 72% and 67% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 31% efficacy. The efficacy of both rates of CA3642 is statistically comparable to that of CA2702 in 1 trial and significantly more effective in 1 trial.
At even later timings on the stems across 8 trials, mean efficacy of 91% and 88% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 69% efficacy. The higher 1.2 L rate of CA3642 is statistically comparable to that of CA2702 in 4 trials

and significantly more effective in 4 trials, while the lower 1.0 L/ha rate of CA3642 is statistically comparable to that of CA2702 in 5 trials and significantly more effective in 3 trials.

Data are available to compare the efficacy of two applications of both rates of CA3642 with that of CA2702 in a total of 3 trials on the stems at early timings, at later timings on the stems in 1 trial and a total of 9 trials at even later timings.

At early timings across 2 trials, mean efficacy of 89% and 83% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 and CA2445 both achieved 85% efficacy. There were no significant differences between treatments in either trial.
At early timings in 1 trial, mean efficacy of 95% and 84% was achieved on the stems by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 84% efficacy and CA2445 achieved 92% efficacy. There were no significant differences between treatments with the exception that the 1.2 L/ha rate of CA3642 is significantly more effective than CA2702.

At later timings in 1 trial, mean efficacy of 67% and 59% was achieved on the stems by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 31% efficacy and CA2445 achieved 72% efficacy. The efficacy of both rates of CA3642 are significantly more effective than CA2702 and both rates are statistically comparable to CA2445.

At even later timings across 5 trials, mean efficacy of 91% and 86% was achieved on the stems by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 67% efficacy and CA2445 achieved 92% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to that of CA2702 in 2 trials and significantly more effective in 3 trials while the lower 1.0 L/ha rate is statistically comparable to that of CA2702 in 3 trials and significantly more effective in 2 trials. The efficacy of both rates of CA3642 is statistically comparable to that of CA2445 in all 5 trials.
At even later timings across 4 trials, mean efficacy of 81% and 66% was achieved on the stems by two split-season applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 59% efficacy and CA2445 achieved 79% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to that of CA2702 in 1 trial and significantly more effective in 3 trials while the lower 1.0 L/ha rate is statistically comparable to that of CA2702 in 3 trials and significantly more effective in 1 trial. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to that of CA2445 in all 4 trials while the lower 1.0 L/ha rate is statistically comparable to that of CA2445 in 2 trials and significantly less effective in 2 trials.

Overall, there is a clear benefit for efficacy on the pods and stems from treatment with two applications (two spring applications and two split-season applications) of CA3642 compared to azoxystrobin alone. A slight benefit of the higher 1.2 L/ha rate of CA3642 compared to prothioconazole alone is apparent at early timings on the stems.

<u>South-East EPPO zone</u>
Nine trials from the South-East EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in Hungary (4 trials), Romania (3 trials) and Slovakia (1 trial) in 2019 or 2020.
In 8 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 12-38 days later, at BBCH 65-67.
In the other trial, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 18 and the second application was done 185 days later, at BBCH 65.

A summary of the efficacy of CA3642 applied once or twice at 1.2 L or 1.0 L/ha directly compared with that of CA2702 (azoxystrobin) and CA2445 (prothioconazole), both applied at 175 g a.s./ha, against SCLESC in BRSNW in the South-East EPPO zone is presented in **Table 3.2-75**. ~~Data from~~

individual trials can be reviewed in **Błąd! Nie można odnaleźć źródła odwołania.**.

One application
Data are available to compare the efficacy of one spring application of both rates of CA3642 with that of CA2702 and CA2445 in 2 trials on the leaves.

After one spring application, CA3642 applied at 1.2 L and 1.0 L/ha achieved 86% and 82% efficacy, respectively, compared to 81% efficacy for CA2702 and 92% efficacy for CA2445. The efficacy of both rates of CA3642 is statistically comparable to that of CA2445 in 1 trial, and significantly less effective in 1 trial. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 1 trial and significantly more effective in 1 trial while the lower 1.0 L/ha rate is statistically comparable to CA2702 in both trials.

Two applications
Data are available to compare the efficacy of two spring application of both rates of CA3642 with that of CA2702 in 3 trials on the leaves, 5 trials on the pods and 5 trials on the stems.

Across 3 trials on the leaves (at later timings), mean efficacy of 70% and 72% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 58% efficacy. The efficacy of both rates of CA3642 is statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials.

Across 5 trials on the pods, mean efficacy of 78% and 76% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 70% efficacy. The efficacy of both rates of CA3642 is statistically comparable to CA2702 in 3 trials and significantly more effective in 2 trials.

Across 5 trials on the stems (at later timings), mean efficacy of 77% and 81% was achieved by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 55% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 2 trials and significantly more effective in 3 trials, while the lower 1.0 L/ha rate is statistically comparable to CA2702 in 3 trials and significantly more effective in 2 trials.

Data are available to compare the efficacy of two spring application of both rates of CA3642 with that of CA2702 and CA2445 in a total of 3 trials on the leaves, 3 trials on the pods, 3 trials on the roots and a total of 6 trials on the stems.

At early timings across 3 trials, mean efficacy of 86% and 81% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 72% efficacy and CA2445 achieved 87% efficacy. The efficacy of both rates of CA3642 is statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2445 in all 3 trials, while the lower 1.0 L/ha rate is statistically comparable to CA2445in 2 trials and significantly less effective in 1 trial.
At later timings across 2 trials, mean efficacy of 76% and 72% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 56% efficacy and CA2445 achieved 76% efficacy. The efficacy of both rates of CA3642 is statistically comparable to CA2445 in both trials and significantly more effective than CA2702 in both trials.

Across 3 trials on the pods, mean efficacy of 93% and 91% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 78% efficacy and CA2445 achieved 90% efficacy. The efficacy of both rates of CA3642 is statistically comparable to CA2445 in all 3 trials, and statistically comparable with CA2702 in 1 trial being significantly more effective in 1 trial.

Across 3 trials on the roots, mean efficacy of 99% and 98% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 98% efficacy and CA2445 achieved 99% efficacy. There are no significant differences between treatments in any of the 3 trials.

At an early timing across 3 trials on the stems, mean efficacy of 91% and 82% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 74% efficacy and CA2445 achieved 94% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials, while the lower 1.0 L/ha rate is statistically comparable to CA2702 in 2 trials and significantly more effective in 1 trial. The efficacy of the lower 1.0 L/ha rate of CA3642 is statistically comparable to CA2445 in 2 trials and significantly less effective in 2 trials, while the lower 1.0 L/ha rate is statistically comparable to CA2445 in 1 trial and significantly less effective in 2 trials.
At later timings across 4 trials on the stems, mean efficacy of 83% and 81% was achieved on the leaves by two spring applications of CA3642 at 1.2 L/ha and 1.0 L/ha, respectively. CA2702 achieved 63% efficacy and CA2445 achieved 77% efficacy. The efficacy of the higher 1.2 L/ha rate of CA3642 is statistically comparable to CA2702 in 1 trial and significantly more effective in 3 trials, while the lower 1.0 L/ha rate is statistically comparable to CA2702 in 2 trials and significantly more effective in 2 trials. The efficacy of the lower 1.0 L/ha rate of CA3642 is statistically comparable to CA2445 in all 4 trials, while the lower 1.0 L/ha rate is statistically comparable to CA2445 in 2 trials and significantly less effective in 2 trials.

In 1 trial on the stems, mean efficacy of 86% was achieved on the leaves by two split-season applications of CA3642 at both 1.2 L/ha and 1.0 L/ha. CA2702 achieved 87% efficacy and CA2445 achieved 91% efficacy. There were no significant differences between treatments.

Overall, there is a clear and consistent benefit for efficacy on the leaves, pods and stems from treatment with two spring applications of CA3642. Treatment with CA3642 shows some benefit compared to prothioconazole on the stems at later timings.

Table 3.2-73: Efficacy of CA3642 against SCLESC in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – Maritime EPPO zone

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**Summarized PTZ products* 250-275 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.63-0.7 l/ha 173-175 g ai/ha**	**CA2702**	**PTZ**	**CA2702**	**PTZ**
Efficacy after 2 applications													
LEAF early	49-61	17-22	2	***Mean*** Min Max	***8.2*** 8 8.4	***67*** 51.6 82.5	***68*** 55.4 80.6	***57.1*** 56.4 57.8	***69.8*** 55.3 84.3	1= 1>	2=	1= 1>	2=
LEAF late	59-92	35-48	3	***Mean*** Min Max	***12*** 7.7 18.8	***51.8*** 31.8 78.5	***51*** 29.8 71.6	***46*** 24.2 68.4	***52.7*** 39.4 79.2	2= 1>	2= 1<	2= 1>	2= 1<
POD	78	56	1	***Mean***	***6***	***83.3***	***83.3***	***75***	***100***	1=	1=	1=	1=
STEM early	63-65	36-42	3	***Mean*** Min Max	***12.8*** 6.3 16.5	***84.4*** 71.2 96.3	***78.8*** 66.7 99.4	***75.5*** 67.4 81.6	***81.7*** 72 99.7	3=	3=	3=	3=
STEM mid	69-229	51-83	8	***Mean*** Min Max	***14*** 4.3 26.9	***90*** 69.8 100	***89.3*** 61.7 100	***73*** 24.5 100	***90.7*** 78.8 100	7= 1>	8=	7= 1>	8=
	69-102	51-76	5***	***Mean*** Min Max	***14.5*** 4.3 26.9	***87.9*** 69.8 100	***86.9*** 61.7 100	***66.6*** 24.5 100	***90.9*** 78.8 100	4= 1>	5=	4= 1>	5=
	195-229	60-83	3**	***Mean*** Min Max	***13.1*** 6.4 18.2	***93.5*** 90.7 97.8	***93.3*** 91.9 95.3	***83.5*** 80.3 85.4	***90.3*** 82.4 95.3	3=	3=	3=	3=
STEM late	109-286	73-84	6	***Mean*** Min Max	***27.8*** 13.9 53.1	***74.3*** 51.4 82.8	***68.1*** 54.9 77.4	***64.6*** 52.3 79.3	***64.3*** 36.2 76.6	4= 2>	5= 1>	5= 1>	6=
	109-112	73-77	3***	***Mean*** Min Max	***27.2*** 13.9 53.1	***79.2*** 73.2 82.8	***68.3*** 56.2 77.4	***67.6*** 52.3 79.3	***72.1*** 66.8 76.6	2= 1>	2= 1>	3=	3=
	266-286	78-84	3**	***Mean*** Min Max	***28.3*** 23 32.8	***69.3*** 51.4 82.3	***68*** 54.9 76.6	***61.7*** 59.8 62.8	***56.5*** 36.2 70.7	2= 1>	3=	2= 1>	3=

*Summarised PTZ products = CA2445 or Proline 275

**Trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring

Table 3.2-74: Efficacy of CA3642 against SCLESC in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – North-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
Efficacy after 2 applications													
POD	74-83	47-54	2	***Mean***	***9.6***	***93.5***	***83.1***	***72.5***		1=		1=	
				Min	7.9	92	77.7	50		1>		1>	
				Max	11.2	94.9	88.6	94.9					
Efficacy after 2 applications													
STEM	42-226	16-21	3	***Mean***	***8.2***	***91.1***	***83.5***	***84.7***	***87.3***	2=	3=	3=	3=
				Min	6.6	87.2	78.2	82.1	83.3	1>			
				Max	10.2	95.1	87.9	87.9	92.2				
	42-50	21	2***	***Mean***	***7.2***	***89***	***83***	***85***	***84.8***	2=	2=	2=	2=
				Min	6.6	87.2	78.2	82.1	83.3				
				Max	7.8	90.9	87.9	87.9	86.4				
	226	16	1**	***Mean***	***10.2***	***95.1***	***84.3***	***84.3***	***92.2***	1>	1=	1=	1=
Efficacy after 2 applications													
STEM	80-239	33-38	3	***Mean***	***12.4***	***70.3***	***64.3***	***30.9***		1=		1=	
				Min	9	65.9	45.7	25.6		2>		2>	
				Max	15.3	78.4	88.2	35.9					
	80-84	33-38	2***	***Mean***	***14.1***	***72.2***	***67***	***30.8***		1=		1=	
				Min	12.9	65.9	45.7	25.6		1>		1>	
				Max	15.3	78.4	88.2	35.9					
	239	34	1**	***Mean***	***9***	***66.7***	***58.9***	***31.1***	***72.2***	1>	1=	1>	1=

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
Efficacy after 2 applications													
STEM	76-271	47-62	12	***Mean***	***14.9***	***87.9***	***80.5***	***65.7***		5=		8=	
				Min	5	71.4	57.1	20		7>		4>	
				Max	24.1	98	96.5	97.4					
	76-86	47-56	8***	***Mean***	***14.2***	***91.3***	***87.9***	***68.9***		4=		5=	
				Min	5	85.5	77.9	20		4>		3>	
				Max	23.1	98	96.5	97.4					
			5***	***Mean***	***10.7***	***91.2***	***86.2***	***66.9***	***92.4***	2=	5=	3=	5=
				Min	5	85.5	77.9	20	82.4	3>		2>	
				Max	23.1	98	91.3	92.2	100				
	237-271	50-62	4**	***Mean***	***16.2***	***81***	***65.7***	***59.2***	***78.8***	1=	4=	3=	2=
				Min	10.5	71.4	57.1	41.9	65.7	3>		1>	2<
				Max	24.1	91.7	73.3	73.3	85.1				

Table 3.2-75: Efficacy of CA3642 against SCLESC in BRSNW compared to the efficacy of products containing prothioconazole or azoxystrobin as single active ingredient – South-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	CA2702	CA2445	CA2702	CA2445
Efficacy after 1 application													
LEAF	21	-	2	***Mean***	***11***	***86***	***81.8***	***81.3***	***91.7***	1=	1=	2=	1=
				Min	9.4	80	75.2	70.4	90.7	1>	1<		1<
				Max	12.5	92	88.4	92.3	92.8				
Efficacy after 2 applications													
LEAF	42-59	21	3	***Mean***	***15.3***	***86.1***	***80.7***	***71.8***	***86.9***	1=	3=	1=	2=
				Min	7.1	79.8	73	54.8	80.2	2>		2>	1<
				Max	19.4	96.8	91.8	94.6	97.6				
LEAF	60-63	36-39	3	***Mean***	***18.7***	***69.6***	***72.2***	***58.4***		1=		1=	
				Min	13.3	57.9	71	56.1		2>		2>	
				Max	21.4	75.7	73.4	59.8					
			2	***Mean***	***21.4***	***75.5***	***72.2***	***57.9***	***75.9***	2>	2=	2>	2=
				Min	21.4	75.2	71	56.1	75.7				
				Max	21.4	75.7	73.4	59.8	76.2				
Efficacy after 2 applications													
POD	60-70	39-50	5	***Mean***	***14.5***	***78.1***	***76.1***	***70.3***		3=		3=	
				Min	5.3	43	47	51.8		2>		2>	
				Max	33	96.3	96.2	94.3					
			3	***Mean***	***5.4***	***93.3***	***90.9***	***78.3***	***89.8***	1=	3=	1=	3=
				Min	5.3	87.5	82.1	51.8	73.2	2>		2>	
				Max	5.6	96.3	96.2	94.3	98.1				
Efficacy after 2 applications													
ROOT	60-80	39-42	3	***Mean***	***5.1***	***99.3***	***98.4***	***97.6***	***99.3***	3=	3=	3=	3=
				Min	4.9	97.8	95.1	92.9	98				
				Max	5.2	100	100	100	100				

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**CA2445**	**CA2702**	**CA2445**
Efficacy after 2 applications													
STEM	42-59	21	3	***Mean***	***9.8***	***90.5***	***82.3***	***73.8***	***94.4***	1=	2=	2=	1=
				Min	6.8	86.1	68.3	60.5	92.6	2>	1<	1>	2<
				Max	12.9	97.6	92.7	95.8	97.5				
STEM	60-232	39-57	6	***Mean***	***16***	***78.9***	***81.4***	***60.3***		3=		4=	
				Min	5.6	55.5	75	25.1		3>		2>	
				Max	33.4	92.9	87.5	86.5					
	60-81	39-57	5***	***Mean***	***12.5***	***77.4***	***80.6***	***55.0***		2=		3=	
				Min	*5.6*	*55.5*	*75.0*	*25.1*		3>		2>	
				Max	*24.7*	*92.9*	*87.5*	*69.3*					
			4***	***Mean***	***9.5***	***82.9***	***81***	***62.5***	***76.5***	1=	4=	2=	2=
				Min	5.6	78.7	75	52.2	65.4	3>		2>	2<
				Max	12.7	92.9	87.5	69.3	81.7				
	232	47	1**	***Mean***	***33.4***	***86.2***	***85.6***	***86.5***	***91***	1=	1=	1=	1=

Comments of zRMS:

43 trials were available to justify the mixture of active substances contained in CA3642. In the Maritime EPPO climatic zone, CA3642 achieved comparable effectiveness with CA2445 containing prothioconazole solo after 2 applications. Significant inferior results were observed for CA2702. No results after 1 application were available. In the North-East EPPO zone, no significant differences between test mixture and prothioconazole used solo were detected after 2 applications. CA2702 presented inferior efficacy in most trials. No results after 1 application were available. In the South-East EPPO zone, similar effect was visible for all products after 1 application. Slight differences were observed after 2 applications. CA3642 was superior compared to CA2702 containing azoxystrobin solo whilst no differences between test product and CA2445 have been noted in most trials. In conclusion, the mixture of azoxystrobin and prothioconazole is justified for control of SCLESC in winter oilseed rape.

Summary of co-formulation justification data on oilseed rape

A total of 85 trials (25 trials against ALTEBA, 17 trials against ERYSCR and 43 trials against SCLESC) carried out in the Maritime, North-East and South-East EPPO zones between 2019 to 2021 have been summarised in order to demonstrate the advantage of using CA3642 compared to products containing just one of the active ingredients.

Against all three representative target phyto-pathogens, there was a clear, and often consistent, benefit from treatment with CA3642 compared to azoxystrobin alone with statistically significant differences frequently observed.
CA3642 applied at the higher rate of 1.2 L/ha provides a benefit compared to prothioconazole alone against ALTEBA in the North-East and South-East EPPO zones and against SCLSEC on the stems in the Maritime, North-East and South-East EPPO zones.

The results demonstrate that the proposed mixture product CA3645 provides better overall efficacy of a range of common pathogens compared to solo products of the components azoxystrobin and prothioconazole. The benefit of the mixture is most clearly demonstrated in those pathogens which are more challenging for fungicide control. No antagonistic effects were observed from the co-formulation.

Ratio justification on oilseed rape

The results of 37 trials carried out in 2019 or 2020 are presented to justify the selection of the mixture’s active substances ratio.

CA3642, a formulation containing 150 g azoxystrobin and 150 g prothioconazole per litre is compared in this preliminary section to another co-formulation, *i.e.* CA3664 (not registered), which contains 200 g azoxystrobin and 150 g prothioconazole per litre.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

The analysis is carried out for key representative uses.
The results are presented hereafter for the following diseases and analysed for the Maritime, North-East and South-East EPPO zones:

- Grey mould - *Botrytis cinerea* (BOTRCI), 1 trial
- Powdery mildew - *Erysiphe cruciferarum* (ERYSCR), 5 trials
- Phoma leaf spot / stem canker – *Leptosphaeria maculans* (LEPTMA), 16 trials
- Light leaf spot - *Pyrenopeziza brassicae* (PYRPBR), 2 trials
- Sclerotinia stem rot *Sclerotinia sclerotiorum* (SCLESC), 13 trials

BRSNW – BOTRCI

Maritime EPPO zone

A summary of the efficacy of CA3642 applied twice at 1.2 L or 1.0 L/ha directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against BOTRCI in BRSNW in the Maritime EPPO zone is presented in **Table 3.2-76**.

In 1 trial on the leaves, two spring applications of CA3642 achieved 41% and 40% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 41% efficacy for CA3644. The efficacy for both rates of CA3642 was statistically comparable to that of CA3644.

Table 3.2-76: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against BOTRCI in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	Untreated	CA3642 300 g/L SC		CA3664 350 g/L EC
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	1 l/ha 200 g AZX/ha + 150 g PTZ/ha
After 2 applications									
LEAF	GBR	80	44	P		8.88 a 8.9	5.20 b 41.4	5.34 b 39.9	5.24 b 41.0
LEAF	GBR	80	44	TIO[19]		100.00 a 100.0	100.00 a 0.0	100.00 a 0.0	100.00 a 0.0
Mean efficacy				1		8.9	41.4	39.9	41.0

Comments of zRMS:

Only 1 efficacy trial was available to justify the mixture of 150 g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. No results after 1 application were available in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved low effectiveness after 2 applications. CA3664 presented comparable effect (40-41% vs 41%). Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

BRSNW – ERYSCR

Maritime EPPO zone

A summary of the efficacy of CA3642, applied twice at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) as split-season applications, directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against ERYSCR in BRSNW in the Maritime EPPO zone is presented in Table 3.2-77.

In 1 trial, two spring applications of CA3642 achieved 35% efficacy on the leaves when applied at both 1.2 L and 1.0 L/ha, compared to 37% efficacy for CA3644. The efficacy for both rates of CA3642 was statistically comparable to that of CA3644.

On the pods, zero or very low control (<5%) was achieved by the treatments making analysis of the

results invalid.
Similarly, low control on the stems (6-16% efficacy) does not allow a valid assessment of the data.

North-East EPPO zone

No data are available.

South-East EPPO zone

A summary of the efficacy of CA3642, applied once at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) as split-season applications, directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against ERYSCR in BRSNW in the South-East EPPO zone is presented in Table 3.2-78.

Across 3 trials at 31-36 DA-A, efficacy of 76% and 75% was achieved on the leaves by CA3642 applied twice as a split-season application at 1.2 L and 1.0 L/ha, respectively. CA3664 achieved 81% efficacy. The efficacy of CA3664 was statistically comparable to both rates of CA3642 in 1 trial, and significantly more effective than both rates in 2 trials.
At later timings (47-62 DA-A) across 3 trials, efficacy of 41% and 33% was achieved on the leaves by CA3642 applied twice as a split-season application at 1.2 L and 1.0 L/ha, respectively. CA3664 achieved 60% efficacy. The efficacy of CA3664 was statistically comparable to both rates of CA3642 in 2 trials, and significantly more effective than both rates in 1 trial.

Across 3 trials on the pods, efficacy of 47% and 24% was achieved by CA3642 applied twice as a split-season application at 1.2 L and 1.0 L/ha, respectively. CA3664 achieved 57% efficacy. The efficacy of CA3664 was statistically comparable to both rates of CA3642 in 1 trial, significantly more effective than both rates in 1 trial and significantly less effective than the 1.2 L/ha rate of CA3642 in 1 trial.

Across 3 trials on the stems, efficacy of 41% and 29% was achieved by CA3642 applied twice as a split-season application at 1.2 L and 1.0 L/ha, respectively. CA3664 achieved 55% efficacy. The efficacy of CA3664 was statistically comparable to both rates of CA3642 in all 3 trials.

Table 3.2-77: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSCR in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA3664 350 g/L EC**
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
After 2 applications									
LEAF	FRA	177	42			26.70 a 26.7	17.28 cd 35.3	17.37 cd 34.9	16.76 d 37.2
Mean efficacy				1**	***Mean***	***26.7***	***35.3***	***34.9***	***37.2***
POD	FRA	195	60			17.01 a 17.0	17.64 a 0.0	16.17 a 4.9	17.28 a 0.0
Mean efficacy				1**	***Mean***	***17.0***	***0.0***	***4.9***	***0.0***
STEM	FRA	195	60			14.00	11.82 a	12.45 a	13.16 a

						a 14.0	15.6	11.1	6.0
Mean efficacy				1**	***Mean***	***14.0***	***15.6***	***11.1***	***6.0***

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Table 3.2-78: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against ERYSCR in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – South-East EPPO zone

Part Rated	**Trial Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA3664 350 g/L EC**
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
After 2 applications									
LEAF	HUN	228	31			55.0 a 55.0	28.8 c 47.6	26.3 c 52.2	30.0 c 45.5
LEAF	HUN	191	36			30.0 a 30.0	1.9 e 93.7	4.0 d 86.7	0.0 f 100.0
LEAF	HUN	231	36			30.0 a 30.0	4.3 cd 85.7	4.6 c 84.7	0.8 f 97.3
				3**	***Mean*** Min Max	***38.3*** 30.0 55.0	***75.7*** 47.6 93.7	***74.5*** 52.2 86.7	***80.9*** 45.5 100.0
LEAF	HUN	202	47			50.0 a 50.0	23.8 d 52.4	40.0 c 20.0	5.0 e 90.0
LEAF	ROU	231	48	P		11.8 a 11.8	5.8 b 50.8	4.7 b 60.2	5.8 b 50.8
LEAF	HUN	257	62			50.0 a 50.0	40.0 a 20.0	40.0 a 20.0	30.0 a 40.0
				3**	***Mean*** Min Max	***37.3*** 11.8 50.0	***41.1*** 20.0 52.4	***33.4*** 20.0 60.2	***60.3*** 40.0 90.0
After 2 applications									
POD	HUN	217	62			50.0 a 50.0	25.0 b 50.0	50.0 a 0.0	10.0 c 80.0
POD	HUN	257	62			50.0 a 50.0	40.0 a 20.0	40.0 a 20.0	30.0 a 40.0
POD	ROU	231	48	P		9.7 a 9.7	2.7 d 72.2	4.8 bc 50.5	4.8 bc 50.5
				3**	***Mean*** Min Max	***36.6*** 9.7 50.0	***47.4*** 20.0 72.2	***23.5*** 0.0 50.5	***56.8*** 40.0 80.0
After 2 applications									
STEM	HUN	217	62			50.0 a 50.0	40.0 a 20.0	50.0 a 0.0	20.0 a 60.0
STEM	HUN	257	62			50.0 a	40.0 a	40.0 a	30.0 a

Part Rated	**Trial Country**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA3664 350 g/L EC**
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
						50.0	20.0	20.0	40.0
STEM	ROU	231	48	P		10.3 a 10.3	1.8 e 82.5	3.3 cde 68.0	3.7 b-e 64.1
				3**	***Mean*** Min Max	***36.8*** 10.3 50.0	***40.8*** 20.0 82.5	***29.3*** 0.0 68.0	***54.7*** 40.0 64.1

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

5 efficacy trials were available to justify the mixture of 150 g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 at 1-1,2 l/ha achieved very poor effectiveness after 2 applications. The mean efficacy was 35% and similar effect has been noted for CA3664 (37%). No results after 1 application were available. In the North-East EPPO climatic zone, no trials have been submitted in this chapter. In the South-East EPPO zone, the test product at 1-1,2 l/ha achieved low to moderate level of control after 2 applications. Similar effect was observed for the reference product (75-76% vs 81% on leaves in early assessment). No results after 1 application was available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

BRSNW – LEPTMA

Maritime EPPO zone

A summary of the efficacy of CA3642, applied twice as split-season applications (4 trials) or as spring applications (1 trial), at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against LEPTMA in BRSNW in the Maritime EPPO zone is presented in Table 3.2-79.

Across 5 data sets, one autumn application of CA3642 achieved 70% and 65% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 70% efficacy for CA3644. The efficacy for both rates of CA3642 was statistically comparable to that of CA3644 in 4 data sets, and was statistically comparable to the lower 1.0 L/ha rate while being significantly less effective than the 1.2 L/ha rate in 1 data set.

In 1 trial, two spring applications of CA3642 achieved 100% efficacy on the leaves for both rates of CA3642 and also for CA3664 at two assessment timings (21 and 39 DA-A).
In 1 trial, two split-season applications of CA3642 achieved 88% and 75% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 78% efficacy for CA3644 with no statistically significant differences between any of the treatments.

Across 2 trials on the stems, two split-season applications of CA3642 achieved 67% and 70% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 65% efficacy for CA3644. There were no significant differences between these treatments in either trial.

North-East EPPO zone

A summary of the efficacy of CA3642, applied twice as split-season applications (2 trials) or as two spring applications (2 trials) at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against LEPTMA in BRSNW in the North-East EPPO zone is presented in Table 3.2-80.

After one autumn application in 1 trial, CA3642 achieved 60% and 80% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 60% efficacy for CA3644 with no significant differences between these treatments.
At a later timing in the same trial, one autumn application of CA3642 achieved 40% and 45% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 44% efficacy for CA3644 with no significant differences between these treatments.
In the same trial on the pods, two split-season applications of CA3642 achieved 92% and 89% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 88% efficacy for CA3644 with no significant differences between these treatments.
In the same trial on the stems, two split-season applications of CA3642 achieved 91% and 72% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 79% efficacy for CA3644 with no significant differences between these treatments.

At an early timing in 1 trial, two spring applications of CA3642 achieved 99% and 98% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 98% efficacy for CA3644 with no significant differences between these treatments.
At a later timing on the same trial, two spring applications of CA3642 achieved 99% and 96% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 96% efficacy for CA3644 with no significant differences between these treatments.
In the same trial on the pods, two spring applications of CA3642 achieved 97% and 95% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 94% efficacy for CA3644 with no significant differences between these treatments.

In 1 trial on the stems, two spring applications of CA3642 achieved 97% and 84% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 90% efficacy for CA3644 with no significant differences between these treatments.

South-East EPPO zone

A summary of the efficacy of CA3642, applied twice as split-season applications at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against LEPTMA in BRSNW in the South-East EPPO zone is presented in Table 3.2-81.

After one autumn application across 2 trials, CA3642 achieved 89% and 84% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 83% efficacy for CA3644 with no significant differences between these treatments in either trial.

At an early timing across 3 trials, two split-season applications of CA3642 achieved 86% and 90% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 81% efficacy for CA3644 with no significant differences between these treatments in any of the 3 trials.
At a later timing in 1 trial, two split-season applications of CA3642 achieved 90% and 87% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 85% efficacy for CA3644 with no significant differences between these treatments.

Across 2 trials on the pods, two split-season applications of CA3642 achieved 94% and 93% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 92% efficacy for CA3644 with no significant differences between these treatments in either of the trials.

At an early timing across 2 trials, two split-season applications of CA3642 achieved 93% and 91% efficacy on the stems when applied at 1.2 L and 1.0 L/ha, respectively, compared to 91% efficacy for CA3644 with no significant differences between these treatments in either of the trials.
At a later timing across the same 2 trials, two split-season applications of CA3642 achieved 90% and 88% efficacy on the stems when applied at 1.2 L and 1.0 L/ha, respectively, compared to 85% efficacy for CA3644 with no significant differences between these treatments in either of the trials.
At even later timings across 3 other trials, two split-season applications of CA3642 achieved 63% and 49% efficacy on the stems when applied at 1.2 L and 1.0 L/ha, respectively, compared to 71% efficacy. The efficacy of CA3644 was statistically comparable to that of both rates of CA3642 in 2 trials, and significantly more effective than both rates of CA3642 in 1 trial.

Overall, there was a trend towards CA3642 providing a slightly higher level of control compared to CA3664, although there was no significant increase in any of the data sets, according to statistical analysis.

Table 3.2-79: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against LEPTMA in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	Untreated	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
After 1 application									
LEAF	GBR	16	-			4.47 a 4.5	2.70 b 39.6	2.85 b 36.2	2.67 b 40.3
LEAF	GBR	15	-			4.19 a 4.2	1.38 b 67.1	1.17 b 72.1	1.16 b 72.3
LEAF	DEU	15	-			13.13 a 13.1	1.76 h 86.6	2.33 g 82.3	2.02 h 84.6
LEAF	DEU	15	-			20.57 a 20.6	3.89 i 81.1	5.20 g 74.7	4.70 gh 77.2
LEAF	GBR	149	-			5.70 a 5.7	1.42 b 75.1	2.32 b 59.3	1.48 b 74.0
Mean efficacy				5**	***Mean*** Min Max	***9.6*** 4.2 20.6	***69.9*** 39.6 86.6	***64.9*** 36.2 82.3	***69.7*** 40.3 84.6
After 2 applications									
LEAF	DEU	49	21	P		4.50 a 4.5	0.00 c 100.0	0.00 c 100.0	0.00 c 100.0
LEAF	GBR	167	18			5.00 a 5.0	0.61 d 87.8	1.25 bcd 75.0	1.09 cd 78.2
LEAF	GBR	167	18	TA[14]		2.94 a 2.9	0.10 d 96.6	0.48 bc 83.7	0.30 cd 89.8
LEAF	DEU	67	39	P		5.83 a 5.8	0.00 c 100.0	0.00 c 100.0	0.00 c 100.0
After 2 applications									

Part Rated	Coun-try	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	Un-treated	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
STEM	GBR	167	18			4.22 a 4.2	1.10 cd 73.9	1.23 cd 70.9	1.50 cd 64.5
STEM	GBR	167	18	TS[18]		2.97 a 3.0	0.69 cd 76.8	0.80 cd 73.1	0.90 cd 69.7
STEM	FRA	209	71			17.52 a 17.5	6.45 d 63.2	5.34 d 69.5	6.20 d 64.6
Mean efficacy				2**	***Mean*** Min Max	***10.9*** 4.2 17.5	***68.6*** 63.2 73.9	***70.2*** 69.5 70.9	***64.5*** 64.5 64.6

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Table 3.2-80: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against LEPTMA in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – North-East EPPO zone

Part Rated	Coun-try	DA-A	DA-B	No. of trials & ARM *	Name Conc Type	UTC	CA3642 300 g/L SC		CA3664 350 g/L EC
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
After 1 application									
LEAF	LTU	14	-		PESSEV Efficacy	5.0 a 5.0	2.0 a 60.0	1.0 a 80.0	2.0 a 60.0
				1**	***Mean***	***5.0***	***60.0***	***80.0***	***60.0***
After 1 application									
LEAF	LTU	206	-		PESSEV Efficacy	5.950 a 6.0	3.580 b 39.8	3.300 b 44.5	3.320 b 44.2
				1**	***Mean***	***6.0***	***39.8***	***44.5***	***44.2***
After 2 applica-tions									
LEAF	POL	43	21		PESSEV Efficacy	8.40 a 8.4	0.13 b 98.5	0.15 b 98.2	0.18 b 97.9
				1	***Mean***	***8.4***	***98.5***	***98.2***	***97.9***
After 2 applica-tions									
LEAF	POL	58	36		PESSEV Efficacy	8.0 a 8.0	0.1 b 98.8	0.3 b 96.3	0.3 b 96.3
				1	***Mean***	***8.0***	***98.8***	***96.3***	***96.3***
After 2 applica-tions									
POD	POL	58	36		PESSEV Efficacy	10.7 a 10.7	0.3 b 97.2	0.5 b 95.3	0.6 b 94.4

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA3664 350 g/L EC**
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
POD	POL	256	50		PESSEV Efficacy	9.4 a 9.4	0.8 b 91.5	1.0 b 89.4	1.1 b 88.3
				2	Mean Min Max	10.1 9.4 10.7	94.3 91.5 97.2	92.3 89.4 95.3	91.3 88.3 94.4
				1**	***Mean***	***9.4***	***91.5***	***89.4***	***88.3***
				1	***Mean***	***10.7***	***97.2***	***95.3***	***94.4***
After 2 applica-tions									
STEM	POL	68	24		PESSEV Efficacy	8.9 a 8.9	0.3 c 96.6	1.4 bc 84.3	0.9 bc 89.9
STEM	POL	256	50		PESSEV Efficacy	6.8 a 6.8	0.6 b 91.2	1.9 b 72.1	1.4 b 79.4
				2	***Mean*** Min Max	***7.9*** 6.8 8.9	***93.9*** 91.2 96.6	***78.2*** 72.1 84.3	***84.6*** 79.4 89.9
				1**	***Mean***	***6.8***	***91.2***	***72.1***	***79.4***
				1	***Mean***	***8.9***	***96.6***	***84.3***	***89.9***

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Table 3.2-81: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against LEPTMA in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – South-East EPPO zone

Part Rated	**Trial Country**	**DA-A**	**DA-B**	**No. of tri-als & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
After 1 appli-cation									
LEAF	ROU	185	-			7.75 a 7.8	0.68 b 91.2	0.89 b 88.5	0.90 b 88.4
LEAF	ROU	185	-			7.93 a 7.9	1.10 cd 86.1	1.65 bcd 79.2	1.73 bcd 78.2
Mean efficacy				**2****	***Mean*** Min Max	***7.8*** 7.8 7.9	***88.7*** 86.1 91.2	***83.9*** 79.2 88.5	***83.3*** 78.2 88.4
After 2 appli-cations									
LEAF early	HUN	200	15			8.70 a 8.7	1.70 b 80.5	0.50 b 94.3	2.25 b 74.1

Part Rated	**Trial Country**	**DA-A**	**DA-B**	**No. of tri-als & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
	ROU	200	15			12.02 a 12.0	1.54 bc 87.2	1.87 bc 84.4	2.10 bc 82.5
	ROU	200	15			12.82 a 12.8	1.33 d 89.6	1.31 d 89.8	1.75 cd 86.3
Mean efficacy				**3****	***Mean*** Min Max	***11.2*** 8.7 12.8	***85.8*** 80.5 89.6	***89.5*** 84.4 94.3	***81.0*** 74.1 86.3
LEAF late	ROU	236	49	P		5.62 a 5.6	0.54 cd 90.4	0.72 cd 87.2	0.85 cd 84.9
Mean efficacy				1**	***Mean***	***5.6***	***90.4***	***87.2***	***84.9***
After 2 appli-cations									
POD	ROU	226	41			6.2 a 6.2	0.4 e 93.5	0.4 e 93.5	0.4 e 93.5
POD	ROU	226	41			6.3 a 6.3	0.4 de 93.7	0.5 cde 92.1	0.6 cde 90.5
Mean efficacy				**2****	***Mean*** Min Max	***6.3*** 6.2 6.3	***93.6*** 93.5 93.7	***92.8*** 92.1 93.5	***92.0*** 90.5 93.5
After 2 appli-cations									
STEM	ROU	200	15			6.29 a 6.3	0.33 b 94.8	0.38 b 94.0	0.37 b 94.1
STEM	ROU	200	15			6.02 a 6.0	0.53 de 91.2	0.72 cde 88.0	0.79 cde 86.9
Mean efficacy				2**	***Mean*** Min Max	***6.2*** 6.0 6.3	***93.0*** 91.2 94.8	***91.0*** 88.0 94.0	***90.5*** 86.9 94.1
STEM	ROU	226	41			7.5 a 7.5	0.9 d 88.0	1.0 d 86.7	1.2 d 84.0
STEM	ROU	226	41			9.4 a 9.4	0.8 efg 91.5	1.1 c-g 88.3	1.3 b-f 86.2
Mean efficacy				2**	***Mean*** Min Max	***8.5*** 7.5 9.4	***89.7*** 88.0 91.5	***87.5*** 86.7 88.3	***85.1*** 84.0 86.2
STEM	HUN	264	79			43.6 a 43.6	22.3 a 48.9	35.0 a 19.7	20.5 a 53.0
STEM	HUN	257	62			53.6 a 53.6	22.6 de 57.8	23.2 de 56.7	10.6 f 80.2
STEM	HUN	251	54			76.4	12.5 g	22.7 ef	15.3 fg

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
						a 76.4	83.6	70.3	80.0
				3**	***Mean***	***57.9***	***63.4***	***48.9***	***71.1***
					Min	43.6	48.9	19.7	53.0
					Max	76.4	83.6	70.3	80.2

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

16 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 at 1-1,2 l/ha achieved moderate effectiveness after 1 autumn application. The mean efficacy was 65-70% in 5 trials and similar effect has been noted for CA3664 (70%). After 2 applications, CA3642 at claimed dose rates presented results of 69-70% on stems. In the North-East EPPO climatic zone, moderate control was observed after 1 autumn application in the early assessment, either for CA3642 and CA36642 (60-80% vs 60%). Higher effectiveness was visible after 2 applications, comparable for both products. In the South-East EPPO zone, the test product at 1-1,2 l/ha achieved good control after 1 autumn application. Similar effect was observed for the reference product (84-89% vs 83%). In conclusion, the composition of AZX and PTZ at claimed dose rate in CA3642 is justified for control of LEPTMA in winter oilseed rape.

BRSNW – PYRPBR

Maritime EPPO zone

A summary of the efficacy of CA3642, applied twice as split-season applications (2 trials), at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against PYRPBR in BRSNW in the Maritime EPPO zone is presented in Table 3.2-82.

Across 2 trials, one autumn application of CA3642 achieved 43% and 34% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 38% efficacy for CA3644 with no significant differences between these treatments in either trial.
At an early timing across the same 2 trials, two split-season applications of CA3642 achieved 40% and 35% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 36% efficacy for CA3644 with no significant differences between these treatments in either trial.
At a later timing in one of these trials, two split-season applications of CA3642 achieved 37% and 27% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 37% efficacy for CA3644 with no significant differences between these treatments.

On the pods in one of these trials, two split-season applications achieved only low control for all treatments (2-11%) and the data is not therefore considered as valid for efficacy assessment.

At an early timing on the stems in one of these trials, two split-season applications of CA3642 achieved 64% and 62% efficacy on the leaves when applied at 1.2 L and 1.0 L/ha, respectively, compared to 58% efficacy for CA3644 with no significant differences between these treatments.

At a later timing across the 2 trials, two split-season applications of CA3642 achieved 71% and 59% efficacy on the stems when applied at 1.2 L and 1.0 L/ha, respectively, compared to 50% efficacy for CA3644 with no significant differences between these treatments in either trial.

Overall, there was a trend towards CA3642 providing a slightly higher level of control compared to CA3664, particularly on the stems at the later timing, although there was no significant increase in any of the data sets according to statistical analysis.

Table 3.2-82: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against PYRPBR in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – Maritime EPPO zone

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**Un-treated**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
After 1 application									
LEAF	FRA	135	-			11.21 a 11.2	8.35 a 25.5	8.91 a 20.5	8.34 a 25.6
LEAF	FRA	146	-			17.10 a 17.1	6.68 de 60.9	8.90 cde 48.0	8.50 cde 50.3
Mean efficacy				**2****	***Mean*** Min Max	***14.2*** 11.2 17.1	***43.2*** 25.5 60.9	***34.2*** 20.5 48.0	***37.9*** 25.6 50.3
After 2 applications									
LEAF	FRA	149	14			14.27 a 14.3	9.85 a 31.0	11.91 a 16.5	9.76 a 31.6
LEAF	FRA	160	14			12.45 a 12.5	6.36 ab 48.9	5.75 ab 53.8	7.48 ab 39.9
Mean efficacy				**2****	***Mean*** Min Max	***13.4*** 12.5 14.3	***39.9*** 31.0 48.9	***35.2*** 16.5 53.8	***35.8*** 31.6 39.9
LEAF	FRA	177	42			16.86 a 16.9	10.55 b 37.4	12.38 b 26.6	10.62 b 37.0
Mean efficacy				**1****	***Mean***	***16.9***	***37.4***	***26.6***	***37.0***
POD	FRA	220	74			9.87 a 9.9	9.66 a 2.1	8.82 a 10.6	9.25 a 6.3
				1**	***Mean***	***9.9***	***2.1***	***10.6***	***6.3***
STEM	FRA	160	14			6.15 a 6.2	2.24 c 63.6	2.35 c 61.8	2.60 c 57.7
Mean efficacy				**1****	***Mean***	***6.2***	***63.6***	***61.8***	***57.7***
STEM	FRA	195	60			6.48 a 6.5	1.41 b 78.2	2.40 b 63.0	2.10 b 67.6
STEM	FRA	229	83			15.33 a 15.3	5.48 cd 64.3	6.84 bcd 55.4	10.53 abc 31.3
Mean efficacy				**2****	***Mean*** Min	***10.9*** 6.5	***71.2*** 64.3	***59.2*** 55.4	***49.5*** 31.3

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	Un-treated	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
					Max	15.3	78.2	63.0	67.6

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

2 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothi-oconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 at 1-1,2 l/ha achieved very poor effectiveness after 1 autumn application. After 2 applications, the mean efficacy was very low to moderate. CA3642 at claimed dose rates presented results of 59-71% on stems in the later assessment. Significant inferior efficacy was visible for CA3664. However, insufficient results have been noted after 1 application. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

BRSNW – SCLESC

<u>Maritime EPPO zone</u>

A summary of the efficacy of CA3642, applied twice as split-season applications (6 trials), at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against SCLESC in BRSNW in the Maritime EPPO zone is presented in Table 3.2-83.

Across 6 trials, two split-season applications of CA3642 achieved 81% efficacy on the stems when applied at both 1.2 L and 1.0 L/ha, compared to 81% efficacy for CA3644 with no significant differences between these treatments in any of the 6 trials.

<u>North-East EPPO zone</u>

A summary of the efficacy of CA3642, applied twice as split-season applications (4 trials) or as two spring applications (1 trial), at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against SCLESC in BRSNW in the North-East EPPO zone is presented in Table 3.2-84.

At an early timing in one trial, two split-season applications of CA3642 achieved 95% and 84% efficacy on the stems at the rates of 1.2 L/ha and 1.0 L/ha, respectively, compared to 95% efficacy for CA3664. The efficacy of CA3664 was statistically comparable to the higher 1.2 L/ha rate of CA3642 and significantly more effective than the lower 1.0 L/ha rate of CA3642.
At a later timing in one trial, two split-season applications of CA3642 achieved 67% and 59% efficacy on the stems at the rates of 1.2 L/ha and 1.0 L/ha, respectively, compared to 61% efficacy for CA3664 with no significant differences between these treatments.
At even later timings across 4 trials, two split-season applications of CA3642 achieved 81% and 66% efficacy on the stems at the rates of 1.2 L/ha and 1.0 L/ha, respectively, compared to 74% efficacy for CA3664. The efficacy of CA3664 was statistically comparable to that of the higher 1.2 L/ha rate of CA3642 in 3 of the trials and significantly less effective in 1 trial. The efficacy of CA3664 was statistically comparable to that of the lower 1.0 L/ha rate of CA3642 in 2 of the trials and significantly more

effective in 2 trials.

South-East EPPO zone

A summary of the efficacy of CA3642, applied twice as split-season applications (1 trial), at 1.2 L (180 g azoxystrobin/ha + 180 g prothioconazole/ha) or 1.0 L/ha (150 g azoxystrobin/ha + 150 g prothioconazole/ha) directly compared with that of CA3664 applied at 1.0 L/ha (200 g azoxystrobin/ha + 150 g prothioconazole/ha), against SCLESC in BRSNW in the South-East EPPO zone is presented in Table 3.2-85.

In 1 trial, two split-season applications of CA3642 achieved 86% efficacy on the stems when applied at both 1.2 L and 1.0 L/ha, compared to 86% efficacy for CA3644 with no significant differences between these treatments.

Table 3.2-83: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SCLESC in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – Maritime EPPO zone

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No. of tri-als & ARM***	**Name Conc Type Rate**	**UTCd**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC**
							1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha**
After 2 appli-cations									
STEM	FRA	229	64			14.75 a 14.8	1.20 bc 91.9	1.20 bc 91.9	0.20 c 98.6
STEM	FRA	195	60			6.37 a 6.4	0.59 b 90.7	0.46 b 92.8	1.15 b 81.9
STEM	FRA	229	83			18.15 a 18.2	0.40 d 97.8	0.85 d 95.3	0.50 d 97.2
STEM	DEU	275	84	T4		29.06 a 29.1	7.50 e 74.2	8.00 e 72.5	7.69 e 73.5
STEM	DEU	266	83	T4		23.00 a 23.0	4.06 g 82.3	5.38 fg 76.6	4.13 g 82.0
STEM	DEU	286	78	T4		32.81 a 32.8	15.94 bc 51.4	14.81 bc 54.9	15.25 bc 53.5
				6**	***Mean*** Min Max	***20.7*** 6.4 32.8	***81.4*** 51.4 97.8	***80.7*** 54.9 95.3	***81.2*** 53.5 98.6

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Table 3.2-84: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SCLESC in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha	1 l/ha 200 g AZX/ha + 150 g PTZ/ha
After 2 applications									
STEM	POL	226	16		PESS EV Efficacy	10.2 a 10.2	0.5 d 95.1	1.6 bc 84.3	0.5 d 95.1
				1	***Mean***	***10.2***	***95.1***	***84.3***	***95.1***
After 2 applications									
STEM	POL	239	34		PESS EV Efficacy	9.0 a 9.0	3.0 c 66.7	3.7 c 58.9	3.5 c 61.1
STEM	POL	84	38	+	PESS EV Efficacy	15.3 a 15.3	3.3 b 78.4	1.8 b 88.2	2.3 b 85.0
				2	Mean Min Max	12.2 9.0 15.3	72.5 66.7 78.4	73.6 58.9 88.2	73.0 61.1 85.0
				1**	***Mean***	***9.0***	***66.7***	***58.9***	***61.1***
				1	***Mean***	***15.3***	***78.4***	***88.2***	***85.0***
After 2 applications									
STEM	POL	237	50		PESS EV Efficacy	10.5 a 10.5	3.0 f 71.4	4.5 e 57.1	3.5 ef 66.7
STEM	POL	271	61		PESS EV Efficacy	24.1 a 24.1	2.0 d 91.7	6.6 c 72.6	2.2 d 90.9
STEM	POL	269	62		PESS EV Efficacy	19.5 a 19.5	3.4 e 82.6	5.2 de 73.3	7.1 cd 63.6
STEM	POL	268	62		PESS EV Efficacy	10.7 a 10.7	2.3 d 78.5	4.3 c 59.8	2.9 d 72.9
				4**	***Mean*** Min Max	***16.2*** 10.5 24.1	***81.0*** 71.4 91.7	***65.7*** 57.1 73.3	***73.5*** 63.6 90.9

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Table 3.2-85: Efficacy of CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) against SCLESC in BRSNW compared to the efficacy of a product containing azoxystrobin and prothioconazole in a different ratio – South-East EPPO zone

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA3664 (200 g/L AZX + 150 g/L PTZ) 350 g/L EC
					Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 200 g AZX/ha + 150 g PTZ/ha
After 2 applications									
STEM	HUN	232	47			33.4 a 33.4	4.6 b 86.2	4.8 b 85.6	4.8 b 85.6
				1**	***Mean***	***33.4***	***86.2***	***85.6***	***85.6***

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

13 efficacy trials were available to justify the mixture of 150g/l of azoxystrobin and 150 g/l of prothioconazole contained in CA3642. In the Maritime EPPO climatic zone, CA3642 at 1-1,2 l/ha achieved good results of 81% after 2 applications. Similar effect has been noted for the reference product of CA3664 in all 6 trials. In the North-East EPPO zones, the test product at claimed doses presented moderate to high level of control after 2 applications. Comparable efficacy was observed for the reference product of CA3664 in the early assessment (84-95% for CA3642 vs 95% for CA3664), the late assessment (73-74% vs 73%) and the very late assessment (66-81% vs 74%). Also in the South-East EPPO climatic zone, no significant differences between test and reference products were visible in 1 trial. In conclusion, the composition of AZX and PTZ at claimed dose rate in CA3642 is justified for control of SCLESC in winter oilseed rape. However, no results after 1 application have been submitted by the applicant.

Summary of the ratio justification data on oilseed rape

Overall, CA3642 achieved either similar levels of control compared to CA3664, or slightly higher control in the case of PYRPBR in the Maritime EPO zone and LEPTMA in the South-East EPPO zone.

The results demonstrate there no benefit is derived from the increased weighting of azoxystrobin in the formulation CA3664, compared to the equal weighting with prothioconazole in ~~CA3645~~ CA3642. In fact on the more difficult to control pathogens the proposed formulation ~~CA3645~~ CA3642 demonstrated overall better efficacy. The data therefore supports the justification for the chosen ratio in the mixture product.

Target disease	EPPO zone	Part assessed	No. applns	CA3642 1.2 L/ha	CA3642 1.0 L/ha	CA3664 1.0 L/ha
BOTRCI	Maritime	Leaves	2	41	40	41
ERYSCR	Maritime	Leaves	2	35	35	37
	South-East	Leaves early	2	76	75	81
		Leaves late	2	41	33	60
		Pods	2	47	24	57
		Stems	2	41	29	55
LEPTMA	Maritime	Leaves	1	70	65	70
		Leaves early	2	100	100	100
		Leaves late		100	100	100
		Stems	2	67	70	65

	North-East	Leaves early	1	60	80	60
		Leaves late	1	40	45	44
		Pods	2	92	89	88
		Stems	2	91	72	79
		Leaves early	2	99	98	98
		Leaves late	2	99	96	96
		Pods	2	97	95	94
		Stems	2	97	84	90
	South-East	Leaves	1	89	84	83
		Leaves early	2	86	90	81
		Leaves late	2	90	87	85
		Pods	2	94	93	92
		Stems early	2	93	91	91
		Stems late	2	90	88	85
		Stems later	2	63	49	71
PYRPBR	Maritime	Leaves	1	43	34	38
		Leaves early	2	40	35	36
		Leaves late	2	37	27	37
		Stems early	2	64	62	58
		Stems late	2	71	59	50
SCLESC	Maritime	Stems	2	81	81	81
	North-East	Stems early	2	95	84	95
		Stems late	2	67	59	61
		Stems later	2	81	66	74
	South-East	Stems	2	86	86	86

Further justification of the co-formulation

Resistance
As stated in EPPO Standard PP 1/306(1), for disease control, "Strategies for resistance management include using fungicides from groups having different MOAs in alternation or recommended formulated mixtures or tank-mixes.".

Since the two components of CA3642 are from different mode of action groups (azoxystrobin FRAC fungicide Group 11, FRAC, prothioconazole FRAC fungicide Group 3) and both demonstrate efficacy against the proposed pathogens, this is a clear benefit of the co-formulation.

As both active substances now have some cases of resistance recorded (see Section 3.3), it is recommended by FRAC to apply each only in combination/rotation with other modes of action. The co-formulation enables users to conveniently integrate two modes of action in a single application. As demonstrated from the data the combination provides better and more reliable efficacy, therefore pathogens with a propensity for resistance are controlled which prevents the proliferation of resistant populations and can therefore secure future efficacy.

Reduction of amount of substances applied
The components of the co-formulation are currently generally authorised at a rate of 200 g/ha of azoxystrobin and 200 g/ha of prothioconazole. The proposed dose rate for CA3642 is from 150 g/ha azoxystrobin + 150 g/ha prothioconazole (minimum rate of 1.0 L/ha) to 210 g/ha azoxystrobin + 210 g/ha prothioconazole (maximum rate of 1.4 L/ha). Therefore, applying the co-formulation at the lower (1.0 L/ha rate) or the intermediate rate (1.2 L/ha: 180 + 180 g/ha) results in lower use of the substances compared to tank-mixing or applying in sequence.

Other aspects
The potential disadvantages of a co-formulation are also considered within EPPO Standard PP1/306(1):

- The optimal timing of both active substances for control of the target pathogens is the same, therefore there is no reduction in efficacy due to inappropriate timing of the application, or overuse due to one component not being effective at the application timing.

- The dose rates for the single substance products are comparable across the target pathogens, therefore no overuse or unnecessary use is identified.
- As is clearly demonstrated by the data above, there are no antagonistic effects from the combination of the two active substances in CA3642.
- As demonstrated in the adverse effects section, no crop damage was observed from applications of the co-formulation.

Summary and conclusions on justification of the co-formulation

In the trials presented to support the justification of the co-formulation, a considerably better efficacy was observed after application of CA3642 at both dose rates compared to the single active substance products, in particular on the more challenging pathogens. No antagonistic effects were observed from the co-formulation, whereby the efficacy would be reduced compared to the single active applications.

In the data presented to support the mixture ratio, also better efficacy was observed on the more challenging pests from the proposed formulation compared to the formulation with a higher loading of azoxystrobin. No benefit was observed from the increased weighting of azoxystrobin in the alternative formulation. Hence the data supports the choice of ratio in the product CA3645.

It is also interesting to note that prothioconazole remains effective on many pathogens which have recorded resistance to other Group 3 and to Group 11 fungicides, hence an equivalent level of loading of prothioconazole is considered more appropriate than a co-formulation with more azoxystrobin.

In addition to the improvement in efficacy, the primary benefit of the co-formulation is to provide the user with a broad-spectrum fungicide in a single product, whilst reducing the risk of resistance development in key pathogens, due to the use of 2 different modes of action. Both active substances are effective on the target diseases present at the proposed time of application.

Furthermore, at the lowest or intermediate proposed rates for CA36452, the rates of each individual active substance applied is lower than the current authorised rates for those individual active substance products.

Another benefit is that the development of the co-formulated product reduces excessive energy and water use, since applications are made in a single spray and saves time, and less packaging is required.

3.2.2 Minimum effective dose tests (KCP 6.2)

Wheat (TRZAW)

A total of 100 efficacy trials are available on winter wheat in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.4 L/ha for CA3642.
In certain circumstances, of low infestation in particular, 1.2 L/ha could be sufficient. Therefore, the range of 1.2 L/ha – 1.4 L/ha is claimed.
Data are presented for the following key representative intended uses on winter wheat:

- Septoria leaf spot – *Zymoseptoria tritici* (SEPTTR)
- Powdery mildew – *Blumeria graminis* / *Blumeria graminis* f. sp. *tritici* (ERYSGR / ERYSGT)
- Brown rust – *Puccinia recondita* / *Puccinia triticina* (PUCCRE / PUCCRT)
- Yellow rust – *Puccinia striiformis* / *Puccinia striiformis* f. sp. *tritici* (PUCCST / PUCCSI)
- Tan spot – *Pyrenophora tritici-repentis* (PYRNTR)

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-122.

Comments of zRMS:

All efficacy trials were carried out in winter wheat. No trials were available for spring wheat. The cMSs are kindly asked to consider this crop on national level. This species cannot be accepted in Poland.

Winter Wheat (TRZAW) – Septoria leaf spot (SEPTTR – *Zymoseptoria tritici*)

73 field trials were established between 2019 and 2021 in order to determine the minimum effective dose of CA3642 for the control of *Zymoseptoria tritici* (SEPTTR) in winter wheat.
The trials from the Maritime EPPO zone (32) were carried out in Germany, the United Kingdom and Northern France. The trials from the North-East EPPO zone (26) were carried out in Poland, Latvia and Lithuania. The trials from the South-East EPPO zone (15) were carried out in Hungary, Romania and Bulgaria.

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) and compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

TRZAW – SEPTTR – Maritime EPPO zone

A total of 32 trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Zymoseptoria tritici* (SEPTTR).
The trials were carried out in France (8), Germany (10) and Great Britain (14) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 41 and the second application was done 15 - 37 days later, at BBCH 39 - 65.

Table 3.2-86: Minimum effective dose of CA3642 after 2 applications against SEPTTR in wheat – Early assessment timing - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	GBR	51	17	TIO	PESSEV Efficacy	8.1 a a	**4.1 a** ~~49.4~~ **49.6** a	**4.2 a** ~~48.1~~ **48.2** a	3.5 a ~~56.8~~ 56.3 a
	GBR	40	15		PESSEV Efficacy	4.56 a	**0.37 b** **91.9**	**0.90 b** **80.3**	0.61 b ~~86.6~~ 86.7
Mean efficacy				*2*	*Mean* Min Max	*6.3* 4.6 8.1	***70.6*** ~~49.4~~ **49.6** **91.9**	***64.2*** ~~48.1~~ **48.2** **80.3**	*71.7* ~~56.8~~ 56.3 ~~86.6~~ 86.7
LEAF2 early	GBR	42	16		PESSEV Efficacy	4.1 a	**1.98 b** **52.1**	**1.94 b** **53.0**	2.08 b ~~49.6~~ 49.7
	GBR	37	20		PESSEV Efficacy	9.8 a	**3.1 d** ~~68.4~~ **68.3**	**4.1 c** **58.2**	5.2 b ~~46.9~~ 47.1
	FRA	31	14	TA	PESSEV Efficacy	5.2 a a	**2.0 b** ~~61.5~~ **62.0** b	**2.0 b** **61.5** b	2.3 b ~~55.8~~ 55.2 b
	GBR	51	17		PESSEV Efficacy	18.8 a	**9.8 b** ~~47.9~~ **47.8**	**8.8 b** **53.2**	8.0 b ~~57.4~~ 57.3

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
				TIO		a	**100.0 a**	**100.0 a**	93.8 a
	GBR	33	15		PESSEV Efficacy	10.33 a	**3.74 e 63.8**	**5.03 d 51.3**	7.00 b 32.2
	FRA	43	13	TA	PESSEV Efficacy	17.8 a a	**7.2 cd** ~~59.6~~ **59.5** cd	**4.6 d 74.2** d	8.8 bcd ~~50.6~~ 50.5 cd
	GBR	36	15		PESSEV Efficacy	8.76 a	**0.00 d 100.0**	**0.00 d 100.0**	0.00 d 100.0
	GBR	40	15		PESSEV Efficacy	33.13 a	**8.46 b 74.5**	**9.80 b 70.4**	10.10 b 69.5
	GBR	48	18		PESSEV Efficacy	15.0 a	**6.3 b** ~~58.0~~ **57.9**	**5.9 b** ~~60.7~~ **61.0**	6.0 b ~~60.0~~ 59.8
	FRA	43	16		PESSEV Efficacy	6.68 a	**2.76 c** ~~58.7~~ **58.6**	**2.46 c** ~~63.2~~ **63.1**	3.33 c ~~50.1~~ 50.2
Mean efficacy				*10*	*Mean* Min Max	*13.0* 4.1 33.1	*~~64.4~~* ***64.5*** ~~47.9~~ **47.8** **100.0**	*~~64.6~~* ***64.5*** **51.3** **100.0**	*57.2* 32.2 100.0
LEAF3 early	GBR	48	18		PESSEV Efficacy	75.8 a	**53.3 c 29.7**	**52.6 c 30.6**	53.1 c 29.9
	FRA	43	16		PESSEV Efficacy	19.85 a	**8.85 bc 55.4**	**6.23 c 68.6**	11.06 bc 44.3
	GBR	37	20	TA	PESSEV Efficacy	23.8 a a	**11.2 e** ~~52.9~~ **53.0** e	**13.2 d** ~~44.5~~ **44.6** d	14.8 c ~~37.8~~ 37.5 c
	FRA	31	14		PESSEV Efficacy	15.1 a	**5.3 b** ~~64.9~~ **64.7**	**6.4 b** ~~57.6~~ **57.5**	6.8 b ~~55.0~~ 54.7
	GBR	51	17	TIO	PESSEV Efficacy	33.4 a a	**28.8 a** ~~13.8~~ **14.0** a	**26.4 a 21.0** a	26.2 a ~~21.6~~ 21.7 a
	GBR	33	15		PESSEV Efficacy	17.81 a	**6.41 f 64.0**	**6.88 f 61.4**	9.10 d 48.9
	FRA	43	13		PESSEV Efficacy	87.6 a	**54.7 cd** ~~37.6~~ **37.5**	**52.1 d 40.5**	62.3 cd 28.9
	GBR	34	15		PESSEV Efficacy	4.19 a	**3.53 a 15.8**	**3.94 a 6.0**	2.60 a 37.9
	GBR	36	15		PESSEV Efficacy	31.63 a	**10.51 c 66.8**	**13.28 c 58.0**	14.29 c 54.8
	GBR	48	16		PESSEV Efficacy	10.45 a	**1.23 d** ~~88.2~~ **88.3**	**2.24 b 78.6**	2.50 b 76.1
	DEU	32	14	TA	PESSEV Efficacy	10.4 a a	**2.8 bc** ~~73.1~~ **73.6** bc	**4.4 bc** ~~57.7~~ **57.5** b	2.8 bc ~~73.1~~ 73.5 bc
	GBR	40	15		PESSEV Efficacy	45.56 a	**24.10 b 47.1**	**25.50 b 44.0**	26.09 b 42.7
	GBR	38	15		PESSEV Efficacy	18.08 a	**7.86 bcd 56.5**	**7.91 bcd** ~~56.3~~ **56.2**	9.29 bc 48.6
	GBR	42	16		PESSEV Efficacy	21.63 a	**10.14 b 53.1**	**10.55 b 51.2**	10.35 b 52.1
	DEU	53	16	TA	PESSEV Efficacy	11.56 a a	**3.75 c 67.6** c	**4.86 b 58.0** b	0.63 hi 94.6 i
Mean efficacy				*15*	*Mean* Min Max	*28.5* 4.2 87.6	*~~52.4~~* ***52.5*** ~~13.8~~ **14.0** ~~88.2~~ **88.3**	***48.9*** **6.0** **78.6**	*49.8* ~~21.6~~ 21.7 94.6

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF4 early	GBR	51	17		PESSEV Efficacy	69.1 a	**41.3 bc** **40.2**	**36.2 c** **47.6**	42.7 bc 38.2
	FRA	32	14		PESSEV Efficacy	11.2 a	**5.6 b** ~~50.0~~ **50.3**	**3.8 b** ~~66.1~~ **66.4**	4.4 b ~~60.7~~ 60.5
	DEU	49	14		PESSEV Efficacy	11.2 a	**2.4 c** ~~78.6~~ **78.2**	**4.9 bc** ~~56.3~~ **56.5**	6.3 b ~~43.8~~ 43.5
	GBR	36	15		PESSEV Efficacy	73.85 a	**24.88 cd** **66.3**	**32.19 bcd** **56.4**	34.18 bc 53.7
	DEU	35	15		PESSEV Efficacy	26.84 a	**9.01 cd** **66.4**	**12.88 bc** **52.0**	14.68 bc 45.3
	DEU	32	14		PESSEV Efficacy	10.9 a	**4.5 b** ~~58.7~~ **58.9**	**5.2 b** ~~52.3~~ **52.7**	5.8 b ~~46.8~~ 47.2
	GBR	42	16		PESSEV Efficacy	56.19 a	**32.06 b** **42.9**	**31.94 b** **43.2**	32.00 b 43.1
	DEU	44	16	TA	PESSEV Efficacy	4.90 a a	**2.68 d** ~~45.3~~ **45.4** d	**2.98 cd** ~~39.2~~ **39.3** d	2.81 cd ~~42.7~~ 42.6 d
	FRA	38	15	TA	PESSEV Efficacy	33.2 a a	**5.9 b** ~~82.2~~ **82.1** b	**6.5 b** ~~80.4~~ **80.5** b	6.4 b ~~80.7~~ 80.6 b
	DEU	43	15		PESSEV Efficacy	5.20 a	**0.94 c** ~~81.9~~ **82.0**	**2.41 bc** ~~53.7~~ **53.6**	2.09 bc ~~59.8~~ 59.9
Mean efficacy				*10*	*Mean* Min Max	*30.3* 4.9 73.9	***61.3*** **40.2** ~~82.2~~ **82.1**	~~*54.7*~~ ***54.8*** ~~39.2~~ **39.3** ~~80.4~~ **80.5**	*51.5* 38.2 ~~80.7~~ 80.6

For **leaf level 1 early**, the mean efficacy after two applications across two trials reveals no clear dose response for the tested dose rates. The difference in mean efficacy between 1.4 L and 1.2 L/ha of CA3642 was 6%, while the efficacy of the lowered dose rate was higher by 1% compared to the 1.4 L/ha dose rate.
The detailed view on the single trial results demonstrate no statistically significant difference between the target dose rates and the lowered dose rate in any of the trials.

For **leaf level 2 early**, the mean efficacy after two applications in ten trials demonstrates a lower performance of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642 (difference 7 and 7% respectively). The single trial results demonstrate statistically significant dose response across the three dose rates in two trials. The numerical difference between the 1.4 L/ha of CA3642 and the 1.0 L/ha dose rate was up to 31% in one trial and 19% for the difference between the 1.4 L/ha of CA3642 and the 1.0 L/ha dose rate. For one trial, the performance across all three dose rates was equivalent.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, 15 trials with assessments on **leaf level 3 early** were available. The mean efficacy reveals no dose response across the three tested dose rates. The 1.4 L/ha dose rate demonstrate highest mean efficacy, while the 1.0 L/ha dose rate was superior to the target 1.2 L/ha dose rate.
The single trial results demonstrate statistically significant dose response across the three dose rates each in two trials. In one trial, the two target dose rates were statistically significantly superior to the lowered dose rate. In one trial, the efficacy of the lowered dose rate was statistically significantly higher than the efficacy of each target dose rate. No statistically significant difference between the target dose rates and the lowered dose rate was found in any of the other trials.

For **leaf level 4 early**, the mean efficacy after two applications across three trials reveals dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 10% and 3% respectively. One single trial result demonstrate a statistically significant difference across the three dose rates each. No statistically significant difference between the target dose rates and the lowered dose rate was found in any of the other trials.

Table 3.2-87: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	GBR	55	30		PESSEV Efficacy	8.5 a	**2.0 b** ~~76.5~~ **76.2**	**2.5 b** ~~70.6~~ **70.9**	2.8 b ~~67.1~~ 66.9
	FRA	62	32	TS	PESSEV Efficacy	67.2 a a	**14.2 b** **78.9** bc	**12.1 b** **82.0** c	19.0 b ~~71.7~~ 71.8 bc
	FRA	57	30		PESSEV Efficacy	17.6 a	**5.3 bc** ~~69.9~~ **69.8**	**5.9 bc** ~~66.5~~ **66.4**	5.6 bc ~~68.2~~ 68.3
	FRA	56	33	TL	PESSEV Efficacy	8.15 a a	**0.65 c** **92.0** ef	**1.08 c** ~~86.7~~ **86.8** de	1.14 c 86.0 de
Mean efficacy				*4*	*Mean* Min Max	*25.4* 8.2 67.2	~~*79.3*~~ ***79.2*** ~~69.9~~ **69.8** **92.0**	***76.5*** ~~66.5~~ **66.4** ~~86.7~~ **86.8**	~~*73.2*~~ *73.3* ~~67.1~~ 66.9 86.0
LEAF2 late	FRA	57	30		PESSEV Efficacy	68.7 a	**10.4 d** **84.9**	**12.1 d** **82.4**	14.8 cd 78.5
	DEU	57	29	TL	PESSEV Efficacy	10.2 a a	**2.0 d** ~~80.4~~ **80.2** e	**2.8 cd** ~~72.5~~ **72.8** cd	3.6 c ~~64.7~~ 65.2 c
	DEU	45	30	TA	PESSEV Efficacy	4.5 a a	**0.5 b** ~~88.9~~ **88.6** c	**0.6 b** **86.7** c	0.5 b 88.9 c
	DEU	57	29		PESSEV Efficacy	6.8 a	**3.3 cd** ~~51.5~~ **51.1**	**3.1 de** ~~54.4~~ **53.7**	3.9 bcd 42.6
	GBR	55	30		PESSEV Efficacy	68.7 a	**13.5 b** **80.3**	**15.7 b** ~~77.1~~ **77.2**	16.3 b 76.3
	DEU	60	25	TL	PESSEV Efficacy	8.8 a a	**1.0 d** ~~88.6~~ **89.2** cd	**1.4 cd** ~~84.1~~ **84.6** cd	3.0 cd ~~65.9~~ 65.7 bc
	FRA	62	32		PESSEV Efficacy	100.0 a	**67.6 def** **32.4**	**59.8 f** **40.2**	83.0 bc 17.0
	FRA	56	33	TL	PESSEV Efficacy	35.43 a a	**3.80 cd** **89.3** de	**4.19 cd** **88.2** de	5.44 cd 84.6 cd
Mean efficacy				*8*	*Mean* Min Max	*37.9* 4.5 100.0	***74.5*** **32.4** **89.3**	***73.2*** **40.2** **88.2**	~~*64.8*~~ *65.0* 17.0 ~~88.9~~ 89.8
LEAF3 late	DEU	48	28		PESSEV Efficacy	25.1 a	**0.2 c** **99.2**	**0.7 c** ~~97.2~~ **97.4**	1.7 bc 93.2
	FRA	38	15		PESSEV Efficacy	5.2 a	**0.2 c** **96.2**	**0.5 c** ~~90.4~~ **90.2**	0.2 c ~~96.2~~ 95.7
Mean efficacy				*2*	*Mean* Min	*15.2* 5.2	***97.7*** **96.2**	***93.8*** ~~90.4~~ **90.2**	~~*94.7*~~ *94.5* 93.2

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Max	25.1	**99.2**	~~97.2~~ **97.4**	~~96.2~~ 95.7

For **leaf level 1 late**, the mean efficacy after two applications across four trials reveals slight dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 6% and 3% respectively. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, eight trials with assessments on **leaf level 2 late** were available. The mean efficacy reveals a clear dose response between the 1.4 L/ha and 1.2 L/ha on the one hand and the 1.0 L/ha dose rate (10 and 8% respectively). The mean efficacy of the target dose rates was comparable. The single trial results demonstrate statistically significant difference between the target dose rates and the lowered dose rate in one of the trials with a clear numerical difference of 15% and 23% respectively. The performance of the 1.2 L/ha dose rate was slightly superior to the highest dose rate. In one trial, the difference between the 1.4 L/ha dose rate was statistically significantly superior the 1.0 L/ha dose rate. For all other trials, no statistically significant difference was assessed.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, two trials with assessments on **leaf level 3 late** were available. No dose response in the mean efficacy was observable. The 1.4 L/ha dose rate reached highest efficacy, while the efficacy of the 1.2 L/ha dose rate was the lowest. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

Table 3.2-88: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Very late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	GBR	71	41		PESSEV Efficacy	37.4 a	**11.1 d** ~~70.3~~ **70.4**	**11.8 d** ~~68.4~~ **68.6**	12.6 d ~~66.3~~ 66.4
	FRA	70	43	TA	PESSEV Efficacy	98.9 a a	**58.95 ef 40.4** e	**58.75 ef 40.6** e	61.94 def 37.4 de
	GBR	59	42		PESSEV Efficacy	9.9 a	**4.8 d** ~~51.5~~ **51.6**	**5.4 bc** ~~45.5~~ **45.6**	5.5 b ~~44.4~~ 43.9
	FRA	58	41	TA	PESSEV Efficacy	14.9 a a	**5.9 c** ~~60.4~~ **60.3** c	**6.9 bc** ~~53.7~~ **54.1** bc	7.3 bc 51.0 bc
	GBR	74	40		PESSEV Efficacy	22.4 a	**6.1 c** ~~72.8~~ **72.7**	**8.4 bc** ~~62.5~~ **62.3**	8.1 bc ~~63.8~~ 63.6
	GBR	65	43	TA	PESSEV Efficacy	6.26 a a	**0.20 d 96.8** c	**1.57 bc** ~~74.9~~ **75.0** b	0.25 d ~~96.0~~ 96.1 c
	GBR	59	41		PESSEV	10.0 a	**2.5 c**	**3.1 bc**	2.8 bc

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Efficacy		~~75.0~~ **74.8**	~~69.0~~ **69.1**	~~72.0~~ 72.5
	FRA	62	44	TA	PESSEV Efficacy	10.5 a a	**0.5 c** ~~95.2~~ **95.1** c	**0.8 c** ~~92.4~~ **92.7** c	1.0 c ~~90.5~~ 90.3 c
	DEU	72	37	TL	PESSEV Efficacy	10.8 a a	**2.6 cd** ~~75.9~~ **75.7** cd	**4.0 bcd** ~~63.0~~ **63.1** bc	5.9 b ~~45.4~~ 45.5 b
	GBR	67	47		PESSEV Efficacy	65.6 a	**23.9 b** ~~63.6~~ **63.5**	**26.2 b** **60.1**	32.1 b 51.1
	GBR	60	41		PESSEV Efficacy	10.2 a	**6.4 b** ~~37.3~~ **37.0**	**6.0 b** ~~41.2~~ **41.4**	7.2 b ~~29.4~~ 29.5
	GBR	63	42	TA	PESSEV Efficacy	38.2 a a	**3.1 f** ~~91.9~~ **92.0** g	**9.4 e** **75.4** e	16.7 c ~~56.3~~ 56.2 c
	DEU	69	49	TA	PESSEV Efficacy	14.7 a a	**0.7 d** ~~95.2~~ **95.1** cd	**1.1 cd** ~~92.5~~ **92.6** cd	1.5 cd 89.8 cd
	DEU	64	46	TL	PESSEV Efficacy	16.3 a a	**8.0 bc** ~~50.9~~ **51.3** bc	**6.3 bc** ~~61.3~~ **61.2** c	8.7 bc ~~46.6~~ 46.7 bc
	FRA	84	53		PESSEV Efficacy	9.3 a	**4.4 b** ~~52.7~~ **52.8**	**4.7 b** ~~49.5~~ **49.0**	4.6 b ~~50.5~~ 50.6
	GBR	72	46		PESSEV Efficacy	87.4 a	**70.1 d** **19.8**	**64.8 f** ~~25.9~~ **26.0**	67.3 e 23.0
	DEU	66	49	TA	PESSEV Efficacy	34.4 a a	**9.2 g** ~~73.3~~ **73.4** g	**16.8 def** **51.2** def	23.4 bcd ~~32.0~~ 32.1 bcd
	DEU	67	39		PESSEV Efficacy	7.54 a	**3.23 c** **57.2**	**2.95 c** **60.9**	3.25 c 56.9
	FRA	72	45		PESSEV Efficacy	90.2 a	**68.3 ab** **24.3**	**77.3 ab** **14.3**	73.6 ab 18.4
Mean efficacy				*19*	*Mean* Min Max	*29.7* 6.3 98.9	~~*60.2*~~ ***63.4*** **19.8** **96.8**	~~*55.1*~~ ***58.1*** **14.3** **92.5**	~~*51.0*~~ *53.7* 18.4 ~~96.0~~ 96.1
LEAF2 very late	GBR	59	42		PESSEV Efficacy	21.4 a	**10.1 f** **52.8**	**9.7 f** **54.7**	11.7 d ~~45.3~~ 45.4
	GBR	74	40		PESSEV Efficacy	52.9 a	**23.3 c** ~~56.0~~ **55.9**	**22.9 c** **56.7**	27.4 c ~~48.2~~ 48.1
	GBR	65	43		PESSEV Efficacy	14.69 a	**1.19 b** **91.9**	**2.02 b** ~~86.2~~ **86.3**	0.81 b 94.5
	GBR	59	41		PESSEV Efficacy	23.9 a	**8.0 f** ~~66.5~~ **66.6**	**14.0 d** ~~41.4~~ **41.6**	16.2 bc ~~32.2~~ 32.3
	FRA	54	36		PESSEV Efficacy	37.9 a	**14.7 bc** ~~61.2~~ **61.3**	**14.1 bc** ~~62.8~~ **62.7**	19.0 bc ~~49.9~~ 49.8
	DEU	72	37		PESSEV Efficacy	22.1 a	**12.5 c** ~~43.4~~ **43.5**	**15.1 bc** ~~31.7~~ **31.9**	17.1 bc ~~22.6~~ 22.9
	~~FRA~~	~~56~~	~~41~~	- -	~~PESSEV~~ ~~Efficacy~~	~~13.4 a~~	~~**2.1 b**~~ ~~**84.3**~~	~~**4.7 b**~~ ~~**64.9**~~	~~4.3 b~~ ~~67.9~~
	GBR	67	47		PESSEV Efficacy	77.9 a	**29.9 c** **61.6**	**32.3 bc** **58.5**	39.9 bc 48.8
	GBR	60	41		PESSEV Efficacy	14.8 a	**9.5 b** ~~35.8~~ **35.9**	**8.4 b** ~~43.2~~ **43.0**	9.4 b ~~36.5~~ 36.4
	GBR	63	42		PESSEV Efficacy	80.3 a	**8.5 e** **89.4**	**15.1 e** **81.2**	32.8 d ~~59.2~~ 59.1
	GBR	84	52		PESSEV	12.0 a	**3.4 c**	**3.0 c**	4.0 b

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
					Efficacy		~~71.7~~ **72.0**	~~75.0~~ **75.1**	~~66.7~~ 66.8
	DEU	62	42		PESSEV Efficacy	31.8 a	**2.8 bc** ~~91.2~~ **91.4**	**5.9 bc** ~~81.4~~ **81.5**	6.8 bc 78.6
	DEU	64	46		PESSEV Efficacy	33.8 a	**8.5 c** **74.9**	**13.3 bc** ~~60.7~~ **60.8**	13.4 bc ~~60.4~~ 60.5
	FRA	84	53		PESSEV Efficacy	45.3 a	**19.2 c** **57.6**	**25.5 bc** **43.7**	23.6 bc ~~47.9~~ 47.8
	GBR	67	44	TA	PESSEV Efficacy	16.1 a a	**4.5 b** ~~72.0~~ **71.9** b	**4.6 b** ~~71.4~~ **71.6** b	5.6 b ~~65.2~~ 65.0 b
	GBR	72	46		PESSEV Efficacy	96.8 a	**87.6 e** **9.5**	**85.2 f** **12.0**	89.9 d 7.1
	DEU	59	42		PESSEV Efficacy	14.9 a	**3.4 b** **77.2**	**4.7 b** **68.5**	6.3 b 57.7
	~~DEU~~	~~75~~	~~38~~	- -	~~PESSEV~~ ~~Efficacy~~	~~6.7 a~~	~~**0.4 ef**~~ ~~**94.0**~~	~~**1.9 b**~~ ~~**71.6**~~	~~0.5 e~~ ~~92.5~~
	DEU	67	39	TA	PESSEV Efficacy	21.19 a a	**9.75 cd** **54.0** cd	**9.46 cd** **55.4** cd	11.16 bcd 47.3 bcd
Mean efficacy				*19 17*	*Mean* Min Max	*33.6 36.3* 6.7 12.0 96.8	~~*65.5*~~ ***62.8*** **9.5** ~~94.0~~ **91.9**	~~*59.0*~~ ***57.9*** **12.0** ~~86.2~~ **86.3**	~~*54.1*~~ *51.1* 7.1 94.5
LEAF3 very late	GBR	74	40		PESSEV Efficacy	71.6 a	**34.4 c** **52.0**	**29.8 c** **58.4**	39.1 c 45.4
	GBR	65	43		PESSEV Efficacy	27.88 a	**7.96 b** **71.4**	**9.24 b** **66.9**	9.39 b 66.3
	GBR	67	47		PESSEV Efficacy	88.3 a	**58.6 b** ~~33.6~~ **33.7**	**61.0 b** **30.9**	68.3 b ~~22.7~~ 22.6
	GBR	60	41		PESSEV Efficacy	24.7 a	**15.0 b** **39.3**	**13.0 b** **47.4**	16.6 b ~~32.8~~ 32.6
	GBR	63	42		PESSEV Efficacy	100.0 a	**26.8 e** **73.2**	**33.9 e** **66.1**	59.9 cd 40.1
	DEU	56	38	TA	PESSEV Efficacy	19.7 a a	**5.6 b** ~~71.6~~ **71.4** bc	**8.5 b** ~~56.9~~ **56.7** bc	5.8 b ~~70.6~~ 70.7 bc
	GBR	72	46		PESSEV Efficacy	100.0 a	**97.9 e** **2.1**	**93.7 i** **6.3**	98.5 c ~~1.5~~ 1.6
	FRA	56	33	TA	PESSEV Efficacy	70.69 a a	**9.66 de** **86.3** def	**10.00 de** **85.9** def	13.20 cde 81.3 cde
Mean efficacy				*8*	*Mean* Min Max	*62.9* 19.7 100.0	***53.7*** **2.1** **86.3**	***52.3*** **6.3** **85.9**	*45.1* ~~1.5~~ 1.6 81.3

For **leaf level 1 very late**, the mean efficacy after two applications in 19 trials reveals dose response with a lower performance of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642 (difference 4 and 9% respectively). The single trial results demonstrate statistically significant dose response across all dose rates in two trials with numerical difference of 16 and 19% respectively in one trial and 19 and 22% respectively in a second trial. In two trials, the 1.4 L/ha dose rate was statistically significantly superior to both lower dose rates, while the efficacy of the 1.0 L/ha dose rate was higher than the 1.2 L/ha dose rate in one of those trials. In another trial, the 1.4 L/ha dose rate was statistically significantly superior to the lowest dose rate. In one trial, a statistically significantly lower performance of the 1.2 L/ha dose rate compared to the 1.4 L/ha and the 1.0 L/ha dose rate was

assessed.
For 13 trials, no statistically significant difference across the dose rates was assessed.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, 19 trials with assessments on **leaf level 2 very late** were available. The mean efficacy reveals clear dose response across the three tested dose rates with 11% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 5% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate statistically significant differences in six trials. In one trial, the dose response from highest to lowest dose rate was assessed. In three trials, the efficacy of the target dose rates was higher than the lowered dose rates. In one trial, a statistically significantly lower performance of the 1.2 L/ha dose rate compared to the 1.4 L/ha and the 1.0 L/ha dose rate was assessed. In one trial, the lowered dose rate demonstrated higher efficacy than the target dose rates.
For 13 trials, no statistically significant difference across the dose rates was assessed.

The mean efficacy of 8 trials on **leaf level 3 very late** reveals clear dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 9% and 7% respectively). In one trial, the performance of the reduced 1.0 L/ha dose rate was statistically significantly inferior to the performance of the target dose rates. In another trial with very low efficacy, the efficacy rates of each dose rate were statistically significantly different.

Table 3.2-89: Minimum effective dose of CA3642 after <u>1 application</u> against SEPTTR in wheat – <u>Early assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 early	FRA	14			PESSEV Efficacy	5.40 a	**4.14 ab** ~~23.3~~ **23.4**	**3.28 b** ~~39.3~~ **39.4**	4.35 ab 19.4
Mean efficacy				*1*		*5.4*	*~~23.3~~* ***23.4***	*~~39.3~~* ***39.4***	*19.4*
LEAF4 early	GBR	17			PESSEV Efficacy	4.06 a	**0.63 de** ~~84.5~~ **84.6**	**1.41 bc** ~~65.3~~ **65.2**	1.29 bc 68.2
	FRA	17			PESSEV Efficacy	4.58 a	**2.46 bc** ~~46.3~~ **46.0**	**1.69 bc** **63.1**	1.23 c ~~73.1~~ 73.2
	GBR	18		TA	PESSEV Efficacy	12.70 a a	**0.37 b** **97.1** b	**0.37 b** **97.1** b	0.44 b ~~96.5~~ 96.6 b
	FRA	14			PESSEV Efficacy	25.70 a	**18.99 b** **26.1**	**12.89 b** ~~49.8~~ **49.9**	15.23 b ~~40.7~~ 40.8
	GBR	14		TA	PESSEV Efficacy	12.99 a a	**1.23 c** ~~90.5~~ **90.6** c	**1.84 bc** ~~85.8~~ **85.9** bc	2.28 bc ~~82.4~~ 82.5 bc
	GBR	15			PESSEV Efficacy	5.0 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	DEU	18		TA	PESSEV Efficacy	4.46 a a	**1.96 c** ~~56.1~~ **56.0** c	**2.75 bc** ~~38.3~~ **38.4** abc	2.84 bc ~~36.3~~ 36.4 abc
Mean efficacy				*7*	*Mean* Min Max	*9.9* 4.1 25.7	***71.5*** **26.1** **100.0**	***71.4*** ~~38.3~~ **38.4** **100.0**	*71.1* ~~36.3~~ 36.4 100.0

For **leaf level 3 early**, the efficacy after one application in one trial demonstrates a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642. The 1.2 L/ha dose rate was distinctly superior compared to the 1.4 L/ha and 1.0 L/ha dose rate. No statistically significant difference was assessed. It is noteworthy that the level of efficacy in general was low in this trial (12 – 32%).

The mean efficacy of 7 trials on **leaf level 4 early** reveals no dose response between the target dose rates of CA3642 and the lowered 1.0 L/ha dose rate. In one trial, the performance of the reduced 1.0 L/ha dose rate was numerically (16%) and statistically significantly inferior to the performance of the 1.4 L/ha dose rate. In another trial, the reduced 1.0 L/ha dose rate was numerically (27%), but not statistically significantly superior to the performance of the 1.4 L/ha dose rate. For one trial, the performance across all three dose rates was equivalent.

Table 3.2-90: Minimum effective dose of CA3642 after <u>1 application</u> against SEPTTR in wheat – <u>Late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 late	FRA	30			PESSEV Efficacy	39.89 a	**21.29 bcd 46.6**	**21.09 bcd 47.1**	22.99 bcd 42.4
	FRA	27			PESSEV Efficacy	7.99 a	**3.24 b** ~~59.4~~ **59.5**	**3.03 b 62.1**	3.96 b 50.4
Mean efficacy				*2*	*Mean* Min Max	*24.0* 8.0 39.9	~~53.0~~ ***53.1*** **46.6** ~~59.4~~ **59.5**	***54.6*** **47.1** **62.1**	*46.4* 42.4 50.4
LEAF4 late	DEU	28			PESSEV Efficacy	4.54 a	**0.65 b 85.7**	**0.96 b** ~~78.9~~ **78.8**	0.76 b ~~83.3~~ 83.2
	GBR	30			PESSEV Efficacy	24.46 a	**10.00 b 59.1**	**9.76 b 60.1**	9.94 b 59.4
	FRA	27		TS	PESSEV Efficacy	59.00 a a	**11.18 d 81.1** d	**15.01 cd 74.6** cd	15.34 cd 74.0 cd
	GBR	22			PESSEV Efficacy	5.51 a	**0.25 b** ~~95.5~~ **95.6**	**0.26 b 95.3**	0.34 b 93.8
	GBR	26		TL	PESSEV Efficacy	5.68 a a	**2.80 b 50.7** b	**2.79 b 50.9** b	2.96 b ~~47.9~~ 47.8 b
	FRA	26			PESSEV Efficacy	30.2 a	**26.5 a** ~~12.3~~ **12.2**	**28.4 a** ~~6.0~~ **5.8**	26.9 a ~~10.9~~ 10.8
Mean efficacy				*6*	*Mean* Min Max	*21.6* 4.5 59.0	~~64.0~~ ***64.1*** ~~12.3~~ **12.2** ~~95.5~~ **95.6**	***60.9*** ~~6.0~~ **5.8** **95.3**	*61.5* ~~10.9~~ 10.8 93.8

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, two trials with assessments on **leaf level 3 late** were available. The mean efficacy across all trials reveals no dose response across the three tested dose rates. The performance of the 1.4 L/ha dose rate was slightly inferior to the 1.2 L/ha, but distinctly superior to the 1.0 L/ha. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For **leaf level 4 late**, the mean efficacy after one application across six trials shows highest efficacy of the 1.4 L/ha dose rate and no dose response for the tested dose rates of CA3642 (difference of 3 and 0.6% respectively between the tested dose rates). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. Numerical difference was up to 7% between the 1.4 L/ha and the 1.0 L/ha dose rate.

Table 3.2-91: Minimum effective dose of CA3642 after <u>1 application</u> against SEPTTR in wheat – <u>Very late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha** **+** **210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha** **+** **180 g PTZ/ha**	**1 L/ha** **150 g AZX/ha** **+** **150 g PTZ/ha**
Efficacy after 1 application									
LEAF4 very late	DEU	35		TL	PESSEV Efficacy	5.08 a a	**0.25 d** **95.1** ef	**1.04 bcd** ~~79.5~~ **79.6** bcd	1.54 b 69.7 b
	DEU	37		TL	PESSEV Efficacy	9.33 a a	**3.15 b** **66.2** b	**3.00 b** **67.8** b	0.16 d 98.3 g
Mean efficacy				*2*	*Mean* Min Max	*7.2* 5.1 9.3	***80.7*** **66.2** **95.1**	***73.7*** **67.8** ~~79.5~~ **79.6**	*84.0* 69.7 98.3

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, two trials with assessments on **leaf level 4 very late** were available. The mean efficacy across all trials reveals no dose response across the three tested dose rates. The performance of the 1.4 L/ha dose rate was inferior to the 1.0 L/ha, but superior to the 1.2 L/ha. The single trial results were variable: in one trial, the lowered dose rate was statistically significantly superior to the target dose rate, in the other trial the 1.4 L/ha dose rate was statistically significantly superior to the lowered dose rate.

Comments of zRMS:

32 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate effectiveness, either in the early and late assessments. After 2 applications, the test product had results on a level of 64,2-70,6% on L1 in the early assessment and 93,8-97,7% on L3 in the late assessment. Dose response was visible in the early assessments. Difference between dose rate of 1 and 1,4 l/ha was 10%. Also the effectiveness after 1 application was moderate on L4 (71% in early assessment, 61-64% in late assessment and 74-81% in very late assessment). Taking into account all results, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter wheat in the MAR zone. However, it should be emphasized in the product label that the level of efficacy is moderate.

TRZAW – SEPTTR – North-East EPPO zone

A total of 26 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Zymoseptoria tritici* (SEPTTR).
The trials were carried out in Poland (20), Lithuania (5) and Latvia (1) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 14 - 53 days later at BBCH 39 - 61.

Table 3.2-92: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Early assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha** **+** **210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha** **+** **180 g PTZ/ha**	**1 L/ha** **150 g AZX/ha** **+** **150 g PTZ/ha**

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	POL	36	15		PESSEV Efficacy	4.3 a	**0.8 gh** ~~81.4~~ **82.4**	**0.9 fgh** ~~79.1~~ **77.9**	1.6 de ~~62.8~~ 61.8
	POL	41	15		PESSEV Efficacy	4.5 a	**0.6 d** ~~86.7~~ **87.5**	**0.9 cd** ~~80.0~~ **80.6**	1.3 bcd ~~71.1~~ 70.8
Mean efficacy				*2*	*Mean* Min Max	*4.4* 4.3 4.5	~~84.0~~ ***85.0*** ~~81.4~~ **82.4** ~~86.7~~ **87.5**	~~79.5~~ ***79.3*** ~~79.1~~ **77.9** ~~80.0~~ **80.6**	~~67.0~~ *66.3* ~~62.8~~ 61.8 ~~71.1~~ 70.8
LEAF2 early	POL	45	15	TL	PESSEV Efficacy	23.8 a a	**0.1 b** ~~99.6~~ **99.7** **c**	**0.6 b** ~~97.5~~ **97.6** **c**	2.5 b 89.5 b
	POL	68	15	TA	PESSEV Efficacy	5.4 a a	**1.1 b** ~~79.6~~ **80.6** **b**	**1.2 b** ~~77.8~~ **77.4** **b**	0.7 b ~~87.0~~ 86.4 b
	POL	67	15	TA	PESSEV Efficacy	5.1 a a	**0.7 b** ~~86.3~~ **86.6** **b**	**0.7 b** ~~86.3~~ **86.9** **b**	0.8 b ~~84.3~~ 83.7 b
	POL	50	15		PESSEV Efficacy	4.2 a	**0.2 b** ~~95.2~~ **96.1**	**0.4 b** ~~90.5~~ **90.4**	0.3 b ~~92.9~~ 91.9
	POL	64	15	TA	PESSEV Efficacy	8.4 a a	**0.5 b** ~~94.0~~ **93.7** **bc**	**0.5 b** ~~94.0~~ **94.6** **bc**	0.9 b ~~89.3~~ 89.6 bc
	POL	36	15		PESSEV Efficacy	9.8 a	**3.0 e** **69.4**	**3.4 e** ~~65.3~~ **65.0**	4.5 cde ~~54.1~~ 54.5
	POL	44	16		PESSEV Efficacy	5.1 a	**0.3 b** ~~94.1~~ **93.9**	**0.4 b** ~~92.2~~ **92.7**	0.6 b ~~88.2~~ 87.8
	LTU	42	19		PESSEV Efficacy	11.1 a	**4.5 cd** ~~59.5~~ **59.8**	**4.8 bcd** ~~56.8~~ **56.4**	4.9 bcd ~~55.9~~ 56.2
	POL	41	15		PESSEV Efficacy	9.9 a	**2.1 de** ~~78.8~~ **79.2**	**2.9 cde** ~~70.7~~ **71.7**	3.4 cd ~~65.7~~ 65.9
Mean efficacy				*9*	*Mean* Min Max	*9.2* 4.2 23.8	~~84.1~~ ***84.3*** ~~59.5~~ **59.8** ~~99.6~~ **99.7**	~~81.2~~ ***81.3*** ~~56.8~~ **56.4** ~~97.5~~ **97.6**	~~78.5~~ *78.4* ~~54.1~~ 54.5 ~~92.9~~ 91.9
LEAF3 early	POL	45	15		PESSEV Efficacy	17.4 a	**0.3 b** ~~98.3~~ **98.2**	**0.6 b** ~~96.6~~ **96.4**	2.4 b ~~86.2~~ 86.3
	POL	68	15		PESSEV Efficacy	14.4 a	**4.8 b** ~~66.7~~ **66.6**	**3.3 b** **77.1**	3.5 b 75.7
	LTU	31	15		PESSEV Efficacy	6.9 a	**1.3 c** ~~81.2~~ **81.0**	**2.8 bc** ~~59.4~~ **60.2**	2.4 bc ~~65.2~~ 64.7
	POL	67	14		PESSEV Efficacy	6.0 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
	POL	31	16		PESSEV Efficacy	7.8 a	**0.6 f** ~~92.3~~ **92.8**	**1.2 de** ~~84.6~~ **85.0**	2.2 b ~~71.8~~ 72.2
	POL	67	15		PESSEV Efficacy	14.2 a	**3.3 b** ~~76.8~~ **76.7**	**4.1 b** ~~71.1~~ **71.2**	3.7 b ~~73.9~~ 74.2
	POL	50	15		PESSEV Efficacy	11.1 a	**0.7 b** **93.7**	**1.0 b** ~~91.0~~ **91.3**	1.0 b ~~91.0~~ 90.9
	POL	67	15		PESSEV	4.3 a	**0.4 c**	**0.9 bc**	1.1 bc

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
				TA	Efficacy	a	~~90.7~~ **91.8** c	~~79.1~~ **78.5** c	~~74.4~~ 73.5 bc
	POL	64	15	TA	PESSEV Efficacy	5.9 a a	**0.8 bc** ~~86.4~~ **86.1** bc	**1.8 bc** ~~69.5~~ **70.2** bc	1.6 bc ~~72.9~~ 73.4 bc
	POL	66	15		PESSEV Efficacy	4.3 a	**2.0 b** ~~53.5~~ **52.8**	**1.4 b** ~~67.4~~ **66.7**	2.7 b ~~37.2~~ 38.6
	POL	49	15		PESSEV Efficacy	10.9 a	**1.6 cd** ~~85.3~~ **85.7**	**2.4 cd** ~~78.0~~ **78.2**	1.6 cd ~~85.3~~ 85.6
	POL	44	16		PESSEV Efficacy	6.0 a	**0.4 b** ~~93.3~~ **92.7**	**0.3 b** ~~95.0~~ **95.8**	0.6 b ~~90.0~~ 89.6
	LTU	39	17		PESSEV Efficacy	10.2 a	**2.5 cd** ~~75.5~~ **75.6**	**1.7 d** ~~83.3~~ **82.9**	3.1 cd ~~69.6~~ 69.2
	LTU	42	19	TA	PESSEV Efficacy	28.5 a a	**13.1 cd** ~~54.0~~ **54.1** cd	**14.4 bcd** ~~49.5~~ **49.3** bcd	14.9 bcd ~~47.7~~ 47.6 bcd
	POL	31	17		PESSEV Efficacy	4.2 a	**0.3 d** ~~92.9~~ **94.1**	**0.4 d** ~~90.5~~ **90.8**	0.4 d ~~90.5~~ 89.9
	LTU	39	14		PESSEV Efficacy	11.3 a	**2.9 f** ~~74.3~~ **74.5**	**3.8 ef** ~~66.4~~ **66.7**	5.4 c-f ~~52.2~~ 52.3
Mean efficacy				*16*	*Mean* Min Max	*10.2* 4.2 28.5	~~*82.2*~~ ***82.3*** ~~53.5~~ **52.8** **100.0**	~~*78.7*~~ ***78.8*** ~~49.5~~ **49.3** **100.0**	*74.0* ~~37.2~~ 38.6 100.0
LEAF4 early	LTU	43	16		PESSEV Efficacy	7.5 a	**1.0 b** ~~86.7~~ **86.4**	**1.5 b** ~~80.0~~ **79.7**	1.9 b ~~74.7~~ 74.2
	POL	66	15		PESSEV Efficacy	6.0 a	**2.3 b** ~~61.7~~ **61.9**	**2.8 b** ~~53.3~~ **53.6**	2.6 b 56.7
	POL	46	15	TA	PESSEV Efficacy	7.1 a a	**0.2 e** ~~97.2~~ **96.8** e	**0.2 e** ~~97.2~~ **96.8** e	0.7 b-e ~~90.1~~ 90.2 bc
Mean efficacy				*3*	*Mean* Min Max	*6.9* 6.0 7.5	~~*81.8*~~ ***81.7*** ~~61.7~~ **61.9** ~~97.2~~ **96.8**	~~*76.8*~~ ***76.7*** ~~53.3~~ **53.6** ~~97.2~~ **96.8**	~~*73.8*~~ *73.7* 56.7 ~~90.1~~ 90.2

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 early**, the mean efficacy after two applications across two trials reveals clear dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 17% and 12.5% respectively. The detailed view on the single assessments reveals statistically significant difference between the target dose rates and the reduced dose rate in one of the two trials. In this trial, no statistically significant difference within the target dose rates was observed.

For **leaf level 2 early**, the mean efficacy after two applications in nine trials demonstrates a lower performance of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642 (difference 3 and 6% respectively). The single trial results demonstrate a statistically significant difference between the target dose rates and the lowered dose rate in one of the trials. The numerical difference between the 1.4 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was up to 15% in one trial. For one trial, the 1.0 L/ha dose rate was numerically superior to the target dose rates (1.2 - 1.4 L/ha).

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, 16 trials with assessments on **leaf level 3 early** were available. The mean efficacy reveals dose response across the three tested dose rates with 8% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 4% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate statistically significant difference between the highest and the two lower dose rates in one trial. In this trial, the performance of the 1.2 L/ha was statistically significantly superior to the 1.0 L/ha dose rate. For all other trials, no statistically significant difference was assessed, albeit a clear numerical difference up to 22% in one trial.
For two trials, the 1.0 L/ha dose rate was equivalent or numerically superior to the target 1.4 L/ha dose rate.
For one trial, the performance across all three dose rates was equivalent.

For **leaf level 4 early**, the mean efficacy after two applications across three trials reveals dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 8% and 3% respectively. The single trial results demonstrate no statistically significant difference between the target dose rates and the lowered dose rate in any of the trials.

Table 3.2-93: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	LTU	56	31	TL	PESSEV Efficacy	33.9 a a	**13.3 d** ~~60.8~~ **60.9** **de**	**15.3 cd** **54.9** **cde**	20.1 bc ~~40.7~~ 40.6 bc
	LTU	50	28		PESSEV Efficacy	6.4 a	**1.7 c** ~~73.4~~ **73.9**	**1.4 c** ~~78.1~~ **78.6**	1.5 c ~~76.6~~ 76.5
	POL	82	31		PESSEV Efficacy	5.0 a	**1.4 c** ~~72.0~~ **73.1**	**2.2 bc** ~~56.0~~ **56.1**	2.4 bc ~~52.0~~ 53.1
	POL	83	32		PESSEV Efficacy	6.0 a	**2.2 c** ~~63.3~~ **63.9**	**3.2 bc** ~~46.7~~ **47.1**	3.8 b ~~36.7~~ 36.1
	POL	84	32	TA	PESSEV Efficacy	5.3 a a	**0.6 c** ~~88.7~~ **88.3** **c**	**1.0 c** ~~81.1~~ **81.0** **c**	1.2 c 77.4 c
	POL	61	34		PESSEV Efficacy	36.6 a	**1.4 b** **96.2**	**1.9 b** ~~94.8~~ **94.7**	3.3 b ~~91.0~~ 90.9
	POL	84	32	TL	PESSEV Efficacy	18.6 a a	**1.2 d** ~~93.5~~ **93.6** **c**	**1.9 cd** ~~89.8~~ **90.1** **c**	2.8 cd ~~84.9~~ 85.2 c
	LVA	52	27		PESSEV Efficacy	5.0 a	**0.0 b** ~~100.0~~ **99.5**	**0.1 b** ~~98.0~~ **98.5**	0.1 b ~~98.0~~ 99.0
	POL	87	34	TA	PESSEV Efficacy	24.1 a a	**3.8 b** **84.2** **b**	**5.3 b** ~~78.0~~ **78.2** **b**	4.8 b ~~80.1~~ 80.0 b
	POL	85	32		PESSEV Efficacy	17.5 a	**3.0 c** ~~82.9~~ **83.1**	**3.9 c** **77.7**	3.3 c 81.1
	POL	53	23		PESSEV Efficacy	9.2 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.3 b ~~96.7~~ 96.6
Mean efficacy				*11*	*Mean*	*15.2*	~~*83.2*~~ ***83.3***	~~*77.7*~~ ***77.9***	~~*74.1*~~ *74.2*

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Min Max	5.0 36.6	~~60.8~~ **60.9** **100.0**	~~46.7~~ **47.1** **100.0**	~~36.7~~ 36.1 ~~98.0~~ 99.0
LEAF2 late	POL	82	31		PESSEV Efficacy	7.2 a	**2.9 ef** ~~59.7~~ **59.9**	**4.3 bcd** ~~40.3~~ **40.5**	4.0 cde ~~44.4~~ 44.3
	POL	83	32		PESSEV Efficacy	10.8 a	**4.8 c** ~~55.6~~ **55.2**	**5.6 c** ~~48.1~~ **47.7**	5.8 bc ~~46.3~~ 45.9
	POL	61	34		PESSEV Efficacy	10.4 a	**0.9 b** ~~91.3~~ **91.6**	**0.9 b** ~~91.3~~ **91.0**	1.4 b ~~86.5~~ 86.2
	POL	84	32		PESSEV Efficacy	12.1 a	**2.2 d** ~~81.8~~ **82.2**	**3.6 cd** ~~70.2~~ **70.6**	3.9 cd ~~67.8~~ 68.0
	POL	53	23		PESSEV Efficacy	9.6 a	**0.0 b** **100.0**	**0.6 b** ~~93.8~~ **93.5**	1.4 b ~~85.4~~ 85.1
	POL	85	32		PESSEV Efficacy	23.3 a	**5.3 c** ~~77.3~~ **77.7**	**5.9 c** ~~74.7~~ **75.0**	6.0 c ~~74.2~~ 74.5
	LVA	52	27		PESSEV Efficacy	5.3 a	**0.0 b** ~~100.0~~ **99.5**	**0.0 b** ~~100.0~~ **99.3**	0.0 b ~~100.0~~ 99.3
	POL	84	32	TL	PESSEV Efficacy	45.0 a a	**4.4 b** ~~90.2~~ **90.3** **d**	**5.9 b** **86.9** **cd**	7.1 b 84.2 cd
	POL	67	33		PESSEV Efficacy	7.8 a	**2.4 d** ~~69.2~~ **69.3**	**3.6 c** ~~53.8~~ **53.6**	5.1 b ~~34.6~~ 34.9
Mean efficacy				*9*	*Mean* Min Max	*14.6* 5.3 45.0	***80.6*** ~~55.6~~ **55.2** **100.0**	~~73.2~~ ***73.1*** ~~40.3~~ **40.5** ~~100.0~~ **99.3**	~~69.3~~ *69.2* ~~34.6~~ 34.9 ~~100.0~~ 99.3

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 late**, the mean efficacy after two applications across eleven trials reveals dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 9% and 3.6% respectively. The detailed view on the single assessments reveals statistically significant difference between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate in two trials. Between the 1.2 L/ha dose rate and the 1.0 L/ha dose rate no statistically significant difference was assessed.

Numerical difference was up to 27% in one trial and 20% in two trials respectively between the 1.4L/ha and the 1.0 L/ha dose rate. For three trials, the performance across all three dose rates was similar.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, nine trials with assessments on **leaf level 2 late** were available. The mean efficacy reveals a clear dose response across the three tested dose rates with 11% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 4% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate statistically significant difference between the target dose rates and the lowest dose rate in one of the trials with a clear numerical difference of 35% and 19% respectively. In one trial, the difference between the 1.4 L/ha dose rate was statistically significantly superior the 1.2 L/ha dose rate. For one trial, the performance across all three dose rates was equivalent.

Table 3.2-94: Minimum effective dose of CA3642 after 2 applications against SEPTTR in wheat – Very late assessment timing – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	POL	57	35		PESSEV Efficacy	10.9 a	**1.8 e** ~~83.5~~ **83.7**	**3.6 d** ~~67.0~~ **67.1**	4.8 c ~~56.0~~ 56.2
	POL	51	36		PESSEV Efficacy	7.5 a	**1.0 e** **86.7**	**2.2 d** ~~70.7~~ **70.5**	4.8 b ~~36.0~~ 35.8
	POL	75	40	TA	PESSEV Efficacy	7.2 a a	**0.9 c** ~~87.5~~ **88.2** **d**	**1.8 bc** ~~75.0~~ **74.4** **bcd**	2.0 bc ~~72.2~~ 72.0 bcd
	LTU	65	38		PESSEV Efficacy	13.3 a	**5.9 b** ~~55.6~~ **56.1**	**5.6 b** ~~57.9~~ **58.0**	6.4 b ~~51.9~~ 52.0
	POL	84	35		PESSEV Efficacy	10.1 a	**0.8 b** ~~92.1~~ **92.0**	**0.8 b** ~~92.1~~ **92.0**	3.1 b ~~69.3~~ 69.1
	POL	70	42	TA	PESSEV Efficacy	5.0 a a	**0.1 c** ~~98.0~~ **99.0** **c**	**0.2 c** ~~96.0~~ **96.5** **c**	0.3 c ~~94.0~~ 95.0 c
	POL	74	40		PESSEV Efficacy	7.9 a	**2.0 d** ~~74.7~~ **74.2**	**1.7 d** ~~78.5~~ **78.4**	3.2 c ~~59.5~~ 59.3
	POL	56	35		PESSEV Efficacy	14.1 a	**7.1 fg** ~~49.6~~ **50.0**	**7.9 ef** ~~44.0~~ **44.3**	8.6 de ~~39.0~~ 38.9
	POL	64	36		PESSEV Efficacy	4.3 a	**0.4 b** ~~90.7~~ **90.9**	**0.9 b** ~~79.1~~ **78.5**	0.6 b ~~86.0~~ 85.0
	POL	70	39		PESSEV Efficacy	17.4 a	**0.7 c** ~~96.0~~ **95.8**	**1.2 bc** ~~93.1~~ **93.2**	1.6 bc ~~90.8~~ 90.9
	POL	63	37		PESSEV Efficacy	11.1 a	**4.9 g** ~~55.9~~ **55.4**	**6.3 de** ~~43.2~~ **43.5**	6.9 cd ~~37.8~~ 37.9
Mean efficacy				*11*	*Mean* Min Max	*9.9* 4.3 17.4	~~*79.1*~~ ***79.3*** ~~49.6~~ **50.0** ~~98.0~~ **99.0**	***72.4*** ~~43.2~~ **43.5** ~~96.0~~ **96.5**	~~*63.0*~~ *62.9* ~~36.0~~ 35.8 ~~94.0~~ 95.0
LEAF2 very late	POL	75	40	TA	PESSEV Efficacy	19.2 a a	**2.7 c** **85.9** **cd**	**4.6 c** ~~76.0~~ **76.3** **cd**	5.2 c ~~72.9~~ 73.2 c
	LTU	65	38		PESSEV Efficacy	28.9 a	**6.8 d** ~~76.5~~ **76.4**	**8.6 d** ~~70.2~~ **70.4**	10.9 c 62.3
	POL	84	35		PESSEV Efficacy	13.0 a	**0.8 b** **93.8**	**0.6 b** ~~95.4~~ **95.7**	1.3 b ~~90.0~~ 89.9
	POL	70	42		PESSEV Efficacy	14.5 a	**1.1 c** ~~92.4~~ **92.5**	**2.4 c** ~~83.4~~ **83.6**	3.4 c ~~76.6~~ 76.8
	POL	74	40		PESSEV Efficacy	42.9 a	**14.1 c** **67.1**	**15.6 c** **63.6**	15.3 c 64.3
	POL	64	36	TA	PESSEV Efficacy	5.2 a a	**0.7 b** ~~86.5~~ **87.4** **c**	**0.9 b** ~~82.7~~ **82.1** **c**	1.4 b ~~73.1~~ 72.4 b
	POL	70	39		PESSEV Efficacy	30.6 a	**2.6 cd** ~~91.5~~ **91.6**	**3.0 bcd** **90.2**	4.3 bc ~~85.9~~ 85.8
	POL	59	45		PESSEV Efficacy	6.5 a	**1.4 e** ~~78.5~~ **79.0**	**1.9 de** ~~70.8~~ **70.2**	2.1 de ~~67.7~~ 67.3

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				*8*	*Mean* Min Max	*20.1* 5.2 42.9	~~*84.0*~~ ***84.2*** **67.1** **93.8**	~~*79.1*~~ ***79.0*** **63.6** ~~95.4~~ **95.7**	~~*74.1*~~ *74.0* 62.3 ~~90.0~~ 89.9

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 very late**, the mean efficacy after two applications across 11 trials reveals clear dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 16% and 9% respectively. The detailed view on the single assessments reveals statistically significant difference between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate in 5 of 11 trials and in 3 trials between the 1.2 L/ha dose rate and the 1.0 L/ha dose rate. Numerical difference was up to 50% and 34% respectively between the 1.4 L/ha and 1.2 L/ha on the one hand and the 1.0 L/ha dose rate.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, eight trials with assessments on **leaf level 2 very late** were available. The mean efficacy reveals a clear dose response across the three tested dose rates with 10% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 5% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate statistically significant difference between the proposed and the lowest dose rate in two trials. For all other trials, no statistically significant difference was assessed, albeit a clear numerical difference up to 16% in one trial.

Table 3.2-95: Minimum effective dose of CA3642 after <u>1 application</u> against SEPTTR in wheat – <u>Late and Very late assessment timings</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF2 late	POL	26			PESSEV Efficacy	4.8 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*1*		*4.8*	***100.0***	***100.0***	*100.0*
LEAF3 late	POL	21		TA	PESSEV Efficacy	6.3 a a	**0.5 cd** ~~92.1~~ **92.0** d	**0.6 cd** ~~90.5~~ **90.0** cd	1.0 cd ~~84.1~~ 84.0 cd
	POL	26			PESSEV Efficacy	10.7 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*2*	*Mean* Min Max	*8.5* 6.3 10.7	***96.0*** ~~92.1~~ **92.0** **100.0**	~~*95.2*~~ ***95.0*** ~~90.5~~ **90.0** **100.0**	~~*92.1*~~ *92.0* ~~84.1~~ 84.0 100.0
LEAF4 late	LTU	25			PESSEV Efficacy	7.2 a	**1.8 cd** ~~75.0~~ **74.8**	**1.7 d** ~~76.4~~ **77.0**	2.3 cd ~~68.1~~ 67.8
Mean efficacy				*1*		*7.2*	~~*75.0*~~ ***74.8***	~~*76.4*~~ ***77.0***	~~*68.1*~~ *67.8*
LEAF2 very late	POL	49		TA	PESSEV Efficacy	6.7 a a	**0.2 b** ~~97.0~~ **97.2** b	**0.4 b** ~~94.0~~ **93.5** b	1.4 b ~~79.1~~ 78.5 b

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Mean efficacy				*1*		*6.7*	~~*97.0*~~ ***97.2***	~~*94.0*~~ ***93.5***	~~*79.1*~~ *78.5*
LEAF3 very late	POL	49			PESSEV Efficacy	6.4 a	**0.3 b** ~~95.3~~ **95.5**	**0.4 b** ~~93.8~~ **94.1**	0.8 b ~~87.5~~ 88.2
Mean efficacy				*1*		*6.4*	~~*95.3*~~ ***95.5***	~~*93.8*~~ ***94.1***	~~*87.5*~~ *88.2*

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 2 late**, the performance after one application of CA3642 across all three dose rates was equivalent.
For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, two trials with assessments on **leaf level 3 late** were available. The mean efficacy of the two target dose rates was similar and the performance of the 1.4 L/ha and the 1.2 L/ha dose rate compared to the lowered dose rate was slightly superior. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For **leaf level 4 late**, the efficacy after one application in one trial demonstrates a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642 (difference 7% and 8%). No statistically significant difference between the target dose rates and the reduced dose rate was assessed.

For **leaf level 2 very late**, the efficacy after one application demonstrate clear dose response (18% and 15% respectively) between the target dose rates on the one hand and the reduced dose rate (1.0 L/ha). The difference was not statistically significant.

For **leaf level 3 very late**, the efficacy after one application demonstrate dose response (8% and 6% respectively) between the target dose rates on the one hand and the reduced dose rate (1.0 L/ha). The difference was not statistically significant.

Comments of zRMS:

26 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,4 l/ha achieved effectiveness of >80% after 2 applications, either in the early and late assessments. The lower dose of 1,2 l/ha has results on a level of 72,4-81,3%. The difference between 1 l/ha and 1,4 l/ha was 10-20%. The higher doses were significantly superior compared to the lower dose rate of 1 l/ha. The test product was effective also after 1 application with results of 74,8-100% at 1,2-1,4 l/ha. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – SEPTTR – South-East EPPO zone

A total of 15 trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Zymoseptoria tritici* (SEPTTR).
The trials were carried out in Bulgaria (2), Hungary (9) and Romania (4) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 33 and the second application was done 17 - 41 days later, at BBCH 39 – 59.

Table 3.2-96: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Early assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 early	ROU	37	15	.	PESSEV Efficacy	5.4 a	**0.6 b** ~~88.9~~ **89.5**	**0.5 b** **90.7**	0.8 b ~~85.2~~ 86.1
	BGR	37	15		PESSEV Efficacy	4.3 a	**0.9 b** ~~79.1~~ **78.7**	**0.7 b** ~~83.7~~ **84.2**	1.0 b ~~76.7~~ 77.8
Mean efficacy				*2*	*Mean* Min Max	*4.9* 4.3 5.4	~~*84.0*~~ ***84.1*** ~~79.1~~ **78.7** ~~88.9~~ **89.5**	~~*87.2*~~ ***87.5*** ~~83.7~~ **84.2** **90.7**	~~*81.0*~~ *82.0* ~~76.7~~ 77.8 ~~85.2~~ 86.1
LEAF3 early	ROU	37	15		PESSEV Efficacy	7.7 a	**0.8 b** ~~89.6~~ **90.2**	**0.9 b** ~~88.3~~ **87.8**	1.6 b ~~79.2~~ 78.9
	BGR	37	15		PESSEV Efficacy	18.3 a	**2.8 b** ~~84.7~~ **84.9**	**2.4 b** ~~86.9~~ **87.1**	4.9 b ~~73.2~~ 73.5
	BGR	37	15		PESSEV Efficacy	30.2 a	**15.6 b** ~~48.3~~ **48.5**	**15.8 b** ~~47.7~~ **47.8**	14.6 b ~~51.7~~ 51.8
Mean efficacy				*3*	*Mean* Min Max	*18.7* 7.7 30.2	~~*74.2*~~ ***74.5*** ~~48.3~~ **48.5** ~~89.6~~ **90.2**	~~*74.3*~~ ***74.2*** ~~47.7~~ **47.8** ~~88.3~~ **87.8**	~~*68.0*~~ *68.1* ~~51.7~~ 51.8 ~~79.2~~ 78.9
LEAF4 early	ROU	42	14		PESSEV Efficacy	100.00 a	**0.04 d** **100.0**	**0.04 cd** **100.0**	0.08 bcd 99.9
	ROU	37	15	TA	PESSEV Efficacy	12.6 a a	**2.0 f** **84.1** f	**2.5 ef** ~~80.2~~ **80.1** e	3.6 cde ~~71.4~~ 71.6 cd
Mean efficacy				*2*	*Mean* Min Max	*56.3* 12.6 100.0	***92.0*** **84.1** **100.0**	***90.1*** ~~80.2~~ **80.1** **100.0**	~~*85.7*~~ *85.8* ~~71.4~~ 71.6 99.9

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 2 early**, the mean efficacy after two applications across two trials reveals no dose response. The mean performance of the 1.4 L and 1.2 L/ha of CA3642 was slightly superior to the lowered 1.0 L/ha dose rate (difference 3 and 6% respectively). The 1.2 L/ha dose rate was slightly superior compared to the 1.4 L/ha dose rate. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in the two trials.

For **leaf level 3 early**, the mean efficacy after two applications across three trials demonstrates dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 6%). The mean efficacy of the target dose rates was nearly identical. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in the two trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, two trials with assessments on **leaf level 4 early** were available. The mean efficacy reveals a dose response across the three tested dose rates with 7% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 4% difference within the target dose rates. One single trial result demonstrate statistically significant difference between the highest dose rate and the lowered dose rate. All other assessments reveal no statistically significant differences.

Table 3.2-97: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	BGR	53	31	TL	PESSEV Efficacy	11.1 a a	**1.0 b** ~~91.0~~ **90.8** b	**2.4 b** ~~78.4~~ **78.5** b	2.4 b ~~78.4~~ 78.9 b
	BGR	55	33	TA	PESSEV Efficacy	9.0 a a	**0.8 b** ~~91.1~~ **91.2** b	**0.6 b** **93.3** **b**	0.9 b 90.0 b
	ROU	69	28		PESSEV Efficacy	26.6 a	**19.9 e** **25.2**	**21.8 cde** ~~18.0~~ **17.9**	21.5 de ~~19.2~~ 19.1
	ROU	56	28		PESSEV Efficacy	10.26 a	**0.05 b** ~~99.5~~ **99.6**	**0.06 b** **99.4**	0.07 b 99.3
Mean efficacy				*4*	*Mean* Min Max	*14.3* 9.0 26.6	***76.7*** **25.2** ~~99.5~~ **99.6**	***72.3*** ~~18.0~~ **17.9** **99.4**	~~*71.7*~~ *71.9* ~~19.2~~ 19.1 99.3
LEAF2 late	BGR	55	33		PESSEV Efficacy	19.3 a	**3.0 b** ~~84.5~~ **84.7**	**1.5 b** ~~92.2~~ **92.1**	2.0 b ~~89.6~~ 89.7
	BGR	53	31	TL	PESSEV Efficacy	23.8 a a	**3.1 b** ~~87.0~~ **87.1** b	**4.2 b** ~~82.4~~ **82.5** b	5.7 b ~~76.1~~ 75.9 b
	ROU	60	32		PESSEV Efficacy	7.31 a	**0.11 b** **98.5**	**0.06 b** **99.2**	0.28 b 96.2
	ROU	56	28		PESSEV Efficacy	100.00 a	**0.11 c** **99.9**	**0.13 c** **99.9**	0.14 c 99.9
Mean efficacy				*4*	*Mean* Min Max	*37.6* 7.3 100.0	~~*92.5*~~ ***92.6*** ~~84.5~~ **84.7** **99.9**	***93.4*** **82.4** **99.9**	*90.4* ~~76.1~~ 75.9 99.9
LEAF3 late	HUN	49	32		PESSEV Efficacy	4.75 a	**0.43 b** ~~90.9~~ **91.1**	**0.58 b** ~~87.8~~ **87.9**	0.13 b ~~97.3~~ 97.4
Mean efficacy						*4.8*	~~*90.9*~~ ***91.1***	~~*87.8*~~ ***87.9***	~~*97.3*~~ *97.4*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 late**, the mean efficacy after two applications across four trials reveals very slight dose response. The mean performance of the 1.4 L and 1.2 L/ha of CA3642 was slightly superior to the lowered 1.0 L/ha dose rate (difference 5 and 0.6% respectively). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in the four trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, four trials with assessments on **leaf level 2 late** were available. The mean efficacy reveals a slight dose response between the 1.2 and 1.4 L/ha dose rate on the one hand and the 1.0 L/ha dose rate on the other hand (difference 2 and 3%). The performance of the 1.2 L/ha dose rate was slightly superior compared to the 1.4 L/ha dose rate.

The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the four trials.

While in one trial a distinct numerical dose response across the three dose rates was observable, in another trial the efficacy for each tested dose rate was identical. For the two other trials, no clear dose response was observed. In both trials, the performance of the 1.2 L/ha dose rate was numerical slightly superior compared to the 1.4 L/ha dose rate.

For **leaf level 3 late**, the efficacy after two applications in one trial reveals no dose response. The mean performance of the 1.4 L and 1.2 L/ha of CA3642 was inferior to the lowered 1.0 L/ha dose rate (difference 6 and 9.5% respectively). The 1.4 L/ha dose rate was slightly superior compared to the 1.2 L/ha dose rate. The difference between the target dose rates and the reduced dose rate was not statistically significant.

Table 3.2-98: Minimum effective dose of CA3642 after <u>2 applications</u> against SEPTTR in wheat – <u>Very late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	HUN	62	45	TA	PESSEV Efficacy	13.0 a a	**6.0 ab** ~~53.8~~ **53.9** ab	**2.8 b** ~~78.5~~ **78.4** b	4.7 ab ~~63.8~~ 63.5 ab
	HUN	60	43		PESSEV Efficacy	14.3 a	**0.3 b** **97.9**	**0.2 b** ~~98.6~~ **98.7**	0.3 b ~~97.9~~ 97.8
	HUN	66	48		PESSEV Efficacy	30.5 a	**12.1 b** **60.3**	**12.6 b** ~~58.7~~ **58.6**	9.0 b 70.5
	HUN	65	45		PESSEV Efficacy	33.8 a	**2.8 b** ~~91.7~~ **91.8**	**4.7 b** ~~86.1~~ **86.0**	4.6 b 86.4
	HUN	67	40	TL	PESSEV Efficacy	10.9 a a	**0.9 b** ~~91.7~~ **91.5** bcd	**0.8 b** ~~92.7~~ **92.3** cd	0.9 b ~~91.7~~ 91.5 cd
	ROU	60	38		PESSEV Efficacy	15.1 a	**8.8 bc** **41.7**	**11.6 ab** ~~23.2~~ **23.6**	12.7 ab ~~15.9~~ 16.1
Mean efficacy				*6*	*Mean* Min Max	*19.6* 10.9 19.6	***72.9*** **41.7** ~~72.9~~ **97.9**	***72.9*** ~~23.2~~ **23.6** ~~72.9~~ **98.7**	*71.0* ~~15.9~~ 16.1 ~~71.0~~ 97.8
LEAF2 very late	HUN	57	40	.	PESSEV Efficacy	13.7 a	**12.8 a** ~~6.6~~ **6.4**	**12.0 a** ~~12.4~~ **12.9**	8.2 a ~~40.1~~ 40.4
	HUN	60	43	.	PESSEV Efficacy	36.6 a	**0.2 b** **99.5**	**0.1 b** **99.7**	0.1 b ~~99.7~~ 99.8
	HUN	62	42		PESSEV Efficacy	30.8 a	**0.0 d** **100.0**	**0.0 d** **100.0**	0.3 d ~~99.0~~ 99.1
	HUN	65	45		PESSEV Efficacy	56.5 a	**10.5 c** ~~81.4~~ **81.5**	**18.0 b** **68.1**	17.9 b 68.3
	HUN	60	40		PESSEV Efficacy	22.6 a	**2.8 f** ~~87.6~~ **87.5**	**3.7 ef** ~~83.6~~ **83.5**	5.0 de ~~77.9~~ 77.8
	HUN	79	43	TL	PESSEV Efficacy	18.1 a a	**3.8 b** ~~79.0~~ **78.9** b	**3.4 b** ~~81.2~~ **81.1** b	4.8 b ~~73.5~~ 73.3 b
	HUN	67	40	TL	PESSEV Efficacy	21.3 a a	**2.7 c** ~~87.3~~ **87.5** cd	**2.4 c** ~~88.7~~ **88.9** cd	2.1 c ~~90.1~~ 90.2 cd
	ROU	60	38		PESSEV Efficacy	22.0 a	**14.4 de** ~~34.5~~ **34.7**	**15.8 cd** ~~28.2~~ **28.1**	16.5 cd 25.0
Mean efficacy				*8*	*Mean* Min Max	*27.7* 13.7 56.5	***72.0*** ~~6.6~~ **6.4** **100.0**	***70.3*** ~~12.4~~ **12.9** **100.0**	*71.7* 25.0 ~~99.7~~ 99.8
LEAF3 very late	HUN	57	40		PESSEV Efficacy	8.4 a	**3.4 a** ~~59.5~~ **59.9**	**4.7 a** ~~44.0~~ **44.4**	2.7 a 67.9
	HUN	69	47		PESSEV	19.9 a	**5.8 b**	**8.0 b**	6.9 b

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
					Efficacy		**70.9**	**59.8**	~~65.3~~ 65.1
Mean efficacy				2	*Mean* Min Max	*14.2* 8.4 19.9	~~*65.2*~~ ***65.4*** ~~59.5~~ **59.9** **70.9**	~~*51.9*~~ ***52.1*** ~~44.0~~ **44.4** **59.8**	~~*66.6*~~ *66.5* ~~65.3~~ 65.1 67.9

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 very late**, the mean efficacy after two applications across six trials reveals slight dose response between the two target dose rates, for which efficacy was identical, and the lowered dose rate (difference 2%). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any assessment.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, eight trials with assessments on **leaf level 2 very late** were available. The mean efficacy reveals no dose response across the three tested dose rates. While the highest dose rate (1.4 L/ha) demonstrates a slightly superior efficacy, the 1.2 L/ha dose rate was inferior compared to the 1.0 L/ha dose rate.
The detailed view on the single assessments reveals a statistically significant difference between the higher target dose rate and the reduced dose rate in two of the eight trials. No statistically significant difference between the 1.2 L/ha dose rate and the 1.0 L/ha dose rate was assessed.

For **leaf level 3 very late**, the mean efficacy after two applications in two trials reveals no dose response. The mean performance of the 1.4 L and 1.2 L/ha of CA3642 was inferior to the lowered 1.0 L/ha dose rate (difference 1.4 and 15% respectively). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any assessment.

Table 3.2-99: Minimum effective dose of CA3642 after <u>1 application</u> against SEPTTR in wheat – <u>Late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF4 late	ROU	22			PESSEV Efficacy	7.2 a	**1.9 e** ~~73.6~~ **73.9**	**2.7 d** ~~62.5~~ **62.1**	3.3 cd ~~54.2~~ 54.8
	BGR	22			PESSEV Efficacy	15.2 a	**4.0 b** ~~73.7~~ **73.4**	**4.2 b** ~~72.4~~ **72.7**	4.3 b ~~71.7~~ 72.0
	BGR	21		TA	PESSEV Efficacy	17.3 a a	**3.9 b** ~~77.5~~ **77.4** b	**3.7 b** ~~78.6~~ **78.5** b	4.1 b ~~76.3~~ 76.6 b
Mean efficacy				3	*Mean* Min Max	*13.2* 7.2 17.3	***74.9*** ~~73.6~~ **73.9** ~~77.5~~ **77.4**	~~*71.2*~~ ***71.1*** ~~62.5~~ **62.1** ~~78.6~~ **78.5**	~~*67.4*~~ *67.8* ~~54.2~~ 54.8 ~~76.3~~ 76.6

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 4 late**, the mean efficacy after one application in three trials reveals dose response across the three tested dose rates (difference 3.7 and 3.8% respectively). The detailed view on the single as-

sessments reveals a statistically significant difference between the higher target dose rate and the reduced dose rate in one assessment. No statistically significant difference between the 1.2 L/ha dose rate and the 1.0 L/ha dose rate was assessed.

Comments of zRMS:

15 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications, in the early and late assessments. Dose response was visible after 1 application. The difference between dose rate of 1 l/ha and 1,4 l/ha was 7% and moderate level of control was noted in this case. Taking into account all results, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

Winter Wheat (TRZAW) – Powdery mildew (ERYSGR/T – *Blumeria graminis*)

28 field trials were established between 2019 and 2021 in order to determine the minimum effective dose of CA3642 for the control of *Blumeria graminis* (ERYSGR/T) in winter wheat.
The trials from the Maritime EPPO zone (9) were carried out in Germany, the United Kingdom and Northern France. The trials from the North-East EPPO zone (11) were carried out in Poland, Latvia and Lithuania. The trials from the South-East EPPO zone (8) were carried out in Hungary, Romania and Slovakia.

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) and compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose’*.

TRZAW – ERYSGR/T – Maritime EPPO zone

A total of 9 trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Blumeria graminis* (ERYSGR/T). The trials were carried out in France (3), Germany (4) and Great Britain (2) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 17 - 37 days later, at BBCH 39 - 59.

Table 3.2-100: Minimum effective dose of CA3642 after 2 applications against ERYSGR/T in wheat – Early assessment timing - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF2 early	~~FRA~~	~~43~~	~~16~~	- -	~~PESSEV Efficacy~~	~~5.5 b~~	~~2.7 cd 50.9~~	~~3.3 cd 40.0~~	~~3.9 cd 29.1~~
	GBR	49	15		PESSEV Efficacy	5.1 b	**0.0 c 100.0**	**0.0 c 100.0**	0.0 c 100.0
	FRA	43	13		PESSEV Efficacy	6.4 b	**1.6 cd 75.0**	**1.9 cd** ~~70.3~~ **70.1**	2.0 cd ~~68.8~~ 69.4
	FRA	40	13	TA	PESSEV Efficacy	4.1 a a	**0.4 de** ~~90.2~~ **89.4** e	**0.5 de** ~~87.8~~ **87.6** e	1.0 cde ~~75.6~~ 76.7 de
	DEU	53	16		PESSEV Efficacy	11.1 a 11.1	**0.1 b** ~~99.1~~ **100**	**0.0 b 100.0**	0.0 b 100.0

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				~~5~~ *4*	*Mean* Min Max	~~6.4~~ *6.7* 4.1 11.1	~~83.1~~ ***91.1*** ~~50.9~~ **75.0** **100.0**	~~79.6~~ ***89.4*** ~~40.0~~ **70.1** **100.0**	~~74.7~~ *86.5* ~~29.1~~ 69.4 100.0
LEAF3 early	GBR	49	15	TA	PESSEV Efficacy	13.3 a a	**1.2 d** ~~91.0~~ **90.7** d	**1.5 cd** ~~88.7~~ **88.6** d	2.8 c ~~78.9~~ 79.0 c
	FRA	40	13		PESSEV Efficacy	4.2 a	**0.6 c** ~~85.7~~ **86.9**	**0.6 c** ~~85.7~~ **84.8**	0.8 c ~~81.0~~ 81.6
	DEU	49	14		PESSEV Efficacy	15.1 a	**0.0 c** **100.0**	**0.2 c** **98.7**	0.3 c ~~98.0~~ 98.2
	DEU	53	16		PESSEV Efficacy	14.1 a	**0.2 b** ~~98.6~~ **98.9**	**0.2 b** ~~98.6~~ **98.8**	0.1 b ~~99.3~~ 99.6
Mean efficacy				*4*	*Mean* Min Max	*11.7* 4.2 15.1	~~93.8~~ ***94.1*** ~~85.7~~ **86.9** **100.0**	~~92.9~~ ***92.7*** ~~85.7~~ **84.8** **98.7**	~~89.3~~ *89.6* ~~78.9~~ 79.0 ~~99.3~~ 99.6
LEAF4 early	GBR	35	15	TL	PESSEV Efficacy	33.4 a a	**6.6 bc** **80.2** c	**4.8 bc** ~~85.6~~ **85.5** c	17.7 b 47.0 ab
	DEU	43	15	TA	PESSEV Efficacy	10.1 a a	**1.5 f** ~~85.1~~ **85.7** f	**1.8 ef** ~~82.2~~ **82.6** ef	4.7 b ~~53.5~~ 54.1 b
	DEU	49	14		PESSEV Efficacy	25.8 a	**0.1 e** ~~99.6~~ **99.7**	**1.0 cde** ~~96.1~~ **96.0**	1.2 cde ~~95.3~~ 95.4
	DEU	31	14	TL	PESSEV Efficacy	18.6 a a	**0.0 d** **100.0** h	**0.3 d** ~~98.4~~ **98.3** fgh	0.6 d ~~96.8~~ 97.0 fg
Mean efficacy				*4*	*Mean* Min Max	*22.0* 10.1 33.4	~~91.3~~ ***91.4*** **80.2** **100.0**	***90.6*** ~~82.2~~ **82.6** ~~98.4~~ **98.3**	~~73.1~~ *73.4* 47.0 ~~96.8~~ 97.0

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, five trials with assessments on **leaf level 2 early** after two applications were available. The mean efficacy across all trials reveals dose response across the three tested dose rates with 8% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 5% difference between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate no statistically significant difference for any of the trials. Numerical difference was up to 21% between the 1.4L/ha and the 1.0 L/ha dose rate in one trial. For two trials, the performance was exactly (no difference) or nearly identical (1%) across all dose rates.

For **leaf level 3 early**, the mean efficacy after two applications across four trials shows very slight dose response for the tested dose rates of CA3642 (difference of 1 and 4% respectively between the tested dose rates). The detailed view on the single assessments reveals statistically significant difference and distinct numerical difference (12%) between the 1.4L/ha dose rate and the 1.0 L/ha dose rate in one trial. For all other trials, the performance across the dose rates was comparable and reflects the mean results.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, four trials with assessments on **leaf level 4 early** were available. The mean efficacy after two applications reveals clear dose response between the 1.4L/ha and 1.2/L/ha dose rate on the one hand and the reduced dose rate of CA3642 on the other hand (difference of 18 and 17% respectively). The detailed view on the single assessments reveals statistically significant differences between the target dose rates and the 1.0 L/ha dose rate in 2 trials, and in 3 trials between 1.4 L/ha and the 1.0 L/ha rate.

Table 3.2-101: Minimum effective dose of CA3642 after <u>2 applications</u> against ERYSGR/T in wheat – <u>Late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	DEU	60	25		PESSEV Efficacy	4.1 a	**0.2 c** ~~95.1~~ **94.5**	**0.6 c** ~~85.4~~ **85.8**	1.0 c ~~75.6~~ 76.3
Mean efficacy				*1*		*4.1*	~~*95.1*~~ ***94.5***	~~*85.4*~~ ***85.8***	~~*75.6*~~ *76.3*
LEAF2 late	~~FRA~~	~~57~~	~~30~~	~~-~~	~~PESSEV Efficacy~~	~~4.4 bc~~	~~3.2 bcd 27.3~~	~~3.1 bcd 29.5~~	~~5.0 b 0.0~~
	DEU	45	28	TA	PESSEV Efficacy	15.7 a a	**0.9 d** ~~94.3~~ **94.1** ef	**2.9 cd** ~~81.5~~ **81.9** e	3.0 cd 80.9 e
	DEU	60	25		PESSEV Efficacy	11.4 a	**1.3 de** ~~88.6~~ **88.7**	**2.0 de** ~~82.5~~ **82.4**	3.1 bcd ~~72.8~~ 72.5
Mean efficacy				~~3~~ 2	*Mean* Min Max	~~*10.5*~~ *13.6* ~~4.4~~ 11.4 15.7	~~*70.0*~~ ***91.4*** ~~27.3~~ **88.7** ~~94.3~~ **94.1**	~~*64.5*~~ ***88.2*** ~~29.5~~ **81.9** ~~82.5~~ **82.4**	~~*51.2*~~ *76.7* ~~0.0~~ 72.5 80.9
LEAF3 late	DEU	45	28		PESSEV Efficacy	16.7 a	**0.2 c** ~~98.8~~ **98.9**	**0.8 c** ~~95.2~~ **95.5**	1.5 c 91.0
Mean efficacy				*1*		*16.7*	~~*98.8*~~ ***98.9***	~~*95.2*~~ ***95.5***	*91.0*

The results of one single trial on leaf level 1 late demonstrate clear numerical (difference 10% and 20% respectively), but no statistically significant dose response after two applications of 1.2 and 1.4 L/ha dose rate and the lowered 1.0 L/ha dose rate of CA3642.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, three trials with assessments on **leaf level 2 late** were available. The mean efficacy reveals clear dose response between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate of CA3642 (difference 19%). The performance of the 1.2 L/ha dose rate was distinctly superior to the 1.0 L/ha dose rate (difference 13%). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For **leaf level 3 late**, the efficacy after two applications in one trial reveals clear numerical dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 8 and 9% respectively). No dose response was observable between the 1.4 L and 1.2 L/ha of CA3642; the lower dose rate was slightly superior compared to the higher dose rate. The difference was not statistically significant.

Table 3.2-102: Minimum effective dose of CA3642 after <u>2 applications</u> against ERYSGR/T in wheat – <u>Very late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 very late	DEU	81	46		PESSEV Efficacy	5.2 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type / Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC: 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
	DEU	75	38		PESSEV Efficacy	11.5 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.2 b ~~98.3~~ 98.2
Mean efficacy				*2*	*Mean* Min Max	*8.4* 5.2 11.5	***100.0*** **100.0** **100.0**	***100.0*** **100.0** **100.0**	*99.1* ~~98.3~~ 98.2 100.0
LEAF2 very late	DEU	72	37		PESSEV Efficacy	5.4 a	**0.2 b** ~~96.3~~ **96.8**	**0.3 b** ~~94.4~~ **94.9**	0.8 b ~~85.2~~ 86.1
	DEU	59	42	TL	PESSEV Efficacy	8.9 a a	**0.4 c** ~~95.5~~ **95.4** e	**1.4 c** **84.3** cde	2.1 c ~~76.4~~ 76.6 c
	DEU	75	38		PESSEV Efficacy	10.3 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.2 b ~~98.1~~ 98.6
Mean efficacy				*3*	*Mean* Min Max	*8.2* 5.4 10.3	~~*97.3*~~ ***97.4*** ~~95.5~~ **95.4** **100.0**	~~*92.9*~~ ***93.1*** **84.3** **100.0**	~~*86.5*~~ *87.1* ~~76.4~~ 76.6 ~~98.1~~ 98.6

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, two trials with assessments on **leaf level 1 very late** were available. The mean efficacy reveals very slight dose response between the target dose rates on the one hand and the lowered dose rate on the other hand (difference: 1%). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, three trials with assessments on **leaf level 2 very late** were available. The mean efficacy reveals very slight dose response between the target dose rates on the one hand and the lowered dose rate on the other hand (difference: 2%). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

Table 3.2-103: Minimum effective dose of CA3642 after 1 application against ERYSGR/T in wheat – Early assessment timing – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type / Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC: 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 1 application									
LEAF4 early	GBR	16		TA	PESSEV Efficacy	9.78 a a	**0.63 d** ~~93.6~~ **93.5** c	**0.95 d** **90.3** bc	0.98 d 90.0 bc
	DEU	15			PESSEV Efficacy	4.4 a	**1.6 cd** **63.6**	**1.1 de** ~~75.0~~ **74.5**	1.9 c ~~56.8~~ 57.0
	DEU	15			PESSEV Efficacy	6.9 a	**2.0 cde** ~~71.0~~ **71.7**	**2.2 cd** ~~68.1~~ **67.9**	1.1 fg ~~84.1~~ 83.6
Mean efficacy				*3*	*Mean* Min Max	*7.0* 4.4 9.8	~~*76.1*~~ ***76.3*** **63.6** ~~93.6~~ **93.5**	~~*77.8*~~ ***77.6*** ~~68.1~~ **67.9** **90.3**	~~*77.0*~~ *76.9* ~~56.8~~ 57.0 90.0

For **leaf level 4 early**, the mean efficacy after one application across three trials reveals no dose response across the three tested dose rates of CA3642. The performance of the tested dose rates was comparable. The detailed view on the single assessments reveals a statistically significant difference between the target dose rates and the reduced dose rate in one of the trials, where the performance of the reduced dose rate was superior. In one trial, the dose rate of 1.2 L/ha of CA3642 was statistically significantly superior to the 1.0 L/ha dose rate.

Table 3.2-104: Minimum effective dose of CA3642 after <u>1 application</u> against ERYSGR/T in wheat – <u>Late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 1 application									
LEAF2 late	FRA	30		TA	PESSEV Efficacy	6.4 a a	**0.5 c** ~~92.2~~ **92.0** bc	**0.8 c** **87.5** bc	1.1 c ~~82.8~~ 82.4 b
Mean efficacy				*1*		*6.4*	~~*92.2*~~ ***92.0***	***87.5***	*82.8*
LEAF3 late	FRA	30		TA	PESSEV Efficacy	4.2 a a	**0.8 b** ~~81.0~~ **80.4** bc	**0.6 b** ~~85.7~~ **85.2** bc	1.6 b ~~61.9~~ 62.3 b
	GBR	34			PESSEV Efficacy	8.53 a	**0.42 d** **95.1**	**1.06 cd** **87.6**	2.21 c ~~74.1~~ 74.0
Mean efficacy				*2*	*Mean* Min Max	*6.4* 4.2 8.5	~~*88.0*~~ ***87.8*** ~~81.0~~ **80.4** **95.1**	~~*86.6*~~ ***86.4*** ~~85.7~~ **85.2** **87.6**	~~*68.0*~~ *68.2* ~~61.9~~ 62.3 ~~74.1~~ 74.0
LEAF4 late	DEU	28			PESSEV Efficacy	7.2 a	**1.6 bc** ~~77.8~~ **77.3**	**1.2 cd** ~~83.3~~ **83.4**	2.1 b ~~70.8~~ 70.4
Mean efficacy				*1*		*7.2*	~~*77.8*~~ ***77.3***	~~*83.3*~~ *83.4*	~~*70.8*~~ *70.4*

For **leaf level 2 late**, the efficacy after one application was assessed in one trial. The efficacy reveals dose response across the three tested dose rates with 9% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 5% between the 1.2 L/ha and the 1.0 L/ha dose rate. The difference was not statistically significant.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, two trials with assessments on **leaf level 3 late** were available. The mean efficacy after one application reveals clear dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 20 and 19% respectively). The detailed view on the single assessments reveals a clear numerical (21%) and statistically significant difference between the 1.4 L/ha dose rate and the reduced dose rate in one of the trials.

The results of one single trial on **leaf level 4 late** demonstrate no dose response after one application of the 1.2 and 1.4 L/ha target dose rates and the lowered 1.0 L/ha dose rate of CA3642. The 1.2 L/ha dose rate was numerically slightly superior to the 1.4 L/ha dose rate (difference 5.5%) and statistically significantly superior to the 1.0 L/ha dose rate.

Table 3.2-105: Minimum effective dose of CA3642 after <u>1 application</u> against ERYSGR/T in wheat – <u>Very late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials &	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC

				ARM	**Rate**		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 very late	DEU	37			PESSEV Efficacy	4.1 a	**0.1 bc** ~~97.6~~ **96.7**	**0.2 b** ~~95.1~~ **95.7**	0.0 cd ~~100.0~~ 99.4
Mean efficacy				*1*		*4.1*	*~~97.6~~* ***96.7***	*~~95.1~~* ***95.7***	*~~100.0~~ 99.4*
LEAF4 very late	DEU	35			PESSEV Efficacy	16.7 a	**0.0 b** ~~100.0~~ **99.8**	**0.4 b** ~~97.6~~ **97.7**	1.2 b ~~92.8~~ 92.7
	DEU	37			PESSEV Efficacy	6.7 a	**0.4 b** ~~94.0~~ **94.4**	**0.6 b** ~~91.0~~ **91.1**	0.1 b ~~98.5~~ 98.0
Mean efficacy				*2*	*Mean* Min Max	*11.7* 6.7 16.7	*~~97.0~~* ***97.1*** ~~94.0~~ **94.4** ~~100.0~~ **99.8**	*~~94.3~~* ***94.4*** ~~91.0~~ **91.1** ~~97.6~~ **97.7**	*~~95.7~~ 95.4* ~~92.8~~ 92.7 ~~98.5~~ 98.0

The results of one single trial on **leaf level 3 very late** demonstrate no dose response after one application of 1.2 and 1.4 L/ha dose rate and the lowered 1.0 L/ha dose rate of CA3642. The performance of the lowered dose rate was numerical superior to both target dose rates, and compared to the 1.2 L/ha dose rate statistically significant.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, two trials with assessments on **leaf level 4 very late** were available. The mean efficacy reveals no dose response across the dose rates of CA3642. While the 1.4 L/ha dose rate reveals the highest mean efficacy, the 1.2 L/ha dose rate was slightly inferior to the lowered dose rate. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

Comments of zRMS:

9 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high results after 2 applications, either in the early and late assessments. Full effectiveness at 1,2-1,4 l/ha was noted on L1 in the very late assessment. The dose rate of 1 l/ha presented moderate to high level of control but difference between this rate and 1,4 l/ha was 10-20%. Dose response was visible after 1 application. The test product at 1 l/ha had effectiveness of 68,2% and higher doses achieved >85% on L3 in the late assessment. Taking into account all results, the dose rate of 1,2 l/ha can be determined MED for control of ERYSGR in winter wheat in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – ERYSGR/T – North-East EPPO zone

A total of 11 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Blumeria graminis* (ERYSGR/T).
The trials were carried out in Poland (5), Lithuania (5) and Latvia (1) from 2019 to 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 16 - 49 days later, at BBCH 39 – 61.

Table 3.2-106: Minimum effective dose of CA3642 after <u>2 applications</u> against ERYSGR/T in wheat – <u>Early assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 early	POL	50	15		PESSEV Efficacy	8.4 a	**0.7 c** ~~91.7~~ **92.1**	**1.3 c** ~~84.5~~ **84.1**	0.9 c ~~89.3~~ 89.1
	POL	41	13		PESSEV Efficacy	7.3 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	POL	45	15		PESSEV Efficacy	10.1 a	**0.0 b** **100.0**	**0.2 b** ~~98.0~~ **98.1**	0.2 b ~~98.0~~ 98.1
	LTU	30	14		PESSEV Efficacy	10.6 a	**2.3 cd** ~~78.3~~ **77.9**	**3.4 cd** ~~67.9~~ **68.3**	3.7 cd ~~65.1~~ 65.4
	LTU	31	15		PESSEV Efficacy	7.5 a	**0.1 c** **98.7**	**1.0 c** ~~86.7~~ **86.9**	1.4 c ~~81.3~~ 80.9
	LTU	31	15		PESSEV Efficacy	8.3 a	**2.6 b** **68.7**	**3.0 b** **63.9**	3.6 b 56.6
Mean efficacy				*6*	*Mean* Min Max	*8.7* 7.3 10.6	***89.6*** **68.7** **100.0**	~~*83.5*~~ ***83.6*** **63.9** **100.0**	*81.7* 56.6 100.0
LEAF3 early	POL	50	15	TL	PESSEV Efficacy	23.8 a a	**0.7 c** ~~97.1~~ **97.0** **d**	**1.1 bc** **95.4** **d**	1.1 bc ~~95.4~~ 95.2 d
	POL	64	15		PESSEV Efficacy	6.5 a	**0.3 b** ~~95.4~~ **95.2**	**0.4 b** ~~93.8~~ **93.3**	1.4 b ~~78.5~~ 79.0
	POL	41	13	TA	PESSEV Efficacy	17.2 a a	**1.7 c** ~~90.1~~ **90.3** **c**	**3.2 c** ~~81.4~~ **81.2** **c**	3.5 c ~~79.7~~ 79.6 c
	POL	49	15		PESSEV Efficacy	30.9 a	**2.1 b** ~~93.2~~ **93.3**	**2.9 b** **90.6**	2.5 b 91.9
	POL	45	15		PESSEV Efficacy	15.2 a	**0.1 b** ~~99.3~~ **99.2**	**0.4 b** ~~97.4~~ **97.5**	0.4 b ~~97.4~~ 97.1
	LTU	39	14		PESSEV Efficacy	5.1 ab	**2.3 c** ~~54.9~~ **55.5**	**3.9 bc** ~~23.5~~ **23.1**	5.1 ab ~~0.0~~ 1.2
	LTU	30	14	TA	PESSEV Efficacy	10.6 a a	**3.5 de** ~~67.0~~ **67.2** **e**	**3.9 de** ~~63.2~~ **63.1** **de**	4.4 cde ~~58.5~~ 58.7 de
	LTU	31	15		PESSEV Efficacy	11.5 a	**2.2 b** ~~80.9~~ **80.7**	**3.6 b** ~~68.7~~ **69.1**	3.6 b ~~68.7~~ 68.4
Mean efficacy				*8*	*Mean* Min Max	*15.1* 5.1 30.9	~~*84.7*~~ ***84.8*** ~~54.9~~ **55.5** ~~99.3~~ **99.2**	~~*76.8*~~ ***76.7*** ~~23.5~~ **23.1** ~~97.4~~ **97.5**	~~*71.2*~~ *71.4* ~~0.0~~ 1.2 ~~97.4~~ 97.1
LEAF4 early	POL	64	15	TA	PESSEV Efficacy	4.8 a a	**0.9 b** ~~81.3~~ **81.8** **b**	**0.4 b** ~~91.7~~ **92.2** **b**	1.1 b ~~77.1~~ 76.6 b
Mean efficacy				*1*		*4.8*	~~*81.3*~~ ***81.8***	~~*91.7*~~ ***92.2***	~~*77.1*~~ *76.6*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 2 early**, the mean efficacy after two applications across six trials reveals dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 8% and 2% respectively. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. Numerical difference was up to 13% and 12% respectively between the 1.4L/ha and the 1.0 L/ha dose rate in two trials. For one trial, the performance across all three dose rates was equivalent.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, eight trials with assessments on **leaf level 3 early** were available. The mean efficacy reveals a clear dose response across the three tested dose rates with 12% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 5% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate statistically significant difference between the highest and the lowest dose rate in one trial. For all other trials, no statistically significant difference was assessed, albeit a clear numerical difference up to 17% in one trial. In another trial, the reduced dose rate demonstrate no efficacy.

For **leaf level 4 early**, the efficacy after one application in one trial demonstrates a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642. The 1.2 L/ha dose rate was distinctly superior compared to the 1.4 L/ha and 1.0 L/ha dose rate. No statistically significant difference was assessed.

Table 3.2-107: Minimum effective dose of CA3642 after 2 applications against ERYSGR/T in wheat – Late and Very late assessment timings – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF 2 late	POL	53	23		PESSEV Efficacy	6.8 a	**0.2 b** ~~97.1~~ **97.2**	**0.4 b** ~~94.1~~ **93.5**	1.6 b ~~76.5~~ 75.9
Mean efficacy				*1*		*6.8*	***~~97.1~~ 97.2***	***~~94.1~~ 93.5***	*~~76.5~~ 75.9*
LEAF1 very late	POL	70	42	TIO	PESSEV Efficacy	6.4 a a	**0.0 c** **100.0** c	**0.0 c** **100.0** c	0.0 c 100.0 c
Mean efficacy				*1*		*6.4*	***100.0***	***100.0***	*100.0*
LEAF2 very late	POL	70	42		PESSEV Efficacy	15.6 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
Mean efficacy				*1*		*15.6*	***100.0***	***100.0***	*100.0*

After two applications of CA3642 applied at 1.2-1.4 L/ha

For **leaf level 2 late**, the efficacy after two applications in one trial reveals clear numerical (21% and 8% respectively). No statistically significantly superior efficacy of the 1.4 L and 1.2 L/ha dose rate of CA3642 compared to the lowered 1.0 L/ha dose rate was assessed.

For both **leaf level 1 very late** and **leaf level 2 very late**, the efficacy after two applications in one trial each was equivalent for all three tested dose rates.

Table 3.2-108: Minimum effective dose of CA3642 after 1 application against ERYSGR/T in wheat – Early assessment timing – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials &**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**

				ARM	Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF2 early	LTU	16		TA	PESSEV Efficacy	10.8 a a	**0.2 c** ~~98.1~~ **98.6** d	**0.7 c** ~~93.5~~ **93.4** c	0.8 c ~~92.6~~ 93.1 c
	LTU	17			PESSEV Efficacy	4.0 a	**0.0 c** ~~100.0~~ **99.1**	**0.1 c** ~~97.5~~ **98.4**	0.1 c ~~97.5~~ 98.7
Mean efficacy				*2*	*Mean* Min Max	*7.4* 4.0 10.8	*~~99.1~~* ***98.9*** ~~98.1~~ **98.6** ~~100.0~~ **99.1**	*~~95.5~~* ***95.9*** ~~93.5~~ **93.4** ~~97.5~~ **98.4**	*~~95.0~~* *95.9* ~~92.6~~ 93.1 ~~97.5~~ 98.7
LEAF3 early	LTU	14		TA	PESSEV Efficacy	7.0 a a	**1.6 de** ~~77.1~~ **77.2** e	**2.3 cd** **67.1** de	2.3 cd 67.1 de
	LTU	16			PESSEV Efficacy	8.7 a	**0.1 c** ~~98.9~~ **99.0**	**0.5 c** ~~94.3~~ **94.7**	0.5 c ~~94.3~~ 94.0
	LTU	16		TA	PESSEV Efficacy	12.1 a a	**0.9 c** ~~92.6~~ **92.7** c	**1.8 c** ~~85.1~~ **84.8** bc	2.8 c 76.9 b
	LTU	16			PESSEV Efficacy	7.7 a	**1.3 c** ~~83.1~~ **83.5**	**1.1 c** **85.7**	1.8 c ~~76.6~~ 76.3
	LTU	17		TA	PESSEV Efficacy	6.8 a a	**0.7 c** ~~89.7~~ **90.4** c	**0.5 c** ~~92.6~~ **93.1** c	0.8 c ~~88.2~~ 88.5 c
Mean efficacy				*5*	*Mean* Min Max	*8.5* 6.8 12.1	*~~88.3~~* ***88.6*** ~~77.1~~ **77.2** ~~98.9~~ **99.0**	*~~85.0~~* ***85.1*** **67.1** ~~94.3~~ **94.7**	*80.6* 67.1 ~~94.3~~ 94.0
LEAF4 early	LTU	14			PESSEV Efficacy	14.7 a	**5.0 def** **66.0**	**6.4 c-f** ~~56.5~~ **56.3**	6.2 c-f ~~57.8~~ 58.1
	LVA	15		TA	PESSEV Efficacy	5.5 a a	**0.5 b** ~~90.9~~ **90.7** e	**1.0 b** ~~81.8~~ **82.4** de	1.7 b ~~69.1~~ 69.5 b-e
	LTU	16		TA	PESSEV Efficacy	12.3 a a	**0.7 c** ~~94.3~~ **94.0** d	**1.2 c** ~~90.2~~ **90.6** cd	2.1 c ~~82.9~~ 82.8 c
	LTU	17			PESSEV Efficacy	7.3 a	**2.5 bc** ~~65.8~~ **66.3**	**1.3 c** **82.2**	2.1 bc ~~71.2~~ 71.1
Mean efficacy				*4*	*Mean* Min Max	*10.0* 5.5 14.7	*~~79.2~~* ***79.3*** ~~65.8~~ **66.3** ~~94.3~~ **94.0**	*~~77.7~~* ***77.9*** ~~56.5~~ **56.3** ~~90.2~~ **90.6**	*~~70.3~~* *70.4* ~~57.8~~ 58.1 ~~82.9~~ 82.8

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, two trials with assessments on **leaf level 2 early** after one application were available. The mean efficacy across all trials reveals very slight dose response across the three tested dose rates with 4% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 0.5% difference between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate no statistically significant difference for any of the trials.

For **leaf level 3 early**, the mean efficacy after one application across five trials shows dose response for the tested dose rates of CA3642 (difference of 3 and 4% respectively between the tested dose rates). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. Numerical difference was up to 16% and 10% respectively between the 1.4L/ha and the 1.0 L/ha dose rate in two trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, four trials with assessments on **leaf level 4 early** were available. The mean efficacy after one application reveals slight dose response across the tested dose rates of CA3642 (difference of 1.5 and 7% respectively between the tested dose rates). The detailed view on the single assessments reveals a statistically significant difference between the 1.4 L/ha rate and the reduced dose rate in one of the trials. In two trials, clear numerical dose response was assessed with differences of 9% and 11% respectively in one trial and 4 and 9% in the other trial between the tested dose rates.

Table 3.2-109: Minimum effective dose of CA3642 after 1 application against ERYSGR/T in wheat – Late assessment timing – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 late	LTU	25			PESSEV Efficacy	6.5 a	**2.4 def** ~~63.1~~ **63.2**	**2.9 cde** ~~55.4~~ **55.7**	4.0 bcd ~~38.5~~ 38.3
	LVA	27			PESSEV Efficacy	8.0 a	**1.2 bc** ~~85.0~~ **85.3**	**0.7 bc** ~~91.3~~ **91.4**	1.0 bc ~~87.5~~ 87.2
	POL	28			PESSEV Efficacy	13.1 a	**0.7 cd** ~~94.7~~ **95.0**	**1.1 cd** ~~91.6~~ **92.0**	2.4 c ~~81.7~~ 81.8
	POL	34			PESSEV Efficacy	4.7 a	**0.5 c** ~~89.4~~ **90.4**	**0.9 c** ~~80.9~~ **81.1**	0.8 c ~~83.0~~ 83.2
Mean efficacy				*4*	*Mean* Min Max	*8.1* 4.7 13.1	~~83.0~~ ***83.5*** ~~63.1~~ **63.2** ~~94.7~~ **95.0**	~~79.8~~ ***80.1*** ~~55.4~~ **55.7** ~~91.6~~ **92.0**	~~72.7~~ *72.6* ~~38.5~~ 38.3 ~~87.5~~ 87.2
LEAF4 late	POL	28		TA	PESSEV Efficacy	31.8 a a	**1.4 c** **95.6** de	**2.8 c** ~~91.2~~ **91.1** cde	4.7 c 85.2 bc
	POL	34		TA	PESSEV Efficacy	11.9 a a	**0.6 c** ~~95.0~~ **94.9** c	**2.0 bc** **83.2** c	1.4 c ~~88.2~~ 88.1 c
	LTU	25		TL	PESSEV Efficacy	17.3 a a	**6.4 bc** **63.0** c	**7.8 b** **54.9** bc	7.1 b ~~59.0~~ 59.1 bc
Mean efficacy				*3*	*Mean* Min Max	***20.3*** 11.9 31.8	***84.5*** 63.0 95.6	***76.4*** **54.9** ~~91.2~~ **91.1**	***77.5*** ~~59.0~~ 59.1 ~~88.2~~ 88.1

After one application of CA3642 applied at 1.2-1.4 L/ha

For **leaf level 3 late**, the mean efficacy after one application across four trials reveals slight dose response between 1.2 and 1.4 L/ha dose rate respectively and the lowered 1.0 L/ha dose rate (difference of 3 and 7% between the tested dose rates). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. Numerical difference was up to 25% and 13% respectively between the 1.4L/ha and the 1.0 L/ha dose rate in two trials. In one trial, the performance of the lowered dose rate was superior to the 1.4 L/ha dose rate but inferior to the 1.2 L/ha.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, three trials with assessments on **leaf level 4 late** were available. The mean efficacy after one application reveals dose response between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate of CA3642 (difference 7%). The performance of the 1.2 L/ha dose rate was inferior to the 1.0 L/ha dose rate (difference 1%). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. In one trial, numerical dose response was assessed with differences of 4% and 6% respectively across the three tested dose rates. For all trials, the efficacy of the highest dose rate was superior to the lowest dose rate.

Table 3.2-110: Minimum effective dose of CA3642 after <u>1 application</u> against ERYSGR/T in wheat – <u>Very late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 very late	POL	35			PESSEV Efficacy	6.8 a	**0.1 c** ~~98.5~~ **98.9**	**0.2 c** ~~97.1~~ **96.9**	0.7 c ~~89.7~~ 89.3
	POL	49			PESSEV Efficacy	6.4 a	**0.3 b** ~~95.3~~ **95.1**	**0.6 b** ~~90.6~~ **90.2**	0.9 b ~~85.9~~ 86.3
Mean efficacy				2	*Mean* Min Max	*6.6* 6.4 6.8	~~*96.9*~~ ***97.0*** ~~95.3~~ **95.1** ~~98.5~~ **98.9**	~~*93.8*~~ ***93.6*** ~~90.6~~ **90.2** ~~97.1~~ **96.9**	*87.8* ~~85.9~~ 86.3 ~~89.7~~ 89.3
LEAF4 very late	POL	49			PESSEV Efficacy	6.4 a	**0.6 b** ~~90.6~~ **91.2**	**0.9 b** ~~85.9~~ **86.3**	1.1 b ~~82.8~~ 83.3
	POL	35			PESSEV Efficacy	14.8 a	**0.3 c** ~~98.0~~ **98.3**	**0.7 c** ~~95.3~~ **95.1**	1.2 c ~~91.9~~ 92.0
Mean efficacy				2	*Mean* Min Max	*10.6* 6.4 14.8	~~*94.3*~~ ***94.8*** ~~90.6~~ **91.2** ~~98.0~~ **98.3**	~~*90.6*~~ ***90.7*** ~~85.9~~ **86.3** ~~95.3~~ **95.1**	~~*87.4*~~ *87.7* ~~82.8~~ 83.3 ~~91.9~~ 92.0

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 3 very late**, the mean efficacy after one application across two trials reveals distinct dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 9 and 6% respectively). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. In one trial, the dose response was observable across the three dose rates (difference 5% each between the dose rates).

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, two trials with assessments on **leaf level 4 very late** were available. The mean efficacy after one application reveals slight dose response across all dose rates of CA3642 (difference 3 and 4% respectively). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

Comments of zRMS:

11 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* in winter wheat in the North-East EPPO zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy at 1 l/ha was significantly inferior and difference between this rate and the higher doses was 10-20%. Also after 1 application, the test product at 1,2-1,4 l/ha presented good results (76,4-98,9%). Taking into account all trials, the dose rate of 1, 2 l/ha can be determined MED for control of ERYSGR in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – ERYSGR/T – South-East EPPO zone

A total of 8 trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Blumeria graminis* (ERYSGR/T).
The first application took place at crop stage BBCH 31 - 35 and the second application was done 15 - 28 days later, at BBCH 41 – 55.

Table 3.2-111: Minimum effective dose of CA3642 after 2 applications against ERYSGR/T in wheat – Early assessment timing – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 early	HUN	35	15		PESSEV Efficacy	9.81 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	ROU	30	15		PESSEV Efficacy	5.19 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	ROU	30	15		PESSEV Efficacy	5.20 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	SVK	36	15		PESSEV Efficacy	5.80 a	**0.43 g** ~~92.6~~ **92.7**	**0.50 g 91.4**	0.83 f ~~85.7~~ 85.8
	SVK	36	15		PESSEV Efficacy	7.50 a	**0.54 g 92.8**	**0.65 g 91.3**	0.88 f 88.3
Mean efficacy				*5*	*Mean* Min Max	*6.7* 5.2 9.8	***97.1*** ~~92.6~~ **92.7** **100.0**	***96.5*** **91.3** **100.0**	*94.8* ~~85.7~~ 85.8 100.0
LEAF3 early	HUN	32	15	TA	PESSEV Efficacy	15.91 a a	**0.31 c** ~~98.1~~ **98.0** c	**0.63 c** ~~96.0~~ **96.1** c	1.60 c ~~89.9~~ 90.0 c
	HUN	35	15		PESSEV Efficacy	12.35 a	**0.00 b 100.0**	**0.00 b 100.0**	0.00 b 100.0
	HUN	35	15		PESSEV Efficacy	30.63 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	ROU	30	15		PESSEV Efficacy	13.51 a	**1.41 e** ~~89.6~~ **89.5**	**2.05 cd 84.8**	2.35 c 82.6
	ROU	30	15		PESSEV Efficacy	12.94 a	**1.15 d 91.1**	**1.36 cd 89.5**	1.76 bcd 86.4
	SVK	36	15		PESSEV Efficacy	13.04 a	**1.84 g 85.9**	**2.24 f 82.8**	2.79 e 78.6
	SVK	36	15		PESSEV Efficacy	16.74 a	**2.48 g 85.2**	**2.93 f 82.5**	3.86 e 76.9
Mean efficacy				*7*	*Mean* Min Max	*16.4* 12.4 30.6	***92.8*** **85.2** **100.0**	***90.8*** **82.5** **100.0**	*87.8* 76.9 100.0

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF4 early	HUN	32	15	TL	PESSEV Efficacy	61.63 a a	**2.86 c 95.4** cd	**4.64 c 92.5** cd	6.43 c 89.6 c
	ROU	43	15	TA	PESSEV Efficacy	100.00 a a	**0.01 b 100.0** b	**0.01 b 100.0** b	0.01 b 100.0 b
Mean efficacy				*2*	*Mean* Min Max	*80.8* 61.6 100.0	***97.7*** **95.4 100.0**	***96.2*** **92.5 100.0**	*94.8* 89.6 100.0

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 2 early**, the mean efficacy after two applications across five trials reveals no clear dose response. However, the mean performance of the 1.4 L and 1.2 L/ha of CA3642 was slightly superior to the lowered 1.0 L/ha dose rate. The detailed view on the single assessments reveals a statistically significant difference between the target dose rates and the reduced dose rate in two out of five trials. For three trials, the performance for all three dose rates was equivalent.

For **leaf level 3 early**, the mean efficacy after two applications across seven trials demonstrates clear dose response between 1.4 L of CA3642 and the lowered 1.0 L/ha dose rate. The difference in efficacy was 5%. Between the 1.2 L/ha and the 1.0 L/ha dose rate was at least 3%. The more detailed view on the single trial results shows statistically significant differences between the target dose rates and the lowered dose rates in two trials; in one additional trial, the 1.4 L/ha dose rate was statistically significantly superior to the lowered dose rate. For two trials, the performance for all three dose rates was equivalent.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, two trials with assessments on **leaf level 4 early** were available. The mean efficacy reveals a slight dose response across the three tested dose rates with 3% difference between the 1.4 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate equivalent performance for all three dose rates in one trial. In the second trial, no statistically significant difference was assessed, but at least numerical dose response (6% difference between the 1.4 L/ha and the 1.0 L/ha dose rate).

Table 3.2-112: Minimum effective dose of CA3642 after <u>2 applications</u> against ERYSGR/T in wheat – <u>Very late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	HUN	65	45		PESSEV Efficacy	12.0 a	**0.0 b 100.0**	**0.0 b 100.0**	0.0 b 100.0
	ROU	58	43		PESSEV Efficacy	8.8 a	**0.7 f** ~~92.0~~ **92.4**	**0.9 e** ~~89.8~~ **89.6**	1.6 d ~~81.8~~ 82.3
	ROU	58	43		PESSEV Efficacy	7.2 a	**0.1 d** ~~98.6~~ **98.3**	**0.2 d** ~~97.2~~ **97.4**	0.4 d ~~94.4~~ 95.1
	SVK	57	36		PESSEV Efficacy	5.1 a	**0.4 f** ~~92.2~~ **92.9**	**0.4 f** ~~92.2~~ **92.0**	0.6 e ~~88.2~~ 88.8
	SVK	57	36		PESSEV	6.8 a	**0.6 f**	**0.7 f**	1.0 e

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
					Efficacy		~~91.2~~ **91.5**	~~89.7~~ **90.0**	~~85.3~~ 85.4
Mean efficacy				*5*	*Mean* Min Max	*8.0* 5.1 12.0	~~*94.8*~~ ***95.0*** ~~91.2~~ **91.5** **100.0**	***93.8*** ~~89.7~~ **89.6** **100.0**	~~*90.0*~~ *90.3* ~~81.8~~ 82.3 100.0
LEAF2 very late	HUN	64	47	TA	PESSEV Efficacy	8.7 a a	**2.8 b** ~~67.8~~ **67.5** bc	**3.2 b** ~~63.2~~ **63.9** b	3.9 b ~~55.2~~ 55.7 b
	HUN	62	42		PESSEV Efficacy	11.1 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	HUN	65	45		PESSEV Efficacy	26.3 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	ROU	58	43		PESSEV Efficacy	16.4 a	**2.4 e** ~~85.4~~ **85.6**	**3.0 d** ~~81.7~~ **82.0**	3.8 c ~~76.8~~ 77.2
	ROU	58	43		PESSEV Efficacy	15.6 a	**2.3 e** **85.3**	**2.5 e** ~~84.0~~ **83.9**	3.6 d ~~76.9~~ 77.3
	SVK	57	36		PESSEV Efficacy	11.2 a	**1.3 f** ~~88.4~~ **88.3**	**1.5 f** ~~86.6~~ **86.5**	2.0 e ~~82.1~~ 81.9
	SVK	57	36		PESSEV Efficacy	13.4 a	**1.7 g** **87.3**	**2.0 g** ~~85.1~~ **85.3**	2.7 f 79.9
Mean efficacy				*7*	*Mean* Min Max	*14.7* 8.7 26.3	***87.7*** ~~67.8~~ **67.5** **100.0**	~~*85.8*~~ ***85.9*** ~~63.2~~ **63.9** **100.0**	~~*81.6*~~ *81.7* ~~55.2~~ 55.7 100.0

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 very late**, the mean efficacy after two applications across five trials demonstrates clear dose response between 1.4 L and 1.2 L/ha of CA3642 and the lowered 1.0 L/ha dose rate. The difference in efficacy was 5% and 4% respectively. The detailed view on the single assessments reveals a statistically significant difference between the target dose rates and the reduced dose rate in three out of five trials. For one trial, the performance for all three dose rates was equivalent. In one trial, no statistically significant difference was evaluated. However, a numerical difference was observable.

For **leaf level 2 very late**, the mean efficacy after two applications across seven trials demonstrates dose response across the three teste dose rates of CA3642, especially between the target dose rates and the lowered 1.0 L/ha dose rate. The difference in mean efficacy was 4 - 6%. The more detailed view on the single trial results shows statistically significant differences between the target dose rates and the lowered dose rates in four trials; in one trial, no statistically significant, but numerical difference was observed. For two trials, the performance for all three dose rates was equivalent.

Table 3.2-113: Minimum effective dose of CA3642 after <u>1 application</u> against ERYSGR/T in wheat – <u>Early assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 early	ROU	15			PESSEV Efficacy	5.44 a	**0.46 cd** **91.5**	**0.68 c** ~~87.5~~ **87.6**	0.69 c ~~87.3~~ 87.4
	ROU	15			PESSEV Efficacy	5.28 a	**0.45 b** **91.5**	**0.54 b** **89.8**	0.61 b 88.4

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				*2*	*Mean* Min Max	*5.4* 5.3 5.4	***91.5*** **91.5** **91.5**	***88.6*** **87.5** **89.8**	*87.9* 87.3 88.4
LEAF4 early	HUN	15		TA	PESSEV Efficacy	7.13 a a	**0.75 b** **89.5** b	**0.76 b** **89.3** b	0.86 b 87.9 b
	HUN	18			PESSEV Efficacy	10.0 a	**1.9 b** ~~81.0~~ **81.4**	**1.7 b** ~~83.0~~ **82.7**	1.4 b ~~86.0~~ 85.8
	ROU	15			PESSEV Efficacy	8.80 a	**0.74 bc** **91.6**	**1.18 bc** **86.6**	1.65 b 81.3
	ROU	15			PESSEV Efficacy	8.38 a	**0.60 b** **92.8**	**0.64 b** **92.4**	0.79 b 90.6
Mean efficacy				*4*	*Mean* Min Max	*8.6* 7.1 10.0	~~88.7~~ ***88.8*** ~~81.0~~ **81.4** **92.8**	***87.8*** ~~83.0~~ **82.7** **92.4**	*86.4* 81.3 90.6

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 3 early**, the mean efficacy after one application across two trials reveals a slight dose response. The mean performance of the 1.4 L and 1.2 L/ha of CA3642 was superior to the lowered 1.0 L/ha dose rate (3.6 and 0.7% respectively). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in the two trials. While in both trials the performance of the 1.4 L/ha dose rate was numerically superior to the lowered dose rate, the 1.2 L/ha dose rate was almost comparable in one trial.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, four trials with assessments on **leaf level 4 early** after one application were available. The mean efficacy across all trials reveals no distinct dose response across the three tested dose rates with 2.3% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 0.9% difference between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate no statistically significant difference for any of the trials. For one trial, a distinct numerical difference of the 1.4 L and 1.2 L/ha of CA3642 compared to the lowered 1.0 L/ha dose rate was achieved (10% and 5% respectively). For one trial, the lowered dose rate was superior to the target dose rates. For the two remaining trials, the performance was almost comparable for the three dose rates.

Comments of zRMS:

8 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness with results of 85-98% after 2 applications, in the early and late assessments. No significant differences between dose rate of 1 l/ha and higher doses have been observed. Also good results have been noted after 1 application. The mean efficacy at 1,2-1,4 l/ha was 88-91%. Taking into account all results, the dose rate of 1,2 l/ha can be determined MED for control of ERYSGR in winter wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

Winter Wheat (TRZAW) – Brown rust (PUCCRE/T – *Puccinia recondita*)

17 field trials were established between 2019 and 2021 in order to determine the minimum effective dose of CA3642 for the control of *Puccinia recondita* (PUCCRE/T) in winter wheat.
The trials from the Maritime EPPO zone (7) were carried out in Germany, the United Kingdom and Northern France. The trials from the North-East EPPO zone (5) were carried out in Poland. The trials

from the South-East EPPO zone (5) were carried out in Hungary, Romania and Bulgaria.

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) and compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose*'.

TRZAW – PUCCRE/T – Maritime EPPO zone

A total of 7 trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Puccinia recondita* (PUCCRE/T). The trials were carried out in France (4), Germany (2) and Great Britain (1) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 37 and the second application was done 15 - 35 days later, at BBCH 39 - 57.

~~**Table 3.2-114: Minimum effective dose of CA3642 after 2 applications against PUCCRE/T in wheat – Early assessment timing - Maritime EPPO zone**~~

~~Leaf level assm. Timing~~	~~Country~~	~~DA-A~~	~~DA-B~~	~~No. of trials & ARM~~	~~Name Conc Type~~	~~UTC~~	~~CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC~~		
					~~Rate~~		~~1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha~~	~~1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha~~	~~1 L/ha 150 g AZX/ha + 150 g PTZ/ha~~
~~Efficacy after 2 applications~~									
~~LEAF2 early~~	~~FRA~~	~~43~~	~~16~~	- -	~~PESSEV Efficacy~~	~~8.9 a~~	~~0.0 b 100.0~~	~~0.1 b 98.9~~	~~0.1 b 98.9~~
~~*Mean efficacy*~~				~~*1*~~	-	~~*8.9*~~	~~*100.0*~~	~~*98.9*~~	~~*98.9*~~
~~LEAF3 early~~	~~FRA~~	~~43~~	~~16~~	- -	~~PESSEV Efficacy~~	~~7.8 a~~	~~0.4 d 94.9~~	~~0.2 d 97.4~~	~~0.6 d 92.3~~
~~*Mean efficacy*~~				~~*1*~~	-	~~*7.8*~~	~~*94.9*~~	~~*97.4*~~	~~*92.3*~~

~~For **leaf level 2 early**, the results after two applications in one trial reveal no clear numerical dose response across the three tested dose rates. The efficacy of the 1.4 L/ha dose rate was slightly higher than the reduced dose rates. No dose response was observable between the 1.2 L and 1.0 L/ha of CA3642. No statistically significant difference between the dose rates was assessed.~~

~~The results of one single trial on **leaf level 3 early** reveal no dose response across the three tested dose rates of CA3642. While the performance of the 1.2 L/ha of CA3642 was superior compared to both the 1.4 L/ha and 1.0 L/ha, the efficacy of the 1.4 L/ha dose rate was higher than the 1.0 L/ha dose rate only. No statistically significant difference between the dose rates was assessed.~~

Table 3.2-115: Minimum effective dose of CA3642 after 2 applications against PUCCRE/T in wheat – Late assessment timing - Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	FRA	62	32		PESSEV Efficacy	11.7 a	**0.5 b** ~~95.7~~ **95.5**	**0.3 b** ~~97.4~~ **97.3**	0.4 b 96.6
	~~FRA~~	~~57~~	~~30~~	- -	~~PESSEV Efficacy~~	~~26.2 a~~	~~0.0 b 100.0~~	~~0.1 b 99.6~~	~~0.1 b 99.6~~

~~*Mean efficacy*~~				~~2~~ - -	~~*Mean*~~ ~~Min~~ ~~Max~~	~~*19.0*~~ ~~11.7~~ ~~26.2~~	~~***97.9***~~ ~~**95.7**~~ ~~**100.0**~~	~~***98.5***~~ ~~**97.4**~~ ~~**99.6**~~	~~*98.1*~~ ~~96.6~~ ~~99.6~~
~~LEAF2 late~~	~~FRA~~	~~57~~	~~30~~	- -	~~PESSEV~~ ~~Efficacy~~	~~11.9 a~~	~~**0.0 b**~~ ~~**100.0**~~	~~**0.0 b**~~ ~~**100.0**~~	~~0.0 b~~ ~~100.0~~
Mean efficacy				1		11.9	**100.0**	**100.0**	100.0

For **leaf level 1** late, the mean efficacy after two applications across two trials reveals no dose response for the tested dose rates. The performance of the dose rates was almost comparable. The single trial results demonstrate no statistically significant difference between the target dose rates and the lowered dose rate in any of the trials.

For **leaf level 2 late**, the performance after one application of CA3642 across all three dose rates was equivalent.

Table 3.2-116: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Very late assessment timing</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	FRA	62	44		PESSEV Efficacy	7.7 a	**0.3 b** ~~96.1~~ **96.3**	**0.0 b** ~~100.0~~ **99.8**	0.2 b ~~97.4~~ 97.2
	GBR	56	41		PESSEV Efficacy	25.4 a	**9.9 bc** ~~61.0~~ **61.2**	**9.4 bc** ~~63.0~~ **63.1**	12.3 bc ~~51.6~~ 51.4
	DEU	62	42		PESSEV Efficacy	14.4 a 14.4	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
	FRA	84	53	 TA	PESSEV Efficacy	10.7 a a	**0.7 c** ~~93.5~~ **94.0** d	**0.7 c** **93.5** d	0.9 c ~~91.6~~ 92.0 d
	DEU	81	46		PESSEV Efficacy	19.8 a	**4.9 f** ~~75.3~~ **75.4**	**7.0 ef** ~~64.6~~ **64.7**	9.8 cd ~~50.5~~ 50.7
Mean efficacy				*5*	*Mean* Min Max	*15.6* 7.7 25.4	~~*85.2*~~ ***85.4*** ~~61.0~~ **61.2** **100.0**	***84.2*** ~~63.0~~ **63.1** **100.0**	~~*78.2*~~ *78.3* ~~50.5~~ 50.7 100.0
LEAF2 very late	GBR	56	41		PESSEV Efficacy	25.8 a	**10.8 d** **58.1**	**12.2 cd** ~~52.7~~ **52.9**	12.9 bcd ~~50.0~~ 49.9
	DEU	62	42	 TL	PESSEV Efficacy	5.8 a a	**0.0 b** **100.0** c	**0.0 b** **100.0** c	0.0 b 100.0 c
	DEU	72	37		PESSEV Efficacy	5.9 a	**0.3 cd** ~~94.9~~ **95.6**	**0.8 cd** ~~86.4~~ **85.9**	1.6 bc ~~72.9~~ 72.4
Mean efficacy				*3*	*Mean* Min Max	*12.5* 5.8 25.8	~~*84.4*~~ ***84.6*** **58.1** **100.0**	~~*79.7*~~ ***79.6*** ~~52.7~~ **52.9** **100.0**	~~*74.3*~~ *74.1* ~~50.0~~ 49.9 100.0

For **leaf level 1 very late**, the mean efficacy after two applications across two trials reveals slight dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 7% and 6% respectively). The detailed view on the single assessments reveals a statistically significant difference between the target dose rates and the reduced dose rate in one of the trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, three trials with assessments on **leaf level 2 very late** were available. The mean efficacy reveals a clear dose response across the three tested dose rates with 10% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 5% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate no statistically significant difference between the target dose rates and the lowered dose rate in any of the trials.

Comments of zRMS:

7 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia recondita* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness after 2 applications, in the late assessments. The mean efficacy was 84,2-97,3% on L1 and 79,6-84,6% on L2. Slight lower results have been noted at dose rate of 1 l/ha in very late assessment. The moderate level of control was observed. No results after 1 application were available. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of PUCCRE in winter wheat in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PUCCRE/T – North-East EPPO zone

A total of 5 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Puccinia recondita* (PUCCRE/T).
The trials were carried out in Poland (5) between 2019 and 2020. The first application took place at crop stage BBCH 30 - 32 and the second application was done 30 - 53 days later, at BBCH 52 - 59.

Table 3.2-117: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Early assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 early	POL	45	15		PESSEV Efficacy	7.7 a	**0.1 b** ~~98.7~~ **99.2**	**0.0 b** **100.0**	0.7 b ~~90.9~~ 91.1
Mean efficacy				*1*		*7.7*	*~~98.7~~* ***99.2***	***100.0***	*~~90.9~~ 91.1*
LEAF3 early	POL	45	15		PESSEV Efficacy	15.8 a	**0.1 b** ~~99.4~~ **99.6**	**0.4 b** ~~97.5~~ **97.6**	0.9 b ~~94.3~~ 94.1
Mean efficacy				*1*		*15.8*	*~~99.4~~* ***99.6***	*~~97.5~~* ***97.6***	*~~94.3~~ 94.1*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 2 early**, the efficacy after two applications in one trial reveals clear numerical dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 8 and 9% respectively). No dose response was observable between the 1.4 L and 1.2 L/ha of CA3642. The lower dose rate was slightly superior compared to the higher dose rate. The difference was not statistically significant.

For **leaf level 3 early**, the efficacy after two applications in one trial demonstrate slight dose response across the three tested dose rates (difference of 2 and 3% respectively between the tested dose rates). No statistically significant difference between the dose rates was assessed.

Table 3.2-118: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	POL	84	32		PESSEV Efficacy	8.2 a	**0.5 b 93.9**	**0.7 b 91.5**	1.2 b ~~85.4~~ 85.6
	POL	87	34	TA	PESSEV Efficacy	16.4 a a	**2.1 c ~~87.2~~ 87.0 c**	**1.7 c ~~89.6~~ 89.8 c**	1.3 c ~~92.1~~ 91.9 c
	POL	85	32	TA	PESSEV Efficacy	14.5 a a	**0.2 c ~~98.6~~ 98.8 c**	**0.2 c ~~98.6~~ 98.8 c**	0.8 c ~~94.5~~ 94.1 c
	POL	53	23		PESSEV Efficacy	4.4 a	**0.0 b 100.0**	**0.1 b ~~97.7~~ 98.6**	0.3 b ~~93.2~~ 94.4
Mean efficacy				*4*	*Mean* Min Max	*10.9* 4.4 16.4	***94.9*** **~~87.2~~ 87.0** **100.0**	***~~94.4~~ 94.7*** **~~89.6~~ 89.8** **~~98.6~~ 98.8**	*~~91.3~~ 91.5* ~~85.4~~ 85.6 ~~94.5~~ 94.1
LEAF2 late	POL	53	23		PESSEV Efficacy	8.8 a	**0.1 b ~~98.9~~ 98.6**	**0.3 b ~~96.6~~ 97.1**	0.3 b ~~96.6~~ 97.1
Mean efficacy				*1*		*8.8*	***~~98.9~~ 98.6***	***~~96.6~~ 97.1***	*96.6*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, four trials with assessments on **leaf level 1 late** were available. The mean efficacy after one application reveals slight dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 5.5 and 4% respectively). The performance of the target dose rates was similar (100 vs 98.6%). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For **leaf level 2 late**, the efficacy after two applications in one trial demonstrate slight dose response (2%) between the highest 1.4 L/ha dose rate and the lower dose rates (1.2 L/ha and 1.0 L/ha). for which performance was identical. No statistically significant difference between the dose rates was assessed.

Table 3.2-119: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Very late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	POL	84	35		PESSEV Efficacy	8.6 a	**0.9 b ~~89.5~~ 89.1**	**0.5 b 94.2**	2.2 b ~~74.4~~ 74.6
Mean efficacy				*1*		*8.6*	***~~89.5~~ 89.1***	***94.2***	*~~74.4~~ 74.6*
LEAF2 very late	POL	84	35		PESSEV Efficacy	5.9 a	**0.6 b ~~89.8~~ 90.4**	**0.4 b ~~93.2~~ 93.6**	2.6 b ~~55.9~~ 55.3
Mean efficacy				*1*		*5.9*	***~~89.8~~ 90.4***	***~~93.2~~ 93.6***	*~~55.9~~ 55.3*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1** and **leaf level 2 very late**, the efficacy after two applications in one trial each demonstrate clear dose response (20% and 18% respectively) between the 1.2 L/ha dose rate and the reduced dose rate (1.0 L/ha). The highest dose rate was distinctly superior to the reduced dose rate as well (20% and 37% respectively), but inferior to the 1.2 L/ha dose rate (15 and 34% respectively). No statistically significant difference between the dose rates was assessed.

Comments of zRMS:

5 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia recondita* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness with results of 90-100% after 2 applications, either in early and late assessments. Dose response was observed in the very late assessment. The mean efficacy at 1 l/ha was 55,3% on L2 and it was significantly inferior compared to the higher doses. No results after 1 application were available. Taking into account all results, the dose rate of 1,2 l/ha can be determined MED for control of PUCCRE in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PUCCRE/T – South-East EPPO zone

A total of 5 trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Puccinia recondita* (PUCCRE/T).
The trials were carried out in Bulgaria, Hungary and Romania between 2019 and 2021. The first application took place at crop stage BBCH 31 - 33 and the second application was done 15 - 41 days later, at BBCH 47 – 59.

Table 3.2-120: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Early assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	ROU	56	15	.	PESSEV Efficacy	12.6 a	**4.8 e** ~~61.9~~ **61.7**	**4.9 e** ~~61.1~~ **61.2**	6.2 cd 50.8
Mean efficacy				*1*		*12.6*	~~*61.9*~~ ***61.7***	~~*61.1*~~ ***61.2***	*50.8*
LEAF2 early	ROU	30	15		PESSEV Efficacy	6.0 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	ROU	56	15	. TA	PESSEV Efficacy	17.7 a a	**5.8 d** ~~67.2~~ **67.1** d	**5.8 d** ~~67.2~~ **67.5** d	8.1 bc ~~54.2~~ 54.4 bc
Mean efficacy				*2*	*Mean* Min Max	*11.9* 6.0 17.7	***83.6*** ~~67.2~~ **67.1** **100.0**	~~*83.6*~~ ***83.8*** ~~67.2~~ **67.5** **100.0**	~~*77.1*~~ *77.2* ~~54.2~~ 54.4 100.0
LEAF3 early	ROU	30	15		PESSEV Efficacy	16.4 a	**1.9 e** ~~88.4~~ **88.3**	**2.4 de** ~~85.4~~ **85.6**	3.1 c ~~81.1~~ 81.4
Mean efficacy				*1*		*16.4*	~~*88.4*~~ ***88.3***	~~*85.4*~~ ***85.6***	~~*81.1*~~ *81.4*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 early**, the efficacy after two applications in one trial reveals clear numerical (11% and 10% respectively) and statistically significant dose response between the 1.4 L and 1.2 L/ha of CA3642 compared to the lowered 1.0 L/ha dose rate. No dose response was observable between the

1.4 L and 1.2 L/ha of CA3642.

For **leaf level 2 early**, the mean efficacy after two applications across two trials reveals dose response between the 1.4 L and 1.2 L/ha of CA3642 compared to the lowered 1.0 L/ha dose rate. No dose response was observable between the 1.4 L and 1.2 L L/ha of CA3642.
The detailed view on the single assessments reveals a numerical (13%) and statistically significant difference between the target dose rates and the reduced dose rate in one out of the two trials. For the second trial, the performance for all three dose rates was equivalent.

For **leaf level 3 early**, a slight dose response from highest to lowest dose rate was observable after two applications. The difference between the highest and the lowest dose rate was 7%. While the difference between the target dose rates on the one side and the lowered dose rate on the other side was statistically significant, the difference between the 1.4 L/ha and the 1.2 L/ha was numerically only.

Table 3.2-121: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	ROU	69	28	.	PESSEV Efficacy	16.6 a	**10.2 de** ~~38.6~~ **38.7**	**10.8 cd** ~~34.9~~ **35.3**	11.9 bc ~~28.3~~ 28.6
	BGR	55	33		PESSEV Efficacy	6.4 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
Mean efficacy				*2*	*Mean* Min Max	*11.5* 6.4 16.6	***69.3*** ~~38.6~~ **38.7** **100.0**	~~*67.5*~~ ***67.7*** ~~34.9~~ **35.3** **100.0**	~~*64.2*~~ *64.3* ~~28.3~~ 28.6 100.0
LEAF2 late	HUN	49	32	TA	PESSEV Efficacy	9.9 a a	**0.0 b** **100.0** b	**0.0 b** **100.0** b	0.0 b 100.0 b
Mean efficacy				*1*		*9.9*	***100.0***	***100.0***	*100.0*
LEAF3 late	HUN	49	32	. TA	PESSEV Efficacy	19.6 a a	**0.0 b** **100.0** b	**0.0 b** **100.0** b	0.0 b 100.0 b
Mean efficacy				*1*		*19.6*	***100.0***	***100.0***	*100.0*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 late**, the mean efficacy after two applications across two trials reveals a slight dose response (2 and 3% respectively between the tested dose rates).
The detailed view on the single assessments reveals a statistically significant difference between the 1.4 L/ha and the 1.0 L/h dose rate in one trial. For the other trial, the performance for all three dose rates was equivalent.

For both **leaf level 2 late** and **leaf level 3 late**, the performance for all three tested dose rates of CA3642 was 100% and equivalent.

Table 3.2-122: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCRE/T in wheat – <u>Very late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**

					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	HUN	60	43	.	PESSEV Efficacy	52.6 a	**0.2 b** ~~99.6~~ **99.7**	**0.4 b** ~~99.2~~ **99.3**	0.3 b ~~99.4~~ 99.5
	BGR	54	37		PESSEV Efficacy	9.6 a	**0.3 e** **96.9**	**1.2 d** **87.5**	2.2 c 77.1
	ROU	58	43		PESSEV Efficacy	9.7 a	**1.8 fg** ~~81.4~~ **81.0**	**2.3 ef** ~~76.3~~ **76.0**	3.2 cd ~~67.0~~ 67.5
Mean efficacy				*3*	*Mean* Min Max	*24.0* 9.6 52.6	***92.6*** **81.4** **99.6**	***87.7*** **76.3** **99.2**	*81.2* 67.0 99.4
LEAF2 very late	HUN	60	43	.	PESSEV Efficacy	56.8 a	**0.0 b** **100.0**	**0.2 b** ~~99.6~~ **99.7**	0.1 b ~~99.8~~ 99.9
	BGR	54	37		PESSEV Efficacy	13.0 a	**2.4 d** **81.5**	**2.8 cd** **78.5**	3.3 cd 74.6
	ROU	58	43		PESSEV Efficacy	22.4 a	**3.8 d** **83.0**	**4.2 cd** ~~81.3~~ **81.1**	5.0 c ~~77.7~~ 77.6
Mean efficacy				*3*	*Mean* Min Max	*30.7* 13.0 56.8	***88.2*** **81.5** **100.0**	~~*86.5*~~ ***86.4*** **78.5** ~~99.6~~ **99.7**	*84.0* 74.6 ~~99.8~~ 99.9
LEAF3 very late	BGR	54	37		PESSEV Efficacy	20.8 a	**5.2 c** **75.0**	**5.9 bc** **71.6**	6.5 bc 68.8
Mean efficacy				*1*		*20.8*	***75.0***	***71.6***	*68.8*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 very late**, the mean efficacy across three trials after two applications of CA3642 reveals a dose response (difference of 5 and 9% respectively between the tested dose rates).
The detailed view on the single assessments reveals a statistically significant difference between the two target dose rates and the reduced dose rate in two out of three trials. For one trial, no statistically significant and no numerical difference between the target dose rates was observable.
In one trial, the difference between the 1.4 L and 1.2 L/ha dose rate was statistically significant.

For **leaf level 2 very late**, the mean efficacy across three trials after two applications reveals slight dose response (difference of 2 and 2.5% respectively between the tested dose rates).
The detailed view on the single assessments reveals a statistically significant difference between the dose rates and the reduced dose rate in one out of three trials. For one trial, neither a statistically significant nor a numerical difference between the target dose rates was observable.
In one trial, the difference between the 1.4 L/ha and the lowered 1.0L/ha dose rate of CA3642 was statistically significant, numerical difference was 5%. For all other assessments, no statistically significant difference was observable.

For **leaf level 3 very late**, the efficacy after two applications in one trial demonstrate slight dose response across the three tested dose rates (difference of 3 and 3% respectively between the tested dose rates). No statistically significant difference between the dose rates was assessed.

Table 3.2-123: Minimum effective dose of CA3642 after <u>1 application</u> against PUCCRE/T in wheat – <u>Early assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF3 early	ROU	15			PESSEV Efficacy	4.9 a	**0.2 d** ~~95.9~~ **95.1**	**0.5 cd** ~~89.8~~ **89.0**	0.9 c ~~81.6~~ 80.8
Mean efficacy				*1*		-	***~~95.9~~ 95.1***	***~~89.8~~ 89.0***	*~~81.6~~ 80.8*
LEAF4 early	ROU	15			PESSEV Efficacy	10.9 a	**0.9 b** ~~91.7~~ **91.6**	**1.4 b** ~~87.2~~ **87.6**	1.7 b ~~84.4~~ 84.1
Mean efficacy				*1*		*10.9*	***~~91.7~~ 91.6***	***~~87.2~~ 87.6***	*~~84.4~~ 84.1*

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 3 early**, the efficacy after one application in one trial demonstrates a distinct numerical dose response (difference of 6 and 8% respectively between the tested dose rates). The difference between the highest and lowered dose rate was statistically significant.
For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, one trial with assessments on **leaf level 4 early** was available. The efficacy reveals a slight dose response across the three tested dose rates (difference of 5 and 3% respectively between the tested dose rates). No statistically significant difference was observed.

Comments of zRMS:

5 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia recondita* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness on L1-L3 after 2 applications, either in the early and late assessments. The moderate level of control has been observed in single trials. Dose response was visible on L1 in the early assessment. The mean efficacy at 1 l/ha was 50,8% and it was significantly inferior compared to the higher doses. A high effectiveness (>80%) was noted also after 1 application for all dose rates. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of PUCCRE in winter wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

Winter Wheat (TRZAW) – Yellow rust (PUCCST/I – *Puccinia striiformis*)

14 field trials were established between 2019 and 2020 in order to determine the minimum effective dose of CA3642 for the control of *Puccinia striiformis* (PUCCST/I) in winter wheat.
The trials from the Maritime EPPO zone (11) were carried out in Germany and the United Kingdom. The trial from the North-East EPPO zone (1) was carried out in Poland. The trials from the South-East EPPO zone (2) were carried out in Romania.

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) and compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose’*.

TRZAW – PUCCST/I – Maritime EPPO zone

A total of 11 trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Puccinia striiformis* (PUCCST/I).
The trials were carried out in Germany (1) and Great Britain (10) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 35 and the second application was done 16 - 35 days

later, at BBCH 39 - 59.

Table 3.2-124: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCST/I in wheat – <u>Early assessment timing</u> - Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	GBR	42	15		PESSEV Efficacy	50.63 a	**0.35 c 99.3**	**0.43 c 99.2**	0.53 c 99.0
	GBR	38	15		PESSEV Efficacy	4.66 a 4.7	**0.01 b 99.8**	**0.02 b** ~~99.6~~ **99.5**	0.02 b ~~99.6~~ 99.5
	GBR	49	14	TA	PESSEV Efficacy	4.93 a a	**0.00 c 100.0** d	**0.00 c 100.0** d	0.00 c 100.0 d
	GBR	33	15	TA	PESSEV Efficacy	24.81 a a	**0.00 b 100.0** c	**0.00 b 100.0** c	0.00 b 100.0 c
	GBR	31	15	TA	PESSEV Efficacy	34.50 a 34.5 a	**3.89 cd 88.7** cd	**7.06 bc 79.5** bc	9.76 b 71.7 b
	GBR	51	17	TA	PESSEV Efficacy	8.5 a a	**0.0 b 100.0** b	**0.6 b** ~~92.9~~ **92.5** b	0.6 b ~~92.9~~ 93.1 b
Mean efficacy				*6*	*Mean* Min Max	*21.3* 4.7 50.6	*98.0* 88.7 100.0	*95.2* 79.5 100.0	*93.9* 71.7 100.0
LEAF2 early	GBR	42	15	TA	PESSEV Efficacy	57.63 a a	**0.95 e 98.4** g	**1.16 e 98.0** fg	2.04 e 96.5 e
	GBR	38	15		PESSEV Efficacy	4.16 a	**0.08 b** ~~98.1~~ **98.2**	**0.11 b** ~~97.4~~ **97.3**	0.15 b 96.4
	GBR	49	14	TL	PESSEV Efficacy	87.50 a a	**4.70 f 94.6** h	**5.80 f 93.4** g	9.39 de 89.3 e
	GBR	33	15		PESSEV Efficacy	56.88 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	GBR	31	15		PESSEV Efficacy	67.63 a	**7.00 b** ~~89.6~~ **89.7**	**13.36 b 80.2**	17.61 b 74.0
	GBR	51	17		PESSEV Efficacy	6.5 a	**0.0 b 100.0**	**0.2 b** ~~96.9~~ **96.7**	0.3 b ~~95.4~~ 95.8
Mean efficacy				*6*	*Mean* Min Max	*46.7* 4.2 87.5	***96.8*** ~~89.6~~ **89.7** **100.0**	***94.3*** **80.2** **100.0**	*91.9* 74.0 100.0
LEAF3 early	GBR	49	14		PESSEV Efficacy	96.89 a	**24.75 i 74.5**	**40.00 g 58.7**	52.13 e 46.2
	GBR	33	15		PESSEV Efficacy	82.63 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	GBR	31	15		PESSEV Efficacy	88.60 a	**13.13 cd 85.2**	**18.23 bcd 79.4**	27.71 bc 68.7
	GBR	40	15		PESSEV Efficacy	19.13 a	**0.38 d 98.0**	**1.19 d 93.8**	2.53 d 86.8
	GBR	33	15	TA	PESSEV Efficacy	8.54 a a	**1.89 c 77.9** b	**2.19 bc 74.4** b	2.28 bc 73.3 b
Mean efficacy				*5*	*Mean* Min	*59.1* 8.5	***87.1*** **74.5**	***81.3*** **58.7**	*75.0* 46.2

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
					Max	96.9	**100.0**	**100.0**	100.0
LEAF4 early	GBR	40	15	TA	PESSEV Efficacy	24.06 a a	**2.48 b** **89.7** b	**3.26 b** ~~86.5~~ **86.4** b	5.14 b ~~78.6~~ 78.7 b
Mean efficacy				*1*		*24.1*	***89.7***	*~~86.5~~* ***86.4***	*~~78.6~~ 78.7*

The mean efficacy of 6 trials on **leaf level 1 early** reveals slight dose response between the target dose rates of CA3642 and the lowered 1.0 L/ha dose rate after two applications. The difference in mean efficacy between the 1.4 L/ha and the 1.2 L/ha dose rate was 3%; the difference between the 1.2 L/ha and the 1.0L/ha dose rate was 1.3%.
In one trial, the performance of the reduced 1.0 L/ha dose rate was numerically (17%) and statistically significantly inferior to the performance of the 1.4 L/ha dose rate. For one trial, the performance across all three dose rates was equivalent.
For the other trials, no statistically significant difference across the three dose rates was assessed.

For **leaf level 2 early**, the mean efficacy after two applications across 6 trials demonstrates slight dose response and a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2 and 1.4 L/ha of CA3642 (difference 2% and 5% respectively). In two trials, the performance of the reduced 1.0 L/ha dose rate was statistically significantly inferior to the performance of the 1.4 L/ha and 1.2 L/ha dose rate. For one trial, the performance across all three dose rates was equivalent.
For the other trials, no statistically significant difference across the three dose rates was assessed.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, five trials with assessments on **leaf level 3 early** were available. The mean efficacy reveals a clear dose response across the three tested dose rates with 12% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 6% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate statistically significant difference between the target dose rates and the lowest dose rate in one of the trials with a clear numerical difference of 28% and 12% respectively. For one trial, the performance across all three dose rates was equivalent.

For **leaf level 4 early**, the efficacy after two applications in one trial demonstrates slight dose response and a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642 (difference 11% and 8%). No statistically significant difference across the three dose rates was assessed.

Table 3.2-125: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCST/I in wheat – <u>Late assessment timing</u> - Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	GBR	48	32	TA	PESSEV Efficacy	47.4 a a	**4.6 c** ~~90.3~~ **90.2** c	**7.4 bc** ~~84.4~~ **84.5** bc	12.9 b 72.8 b
	GBR	50	27		PESSEV	21.41 a	**0.02 b**	**0.04 b**	0.04 b

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Efficacy		**99.9**	**99.8**	99.8
	GBR	61	34		PESSEV Efficacy	53.0 a	**0.3 e** **99.4**	**0.4 e** **99.2**	0.5 e 99.1
	GBR	61	27	TL	PESSEV Efficacy	42.0 a a	**8.6 b** **79.5** e	**11.0 b** **73.8** cde	14.5 b 65.5 bcd
Mean efficacy				*4*	*Mean* Min Max	*41.0* 21.4 53.0	***92.3*** **79.5** **99.9**	***89.3*** **73.8** **99.8**	*84.3* 65.5 99.8
LEAF2 late	GBR	48	32		PESSEV Efficacy	73.2 a	**20.8 c** **71.6**	**24.3 c** **66.8**	36.6 b 50.0
	GBR	50	27		PESSEV Efficacy	17.06 a	**0.09 b** **99.5**	**0.15 b** **99.1**	0.19 b 98.9
	GBR	61	34	TL	PESSEV Efficacy	50.0 a a	**0.4 d** **99.2** e	**0.5 d** **99.0** e	0.5 d 99.0 e
	GBR	61	27		PESSEV Efficacy	82.1 a	**10.9 e** **86.7**	**15.3 de** **81.4**	18.1 cd 78.0
Mean efficacy				*4*	*Mean* Min Max	*55.6* 17.1 82.1	***89.2*** **71.6** **99.5**	***86.6*** **66.8** **99.1**	*81.5* 50.0 99.0

The mean efficacy of 4 trials on **leaf level 1 late** was assessed for the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642.
The mean results reveal clear dose response between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate of CA3642 (difference 8%). The performance of the 1.2 L/ha dose rate was superior to the 1.0 L/ha dose rate (difference 5%). The detailed view on the single assessments reveals a statistically significantly superior performance of the 1.4 L/ha dose rate compared to the 1.0 L/ha dose rate in two trials. For the tow other trials, no statistically significant difference across the three dose rates was assessed.

For **leaf level 2 late**, the mean efficacy after two applications across four trials reveals dose response between the three tested dose rates of CA3642. The difference between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate of CA3642 was 8%. The performance of the 1.2 L/ha dose rate was superior to the 1.0 L/ha dose rate (difference 5%).
The detailed view on the single assessments reveals a statistically significantly superior performance of the 1.2 L/ha and 1.4 L/ha dose rate compared to 1.0 L/ha in one trial. In another trial, the 1.4 L/ha dose rate was statistically significantly superior compared to 1.0 L/ha. .
For the two other trials, no statistically significant difference across the three dose rates was assessed.

Table 3.2-126: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCST/I in wheat – <u>Very late assessment timing</u> - Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	GBR	77	42		PESSEV Efficacy	88.9 a	**4.5 d** ~~94.9~~ **95.0**	**5.0 d** **94.4**	4.9 d 94.5

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
	GBR	54	36		PESSEV Efficacy	32.0 a	**0.0 b** **100.0**	**0.0 b** **100.0**	0.1 b ~~99.7~~ 99.8
	GBR	68	43	TA	PESSEV Efficacy	38.8 a a	**0.9 d** **97.7** f	**2.0 d** ~~94.8~~ **94.9** ef	8.3 cd ~~78.6~~ 78.7 cd
	DEU	64	46		PESSEV Efficacy	9.1 a	**0.5 c** ~~94.5~~ **94.4**	**0.2 c** ~~97.8~~ **97.7**	0.8 c ~~91.2~~ 91.4
	GBR	74	40	TA	PESSEV Efficacy	5.6 a a	**0.0 c** **100.0** c	**1.4 bc** ~~75.0~~ **75.3** abc	2.6 bc 53.6 abc
	GBR	59	41		PESSEV Efficacy	10.2 a	**0.6 e** ~~94.1~~ **94.3**	**3.9 c** ~~61.8~~ **62.2**	4.1 c ~~59.8~~ 60.4
Mean efficacy				*6*	*Mean* Min Max	*30.8* 5.6 88.9	***96.9*** ~~94.1~~ **94.3** **100.0**	~~*87.3*~~ ***87.4*** ~~61.8~~ **62.2** **100.0**	~~*79.6*~~ *79.7* 53.6 ~~99.7~~ 99.8
LEAF2 very late	GBR	77	42		PESSEV Efficacy	100.0 a	**5.4 f** **94.6**	**6.1 f** **93.9**	6.4 f 93.6
	GBR	54	36		PESSEV Efficacy	80.3 a	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
	GBR	68	43		PESSEV Efficacy	67.8 a	**5.6 d** **91.7**	**5.5 d** **91.9**	11.5 cd 83.0
	DEU	64	46		PESSEV Efficacy	8.4 a	**0.2 d** ~~97.6~~ **97.5**	**0.4 d** **95.2**	0.8 d 90.5
	GBR	74	40		PESSEV Efficacy	5.2 a	**0.0 c** **100.0**	**0.0 c** **100.0**	1.8 c ~~65.4~~ 66.6
	GBR	65	43		PESSEV Efficacy	5.56 a	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
	GBR	59	41		PESSEV Efficacy	22.7 a	**9.5 e** ~~58.1~~ **58.4**	**18.6 b** ~~18.1~~ **18.0**	10.4 d ~~54.2~~ 54.1
Mean efficacy				*7*	*Mean* Min Max	*41.4* 5.2 100.0	***91.7*** ~~58.1~~ **58.4** **100.0**	***85.6*** ~~18.1~~ **18.0** **100.0**	*83.8* ~~54.2~~ 54.1 100.0
LEAF3 very late	GBR	77	42		PESSEV Efficacy	100.0 a	**19.1 h** **80.9**	**49.8 g** **50.2**	69.6 f 30.4
	GBR	54	36	TA	PESSEV Efficacy	96.8 a a	**0.0 c** **100.0** c	**0.0 c** **100.0** c	0.0 c 100.0 c
	GBR	68	43		PESSEV Efficacy	83.5 a	**7.1 f** **91.5**	**13.1 ef** **84.3**	24.5 cd 70.7
	GBR	65	43		PESSEV Efficacy	5.86 a	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
Mean efficacy				*4*	*Mean* Min Max	*71.6* 5.9 100.0	***93.1*** **80.9** **100.0**	***83.6*** **50.2** **100.0**	*75.3* 30.4 100.0
LEAF4 very late	GBR	68	43		PESSEV Efficacy	100.0 a	**18.2 g** **81.8**	**22.9 g** **77.1**	33.9 f 66.1
Mean efficacy				*1*		*100.0*	***81.8***	***77.1***	*66.1*

The mean efficacy of 7 trials on **leaf level 1 very late** reveals a dose response between the target dose rates of CA3642 and the lowered 1.0 L/ha dose rate. In one trial, the performance of the reduced 1.0 L/ha dose rate was statistically significantly inferior to the performance of the 1.4 or 1.2 L/ha dose rates. In two other trials, although not statistically significant the 1.4 L/ha provided 34% and 46%

more efficacy compared to the 1.0 L/ha rate. For one trial, the performance across all three dose rates was equivalent.

For **leaf level 2 very late**, the mean efficacy after two applications across 7 trials reveals dose response between the three tested dose rates of CA3642. The difference between the 1.4 L/ha dose rate and the 1.0 L/ha dose rate of CA3642 was 8%. The performance of the 1.2 L/ha dose rate was superior to the 1.0 L/ha dose rate (difference 2%).
The detailed view on the single assessments reveals a statistically significantly superior performance of the 1.4 L/ha dose rate compared to the other dose rates in one trial, while the 1.2 L/ha dose rate was inferior to the 1.0 L/ha dose rate.
For three trials, the performance across all three dose rates was equivalent.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, four trials with assessments on **leaf level 3 very late** were available. The mean efficacy reveals a clear dose response across the three tested dose rates with 18% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 8% between the 1.2 L/ha and the 1.0 L/ha dose rate. The single trial results demonstrate a statistically significant dose response across the three tested dose rates with 50% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 20% between the 1.2 L/ha and the 1.0 L/ha dose rate.
In another trial, statistically significant difference between the target dose rates and the lowest dose rate with a clear numerical difference of 21% and 14% respectively was assessed.
For two trials, the performance across all three dose rates was equivalent.

For **leaf level 4 very late**, the efficacy after two applications in one trial reveals clear dose response between the 1.2 and 1.4 L/ha dose rate and the lowered 1.0 L/ha dose rate. The difference of 16 and 11% between the target dose rates and the reduced dose rate respectively was statistically significant.

Table 3.2-127: Minimum effective dose of CA3642 after <u>1 application</u> against PUCCST/I in wheat – <u>Early assessment timing</u> - Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF2 early	GBR	16		TL	PESSEV Efficacy	32.7 a A	**4.3 b 86.9** d	**6.3 b ~~80.7~~ 80.8** cd	8.9 b ~~72.8~~ 72.9 bc
Mean efficacy				*1*		*32.7*	***86.9***	***~~80.7~~ 80.8***	*~~72.8~~ 72.9*
LEAF3 early	GBR	15			PESSEV Efficacy	8.36 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	GBR	14			PESSEV Efficacy	6.4 a	**0.0 b 100.0**	**0.0 b 100.0**	0.0 b 100.0
	GBR	16		TL	PESSEV Efficacy	55.3 a a	**8.7 c 84.3** d	**13.8 c 75.0** cd	19.7 c 64.4 bc
Mean efficacy				*3*	*Mean* Min Max	*23.4* 6.4 55.3	***94.8*** **84.3 100.0**	***91.7*** **75.0 100.0**	*88.1* 64.4 100.0
LEAF4 early	GBR	15			PESSEV Efficacy	11.78 a	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
	GBR	14			PESSEV Efficacy	48.5 a	**1.5 e ~~96.9~~ 97.0**	**1.6 e 96.7**	2.1 de ~~95.7~~ 95.8
	GBR	15			PESSEV Efficacy	32.50 a	**0.46 d 98.6**	**1.36 cd 95.8**	2.05 cd 93.7
	GBR	16			PESSEV Efficacy	85.2 a	**29.1 a ~~65.8~~ 65.9**	**39.1 a 54.1**	43.5 a 48.9

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
				TS		a	b	b	b
	GBR	14		TA	PESSEV Efficacy	16.3 a a	**0.0 c** **100.0** c	**0.9 bc** **94.5** c	1.1 bc ~~93.3~~ 93.5 c
Mean efficacy				*5*	*Mean* Min Max	*38.9* 11.8 85.2	***92.3*** ~~65.8~~ **65.9** **100.0**	***88.2*** **54.1** **100.0**	*86.3* 48.9 100.0

For **leaf level 2 early**, the efficacy after one application in one trial reveals clear dose response between the 1.2 and 1.4 L/ha dose rate and the lowered 1.0 L/ha dose rate (difference of 6 and 8% between the tested dose rates). The 1.4 L/ha dose rate gave significantly higher efficacy compared to the 1.0 L/ha rate.

The mean efficacy of 3 trials on **leaf level 3 early** reveals slight dose response between the target dose rates of CA3642 and the lowered 1.0 L/ha dose rate. In one trial, the performance of the reduced 1.0 L/ha dose rate was numerically (20%) inferior to the performance of the 1.4 L/ha dose rate. In another trial, the reduced 1.0 L/ha dose rate was numerically (11%) inferior to the performance of the 1.4 L/ha dose rate. The 1.4 L/ha dose rate gave significantly higher efficacy compared to the 1.0 L/ha rate in this trial.
For two trials, the performance across all three dose rates was equivalent.

The mean efficacy of 5 trials on **leaf level 4 early** reveals slight dose response between the target dose rates of CA3642 and the lowered 1.0 L/ha dose rate with 6% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 2% between the 1.2 L/ha and the 1.0 L/ha dose rate.
The more detailed view on the single trial results demonstrates that the performance across all three dose rates was equivalent for two trials. For the other trials, slight numerical dose response with no statistically significant difference across the three dose rates was observable.
For two trials, the performance across all three dose rates was equivalent.

Table 3.2-128: Minimum effective dose of CA3642 after <u>1 application</u> against PUCCST/I in wheat – <u>Late assessment timing</u> - Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF1 late	GBR	27		TA	PESSEV Efficacy	11.5 a a	**0.3 d** ~~97.4~~ **97.2** e	**0.3 d** ~~97.4~~ **97.7** e	0.4 d ~~96.5~~ 96.9 e
Mean efficacy				*1*		*11.5*	~~*97.4*~~ ***97.2***	~~*97.4*~~ ***97.7***	~~*96.5*~~ *96.9*
LEAF2 late	GBR	27		TA	PESSEV Efficacy	20.0 a a	**2.4 d** ~~88.0~~ **88.2** d	**0.4 e** ~~98.0~~ **98.3** e	2.6 d ~~87.0~~ 87.1 d
	GBR	34		TA	PESSEV Efficacy	20.8 a a	**2.1 g** ~~89.9~~ **90.1** g	**2.7 f** ~~87.0~~ **87.2** f	4.8 cd ~~76.9~~ 77.1 c
Mean efficacy				*2*	*Mean*	*20.4*	~~*89.0*~~ ***89.2***	~~*92.5*~~ ***92.8***	~~*82.0*~~ *82.1*

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Min Max	20.0 20.8	~~88.0~~ **88.2** ~~89.9~~ **90.1**	~~87.0~~ **87.2** ~~98.0~~ **98.3**	~~76.9~~ 77.1 ~~87.0~~ 87.1
LEAF3 late	GBR	27			PESSEV Efficacy	56.4 a	**2.1 e** **96.3**	**0.5 e** **99.1**	2.4 e 95.7
	GBR	34			PESSEV Efficacy	86.8 a	**15.6 f** **82.0**	**18.0 f** **79.3**	41.4 d 52.3
	GBR	25		TA	PESSEV Efficacy	12.2 a a	**0.5 c** ~~95.9~~ **95.8** c	**1.4 c** ~~88.5~~ **88.8** bc	1.8 c 85.2 bc
Mean efficacy				*3*	*Mean* Min Max	*51.8* 12.2 86.8	***91.4*** **82.0** **96.3**	***89.0*** **79.3** **99.1**	*77.8* 52.3 95.7
LEAF4 late	GBR	34			PESSEV Efficacy	100.0 a	**13.8 h** **86.2**	**23.6 g** **76.4**	50.2 d 49.8
	GBR	25			PESSEV Efficacy	22.5 a	**2.5 c** ~~88.9~~ **88.7**	**4.4 c** ~~80.4~~ **80.5**	5.8 c ~~74.2~~ 74.5
Mean efficacy				*2*	*Mean* Min Max	*61.3* 22.5 100.0	***87.5*** **86.2** **88.9**	***78.4*** **76.4** **80.4**	*62.0* 49.8 74.2

For **leaf level 1 late**, the efficacy after one application in one trial reveals no dose response: the performance of the 1.4 L and 1.2 L/ha dose rate of CA3642 was equivalent. The efficacy of the target dose rates was comparable to the lowered 1.0 L/ha dose rate (difference 1% respectively). No statistically significant difference between the target dose rates and the reduced dose rate was observable.

The mean efficacy of two trials on **leaf level 2 late** reveals no dose response between the target dose rates of CA3642 and the lowered 1.0 L/ha dose rate after one application. The performance of the 1.2 L/ha dose rate was superior to the other dose rates, the 1.4 L/ha dose rate was superior to the 1.0 L/ha dose rate.
In one trial, dose response was assessed: both the efficacy of the 1.4 L/ha dose rate was higher than the reduced 1.0 L/ha dose rate (difference 13%) and the efficacy of the 1.2 L/ha dose rate was higher than the reduced 1.0 L/ha dose rate (difference 10%). The differences were statistically significant.
In the other trial, the 1.2 L/ha dose rate was statistically significantly superior compared to the two other dose rates.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, three trials with assessments on **leaf level 3 late** were available. The mean efficacy reveals a clear dose response between the 1.4 L/ha and 1.2 L/ha on the one hand and the 1.0 L/ha dose rate (14 and 11% respectively).
In one trial, the difference between the 1.4 L/ha and 1.2 L/ha on the one hand and the 1.0 L/ha dose rate was statistically significant. No statistically significant difference between the target dose rates and the lowered dose rate was found in the other trials.

For **leaf level 4 late**, the mean efficacy after two applications across two trials reveals dose response for the tested dose rates. The difference in efficacy between 1.4 L and 1.2 L/ha of CA3642 and the 1.0 L/ha dose rate dose rate was 19% and 16% respectively.
The single trial results demonstrate clear numerical (36% and 26% respectively) and statistically significant difference between each of the target dose rates and the lowered dose rate in one trial.

Comments of zRMS:

11 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia striiformis* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good effectiveness with results of >80% after 2 applications, either in the early and late assessments. Dose response was visible on L4 in the very late assessment. The difference between 1 l/ha and 1,4 l/ha was significantly (66,1% vs 81,8%). Similar effect was observed after 1 application. The mean efficacy at 1 l/ha was 62% vs 87,5% at 1,4 l/ha. CA3642 at 1,2-1,4 l/ha presented a high level of control after 1 application in the early and late assessments. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of PUCCST in winter wheat in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PUCCST/I – North-East EPPO zone

The results from 1 trial from the North-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Puccinia striiformis* (PUCCST/I).
The trial was carried out in Poland (1) in 2020. The first application took place at crop stage BBCH 30 and the second application was done 57 days later, at BBCH 30.

Table 3.2-129: Minimum effective dose of CA3642 after 2 applications against PUCCST/I in wheat – Very late assessment timing – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 very late	POL	84	35	TA	PESSEV Efficacy	7.1 a a	**0.4 b** ~~94.4~~ **94.7** **b**	**1.1 b** ~~84.5~~ **85.0** **b**	1.6 b ~~77.5~~ 77.7 b
Mean efficacy				*1*		*7.1*	~~*94.4*~~ ***94.7***	~~*84.5*~~ ***85.0***	~~*77.5*~~ *77.7*

After two applications of CA3642 applied at 1.2-1.4 L/ha
For **leaf level 1 very late**, the efficacy after two applications in one trial reveals clear numerical dose response across all dose rates. The mean performance of the 1.4 L and 1.2 L/ha of CA3642 was superior to the lowered 1.0 L/ha dose rate (difference 17 and 7% respectively). No statistically significant difference between the target dose rates and the reduced dose rate was observable.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Puccinia striiformis* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness (85-94,7%) after 2 applications in the very late assessment. The moderate level of control has been noted at lower dose rate of 1 l/ha. No results after 1 application was available. 1 trial conducted in Germany was included in the overall calculation as support for the Polish registration. Due to limited number of trials, this use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

TRZAW – PUCCST/I – South-East EPPO zone

A total of 2 trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Puccinia striiformis* (PUCCST/I).
The trials were carried out in Romania in 2019. The first application took place at crop stage BBCH

33-34 and the second application was done 21 - 28 days later, at BBCH 59 – 61.

Table 3.2-130: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCST in wheat – <u>Late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	ROU	55	27	TA	PESSEV Efficacy	20.88 a a	**0.04 b 99.8** d	**0.04 b 99.8** d	0.09 b 99.6 c
Mean efficacy				*1*		*20.9*	***99.8***	***99.8***	*99.6*
LEAF2 late	ROU	55	27	TL	PESSEV Efficacy	29.56 a a	**0.09 b 99.7** d	**0.15 b 99.5** d	0.42 b 98.6 c
Mean efficacy				*1*		*29.6*	***99.7***	***99.5***	*98.6*
LEAF3 late	ROU	55	27		PESSEV Efficacy	57.94 a	**0.02 b 100.0**	**0.18 b 99.7**	0.78 b 98.7
Mean efficacy				*1*		*57.9*	***100.0***	***99.7***	*98.7*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 late**, the efficacy after two applications in one trial demonstrates no numerical dose response across the three tested dose rates. The difference between the applied dose rates was not statistically significant.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, one trial with assessments on **leaf level 2 late** was available. A slight numerical dose response across the three tested dose rates was observed and efficacy between the proposed rates and the reduced rate was statistically significant.

For **leaf level 3 late**, the efficacy after two applications in one trial demonstrates no distinct numerical dose response across the three tested dose rates. The difference between the applied dose rates was not statistically significant.

Table 3.2-131: Minimum effective dose of CA3642 after <u>2 applications</u> against PUCCST in wheat – <u>Very late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 very late	ROU	57	36		PESSEV Efficacy	5.16 a	**0.03 b 99.4**	**0.03 b 99.4**	0.09 b 98.3
Mean efficacy				*1*		*5.2*	***99.4***	***99.4***	*98.3*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, one trial with assessments on **leaf level 2 very late** was available. No distinct numerical dose response was observed and the difference between the applied dose rates was not statistically significant.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia striiformis* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1-1,4 l/ha rates achieved high effectiveness (>90%) after 2 applications in the late assessments. No significant differences between doses has been noted. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Winter Wheat (TRZAW) – Tan spot (PYRNTR – *Pyrenophora tritici-repentis*)

14 field trials were established between 2019 and 2021 in order to determine the minimum effective dose of CA3642 for the control of *Pyrenophora tritici-repentis* (PYRNTR) in winter wheat.
The trial from the Maritime EPPO zone (1) was carried out in the Czech Republic. The trials from the North-East EPPO zone (10) were carried out in Latvia and Lithuania. The trials from the South-East EPPO zone (3) were carried out in Bulgaria and Slovakia.

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) and compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

TRZAW – PYRNTR – Maritime EPPO zone

The results from 1 trial from the Maritime EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Pyrenophora tritici-repentis* (PYRNTR).
The trial was carried out in Czech Republic in 2019. The first application took place at crop stage BBCH 32 and the second application was done 24 days later, at BBCH 41.

Table 3.2-132: Minimum effective dose of CA3642 after <u>2 applications</u> against PYRNTR in wheat – <u>Early and Very late assessment timings</u> - Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF3 early	CZE	41	17		PESSEV Efficacy	7.1 a	**0.7 c** ~~90.1~~ **89.9**	**0.9 c** ~~87.3~~ **87.1**	0.8 c ~~88.7~~ 88.1
Mean efficacy				*1*		*7.1*	~~*90.1*~~ ***89.9***	~~*87.3*~~ ***87.1***	~~*88.7*~~ *88.1*
LEAF4 early	CZE	41	17		PESSEV Efficacy	16.7 a	**1.8 c** ~~89.2~~ **89.5**	**2.6 c** ~~84.4~~ **84.3**	2.6 c ~~84.4~~ 84.7
Mean efficacy				*1*		*16.7*	~~*89.2*~~ ***89.5***	~~*84.4*~~ ***84.3***	~~*84.4*~~ *84.7*
LEAF1 very late	CZE	59	35		PESSEV Efficacy	58.4 a	**21.4 c 63.4**	**22.5 c 61.5**	23.4 c 59.9
Mean efficacy				*1*		*58.4*	***63.4***	***61.5***	*59.9*

For **leaf level 3 early**, the efficacy after two applications in one trial reveals no dose response: while the 1.4 L dose rate of CA3642 compared to the lowered 1.0 L/ha was superior, the 1.2 L/ha dose rate was inferior.

No statistically significant difference was assessed.

For **leaf level 4 early**, the efficacy after two applications in one trial reveals no dose response: 1.4 L dose rate of CA3642 was superior to the 1.2 L/ha and 1.0 L/ha dose rate, for which efficacy was equivalent. No statistically significant difference was assessed.

For **leaf level 1 very late**, a slight numerical dose response was observable in one trial: the difference between the tested dose rates was 2 and 2% respectively. No statistically significant difference was assessed.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Pyrenophora tritici-repentis* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results (80-90%) on L3 and L4 after 2 application in the early assessment. The mean efficacy at 1 l/ha was on similar level. Significantly inferior effectiveness has been noted in the very late assessment. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

TRZAW – PYRNTR – North-East EPPO zone

A total of 10 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Pyrenophora tritici-repentis* (PYRNTR).
The trials were carried out in Lithuania (3) and Latvia (7) between 2019 and 2021. The first application took place at crop stage BBCH 32 - 37 and the second application was done 16 - 33 days later, at BBCH 39 - 59.

Table 3.2-133: Minimum effective dose of CA3642 after <u>2 applications</u> against PYRNTR in wheat – <u>Early assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	LVA	44	14	 TA	PESSEV Efficacy	9.9 a a	**1.0 c** ~~89.9~~ **90.4** **cd**	**1.4 c** ~~85.9~~ **85.8** **bcd**	1.7 c ~~82.8~~ 83.0 bcd
	LVA	41	13	 TA	PESSEV Efficacy	6.5 a a	**1.3 c** ~~80.0~~ **80.3** **b**	**1.5 c** **76.9** **b**	1.5 c ~~76.9~~ 77.6 b
	LVA	49	21	 TA	PESSEV Efficacy	13.8 a a	**2.3 d** **83.3** **d**	**2.2 d** **84.1** **d**	3.4 d 75.4 d
Mean efficacy				*3*	*Mean* Min Max	*10.1* 6.5 13.8	***84.4*** **80.0** **89.9**	***82.3*** **76.9** **85.9**	*78.4* 75.4 82.8
LEAF2 early	LTU	31	15		PESSEV Efficacy	5.0 a	**2.0 c** ~~60.0~~ **60.3**	**1.9 c** ~~62.0~~ **63.1**	3.1 bc ~~38.0~~ 38.7
	LVA	44	14		PESSEV Efficacy	26.8 a	**3.6 d** **86.6**	**3.9 d** **85.4**	5.4 d 79.9
	LVA	41	13		PESSEV Efficacy	29.0 a	**4.9 c** **83.1**	**4.8 c** ~~83.4~~ **83.6**	5.7 c ~~80.3~~ 80.5

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
	LVA	42	14		PESSEV Efficacy	7.8 a	**1.9 cd** ~~75.6~~ **75.8**	**1.7 cd** ~~78.2~~ **77.6**	2.7 bcd ~~65.4~~ 65.2
Mean efficacy				*4*	*Mean* Min Max	*17.2* 5.0 29.0	~~76.3~~ ***76.5*** ~~60.0~~ **60.3** **86.6**	~~77.3~~ ***77.4*** ~~62.0~~ **63.1** **85.4**	~~65.9~~ *66.2* ~~38.0~~ 38.7 ~~80.3~~ 80.5
LEAF4 early	LVA	41	14		PESSEV Efficacy	11.0 a	**9.7 a** ~~11.8~~ **11.9**	**7.5 a** ~~31.8~~ **32.3**	9.0 a 18.2
Mean efficacy				*1*		*11.0*	~~11.8~~ ***11.9***	~~31.8~~ ***32.3***	*18.2*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 early**, the mean efficacy across three trials after two applications reveals slight dose response (difference of 2 and 4% respectively between the tested dose rates).
The detailed view on the single assessments reveals no statistically significant difference between the dose rates and the reduced dose rates in any of the trials. For one trial, the 1.2 L/ha dose rate was numerically slightly superior to the higher dose rate (1.4 L/ha).

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, four trials with assessments on **leaf level 2 early** were available. The mean efficacy reveals no dose response across all dose rates of CA3642. The mean efficacy of the target dose rates was superior compared to the lowered dose rates (difference 10 and 11% respectively) while the 1.2 L/ha dose rate was numerically slightly superior to the higher dose rate (1.4 L/ha).
The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For **leaf level 4 early**, the efficacy after two applications in one trial reveals no dose response and no statistically significant difference between the tested dose rates. It is noteworthy that the level of efficacy in general was low in this trial (12 – 32%).

Table 3.2-134: Minimum effective dose of CA3642 after <u>2 applications</u> against PYRNTR in wheat – <u>Late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	LTU	56	31		PESSEV Efficacy	16.0 abc	**11.9 c** ~~25.6~~ **25.8**	**13.3 bc** ~~16.9~~ **17.2**	13.1 bc ~~18.1~~ 18.0
	LTU	50	28		PESSEV Efficacy	8.4 a	**4.1 b** ~~51.2~~ **51.3**	**3.2 b** ~~61.9~~ **61.8**	4.0 b ~~52.4~~ 52.2
	LTU	41	25	TL	PESSEV Efficacy	31.8 a a	**13.8 bc** **56.6** c	**13.9 bc** **56.3** c	12.4 c 61.0 cd
	LVA	52	27		PESSEV Efficacy	6.8 a	**1.5 b** ~~77.9~~ **78.0**	**1.3 b** ~~80.9~~ **81.2**	1.9 b ~~72.1~~ 72.7
Mean efficacy				*4*	*Mean*	*15.8*	~~52.8~~ ***52.9***	~~54.0~~ ***54.1***	~~50.9~~ *51.0*

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Min	6.8	~~25.6~~ **25.8**	~~16.9~~ **17.2**	~~18.1~~ 18.0
					Max	31.8	~~77.9~~ **78.0**	~~80.9~~ **81.2**	~~72.1~~ 72.7
LEAF2 late	LVA	51	21		PESSEV	80.6 a	**38.3 b**	**35.8 b**	43.8 b
					Efficacy		**52.5**	**55.6**	45.7
	LVA	52	27		PESSEV	14.1 a	**4.8 c**	**3.9 c**	4.9 c
					Efficacy		~~66.0~~ **65.8**	~~72.3~~ **72.7**	~~65.2~~ 65.5
	LVA	62	35		PESSEV	28.9 a	**20.7 bc**	**22.0 bc**	22.6 bc
					Efficacy		**28.4**	**23.9**	21.8
	LVA	70	37		PESSEV	34.4 a	**15.1 c**	**16.9 c**	16.4 c
					Efficacy		~~56.1~~ **56.2**	~~50.9~~ **50.7**	~~52.3~~ 52.4
Mean efficacy				*4*	*Mean*	*39.5*	***50.7***	***50.7***	*46.3*
					Min	14.1	**28.4**	**23.9**	21.8
					Max	80.6	~~66.0~~ **65.8**	~~72.3~~ **72.7**	~~65.2~~ 65.5

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 late**, the mean efficacy across four trials after two applications reveals no dose response across the tested dose rates. The performance of the target dose rates was slightly superior to the lowered dose rates each (2 and 3% respectively) while the 1.2 L/ha dose rate was numerically slightly superior to the higher dose rate (1.4 L/ha).
The detailed view on the single assessments reveals no statistically significant difference between the dose rates and the reduced dose rates in any of the trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after two applications, four trials with assessments on **leaf level 2 late** were available. The mean efficacy reveals demonstrates dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 4%). Mean efficacy of the target dose rates was equivalent.
The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

Table 3.2-135: Minimum effective dose of CA3642 after <u>2 applications</u> against PYRNTR in wheat – <u>Very late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	LVA	60	35		PESSEV	9.5 a	**1.9 c**	**2.8 c**	2.7 c
					Efficacy		**80.0**	~~70.5~~ **71.1**	71.6
	LVA	62	35		PESSEV	4.1 a	**2.9 b**	**3.1 b**	3.4 b
					Efficacy		~~29.3~~ **30.5**	~~24.4~~ **25.6**	~~17.1~~ 17.7
	LVA	70	37		PESSEV	16.1 a	**2.2 c**	**2.8 c**	2.9 c
					Efficacy		**86.3**	~~82.6~~ **82.9**	~~82.0~~ 82.3
				TA		a	c	c	c
Mean efficacy				*3*	*Mean*	*9.9*	***65.2***	~~59.2~~ ***59.9***	~~56.9~~ *57.2*

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1 L/ha 150 g AZX/ha + 150 g PTZ/ha
					Min Max	4.1 16.1	~~29.3~~ **30.5** **86.3**	~~24.4~~ **25.6** ~~82.6~~ **82.9**	~~17.1~~ 17.7 ~~82.0~~ 82.3

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 1 very late**, the mean efficacy across three trials after two applications reveals dose response across the tested dose rates (difference 6 and 2% respectively).

The detailed view on the single assessments reveals no statistically significant difference between the dose rates and the reduced dose rates in any of the trials. In one trial, the efficacy of the 1.0 L/ha dose rate was numerically slightly higher compared to the 1.2 L/ha dose rate.

Table 3.2-136: Minimum effective dose of CA3642 after <u>1 application</u> against PYRNTR in wheat – <u>Early assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF4 early	LVA	17		TL	PESSEV Efficacy	5.4 a a	**4.5 a** **16.7** b	**3.9 a** ~~27.8~~ **28.4** b	3.9 a ~~27.8~~ 28.4 b
	LVA	15			PESSEV Efficacy	4.2 a	**1.1 b** ~~73.8~~ **73.7**	**1.3 b** ~~69.0~~ **69.5**	1.3 b ~~69.0~~ 70.1
Mean efficacy				*2*	*Mean* Min Max	*4.8* 4.2 *5.4*	***45.2*** **16.7** ~~*73.8*~~ ***73.7***	~~*48.4*~~ ***49.0*** ~~27.8~~ **28.4** ~~*69.0*~~ ***69.5***	~~*48.4*~~ *49.3* ~~27.8~~ 28.4 ~~*69.0*~~ *70.1*

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 4 early**, the mean efficacy after one application across two trials reveals no dose response across the tested dose rates. The mean efficacy of the 1.4 L/ha dose rate of CA3642 was slightly lower than the performance of the two lower dose rates which were equivalent.

The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials. In one trial, the 1.4 L/ha dose rate was superior compared to the lower dose rates.

Table 3.2-137: Minimum effective dose of CA3642 after <u>1 application</u> against PYRNTR in wheat – <u>Late assessment timing</u> – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF2 late	LVA	27			PESSEV Efficacy	5.4 a	**1.2 c** ~~77.8~~ **78.2**	**1.9 c** ~~64.8~~ **65.7**	1.7 c ~~68.5~~ 69.0
	LVA	27			PESSEV Efficacy	5.0 a	**1.5 cde** **70.0**	**0.9 cde** **82.0**	1.4 cde ~~72.0~~ 71.5
Mean efficacy				*2*	*Mean* Min Max	*5.2* 5.0 5.4	***73.9*** **70.0** ~~77.8~~ **78.2**	***73.4*** ~~64.8~~ **65.7** **82.0**	*70.3* ~~68.5~~ 69.0 ~~72.0~~ 71.5
LEAF3 late	LVA	30		TL	PESSEV Efficacy	7.0 a a	**2.2 b** ~~68.6~~ **68.2** **bc**	**2.7 b** **61.4** **bc**	2.7 b 61.4 bc
	LVA	27			PESSEV Efficacy	11.3 a	**2.2 e** ~~80.5~~ **80.9**	**2.6 e** ~~77.0~~ **76.9**	3.1 e ~~72.6~~ 72.2
	LVA	27		TA	PESSEV Efficacy	8.4 a a	**1.0 de** ~~88.1~~ **87.8** **efg**	**1.1 de** ~~86.9~~ **87.5** **efg**	1.8 cde ~~78.6~~ 78.5 de
Mean efficacy				*3*	*Mean* Min Max	*8.9* 7.0 *11.3*	~~*79.1*~~ ***79.0*** ~~68.6~~ **68.2** ~~*88.1*~~ ***87.8***	***75.1*** **61.4** ~~*86.9*~~ ***87.5***	*70.9* 61.4 ~~*78.6*~~ *78.5*
LEAF4 late	LVA	30			PESSEV Efficacy	15.5 a	**5.4 c** ~~65.2~~ **65.3**	**6.3 c** ~~59.4~~ **59.7**	6.5 c 58.1
Mean efficacy				*1*		*15.5*	~~*65.2*~~ ***65.3***	~~*59.4*~~ ***59.7***	*58.1*

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>

For **leaf level 2 late**, the mean efficacy after one application across two trials reveals slight dose response between the target dose rates of CA3642 on the one hand and the lowered 1.0 L/ha dose rate on the other hand (difference 3.5 and 3% respectively). The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642, three trials with assessments on **leaf level 3 late** were available. The mean efficacy reveals a dose response across the three tested dose rates with 8% difference between the 1.4 L/ha and the 1.0 L/ha dose rate and 4% difference within the target dose rates. The detailed view on the single assessments reveals no statistically significant difference between the target dose rates and the reduced dose rate in any of the trials.

For **leaf level 4 late**, the efficacy after one application in one trial demonstrates a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642 (difference 7% and 1%). No statistically significant difference between the target dose rates and the reduced dose rate was assessed.

Comments of zRMS:

10 efficacy trials have been submitted to determine minimum effective dose to control of *Pyrenophora tritici-repentis* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate effectiveness on L2 in early assessment and L1 in the very late assessment after 2 applications. Low control was observed in late assessment on L1 and L2. The mean efficacy at 1 l/ha was slight inferior in some trials. Also moderate control was presented after 1 application in the late assessment. Low control has been noted in the early assessment (>50%). Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of

PYRNTR in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PYRNTR – South-East EPPO zone

A total of 3 trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat against *Pyrenophora tritici-repentis* (PYRNTR).
The trials were carried out in Bulgaria and Slovakia in 2020 and 2021. The first application took place at crop stage BBCH 31 - 32 and the second application was done 21 - 22 days later, at BBCH 49 - 58.

Table 3.2-138: Minimum effective dose of CA3642 after 2 applications against PYRNTR in wheat – Early assessment timing – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	BGR	37	15		PESSEV Efficacy	12.1 a	**2.0 b** ~~83.5~~ **83.7**	**2.4 b** ~~80.2~~ **80.5**	2.4 b ~~80.2~~ 80.0
Mean efficacy				*1*		*12.1*	*~~83.5~~* ***83.7***	*~~80.2~~* ***80.5***	*~~80.2~~ 80.0*
LEAF2 early	SVK	36	15		PESSEV Efficacy	7.0 a	**0.8 f** ~~88.6~~ **89.3**	**0.8 f** ~~88.6~~ **88.4**	1.3 e ~~81.4~~ 82.2
	BGR	37	15		PESSEV Efficacy	19.7 a	**7.6 b** ~~61.4~~ **61.7**	**8.9 b** ~~54.8~~ **54.9**	9.5 b 51.8
Mean efficacy				*2*	*Mean* Min Max	*13.4* 7.0 19.7	*~~75.0~~* ***75.5*** ~~61.4~~ **61.7** ~~88.6~~ **89.3**	***71.7*** ~~54.8~~ **54.9** ~~88.6~~ **88.4**	*~~66.6~~ 67.0* 51.8 ~~81.4~~ 82.2
LEAF3 early	SVK	36	15		PESSEV Efficacy	15.0 a	**1.8 h** ~~88.0~~ **88.3**	**2.0 g** ~~86.7~~ **88.4**	2.8 f ~~81.3~~ 82.2
	BGR	37	15		PESSEV Efficacy	22.3 a	**13.3 b** ~~40.4~~ **40.6**	**13.3 b** ~~40.4~~ **40.3**	14.0 b ~~37.2~~ 37.3
Mean efficacy				*2*	*Mean* Min Max	*18.7* 15.0 22.3	*~~64.2~~* ***64.5*** ~~40.4~~ **40.6** ~~88.0~~ **88.3**	*~~63.5~~* ***64.4*** ~~40.4~~ **40.3** ~~86.7~~ **88.4**	*~~59.3~~ 59.8* ~~37.2~~ 37.3 ~~81.3~~ 82.2

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 early**, the efficacy after two applications in one trial reveals slight numerical (3%) but not statistically significant dose response between the 1.4 L on the one hand and 1.2 L and 1.0 L/ha of CA3642 on the other hand. The efficacy of 1.2 L and 1.0 L/ha of CA3642 was identical.

For **leaf level 2 early**, the mean efficacy after two applications across two trials reveals slight dose response between the 1.4 L, 1.2 L/ha and the lowered 1.0 L/ha dose rate (difference of 3 and 5% respectively between the tested dose rates).
The detailed view on the single assessments reveals a numerical (7%) and statistically significant difference between the target dose rates and the reduced dose rate in one out of the two trials. For the second trial, no statistically significant difference was observable, albeit a clear numerical difference within the target dose rates (7%) and a slight difference (3%) between the 1.2 L/ha and the 1.0 L/ha dose rate.

For **leaf level 3 early**, the mean efficacy after two applications across two trials reveals slight dose response between the 1.2 L/ha of CA3642 compared to the lowered 1.0 L/ha dose rate (difference 4%). The detailed view on the single assessments reveals a statistically significant difference between all applied dose rates in one out of the two trials. For the second trial, no statistically significant difference was observable.

Table 3.2-139: Minimum effective dose of CA3642 after <u>2 applications</u> against PYRNTR in wheat – <u>Late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 late	BGR	53	31	TA	PESSEV Efficacy	11.8 a a	**2.3 b** **80.5** b	**3.3 b** **72.0** b	2.2 b 81.4 b
	BGR	55	33	TA	PESSEV Efficacy	5.7 a a	**1.6 b** ~~71.9~~ **71.2** b	**1.4 b** ~~75.4~~ **76.2** b	1.3 b ~~77.2~~ 77.3 b
Mean efficacy				*2*	*Mean* Min Max	*8.8* 5.7 11.8	***76.2*** ~~71.9~~ **71.2** **80.5**	***73.7*** **72.0** ~~75.4~~ **76.2**	*79.3* ~~77.2~~ 77.3 81.4
LEAF2 late	BGR	55	33		PESSEV Efficacy	7.7 a	**2.2 b** **71.4**	**3.0 b** ~~61.0~~ **61.8**	3.0 b ~~61.0~~ 60.8
	BGR	53	31		PESSEV Efficacy	20.0 a	**8.0 b** **60.0**	**10.8 b** **46.0**	10.3 b 48.5
Mean efficacy				*2*	*Mean* Min Max	*13.9* 7.7 20.0	***65.7*** **60.0** **71.4**	***53.5*** **46.0** ~~61.0~~ **61.8**	*54.8* 48.5 ~~61.0~~ 60.8

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 late**, the mean efficacy after two applications across two trials reveals slight dose response between the 1.4 L and 1.2 L/ha of CA3642. The mean efficacy of the lowered 1.0 L/ha dose rate was higher than the efficacy of the target dose rates. The detailed view on the single assessments reveals no statistically significant difference between the tested dose rates. For both trials, the performance of the lowered dose rate was superior to the target dose rates (differences between 1 and 9% across both trials and all applied dose rates).

For **leaf level 2 late**, the mean efficacy of the 1.4 L dose rate after two applications across two trials was distinctly higher (11%) than the mean efficacy of the lowered 1.0 L/ha dose rate of CA3642. The mean performance of the 1.2 L/ha dose rate of CA3642 was slightly inferior (1.5%) to the performance of the lowered 1.0 L/ha dose rate. For both trials, the detailed view on the single assessments reveals no statistically significant difference.

Table 3.2-140: Minimum effective dose of CA3642 after <u>2 applications</u> against PYRNTR in wheat – <u>Very late assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	SVK	57	36		PESSEV Efficacy	25.0 a	**4.3 i** **82.8**	**5.0 h** **80.0**	7.1 e 71.6
Mean efficacy				*1*		*25.0*	***82.8***	***80.0***	*71.6*

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF2 very late	SVK	57	36		PESSEV Efficacy	46.3 a	**8.0 f** **82.7**	**10.3 e** **77.8**	14.0 d 69.8
Mean efficacy				*1*		*46.3*	***82.7***	***77.8***	*69.8*

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 1 very late**, the efficacy after two applications in one trial reveals clear numerical (11% and 8% respectively) and statistically significantly superior efficacy of the 1.4 L and 1.2 L/ha dose rate of CA3642 compared to the lowered 1.0 L/ha dose rate.

For **leaf level 2 very late**, the results were comparable to leaf level 1: the efficacy of the 1.4 L and 1.2 L/ha dose rate of CA3642 was numerical (13% and 8% respectively) and statistically significantly higher than the efficacy of the lowered 1.0 L/ha dose rate.

Table 3.2-141: Minimum effective dose of CA3642 after <u>1 application</u> against PYRNTR in wheat – <u>Early assessment timing</u> – South-East EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application									
LEAF2 early	BGR	22		TA	PESSEV Efficacy	8.3 a a	**0.7 b** ~~91.6~~ **92.1** bc	**0.6 b** ~~92.8~~ **92.4** bc	1.2 b ~~85.5~~ 85.2 bc
Mean efficacy				*1*		*8.3*	~~*91.6*~~ ***92.1***	~~*92.8*~~ ***92.4***	~~*85.5*~~ *85.2*
LEAF3 early	BGR	22		TA	PESSEV Efficacy	13.1 a a	**2.6 b** **80.2** b	**2.1 b** **84.0** b	2.7 b 79.4 b
Mean efficacy				*1*		*-*	***80.2***	***84.0***	*79.4*
LEAF4 early	BGR	22			PESSEV Efficacy	19.6 a	**6.2 b** **68.4**	**5.3 b** **73.0**	6.7 b 65.8
Mean efficacy				*1*		*19.6*	***68.4***	***73.0***	*65.8*

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
For **leaf level 2 early**, the efficacy after one application in one trial demonstrates a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642. The 1.2 L/ha dose rate was slightly superior compared to the 1.4 L/ha dose rate. No statistically significant difference was assessed.

For the justification of the minimum effective dose rate of 1.2-1.4 L/ha of CA3642 after one application, one trial with assessments on **leaf level 3 early** was available. The efficacy of the 1.0 L/ha dose rate was numerically lower compared to the target dose rates 1.2-1.4 L/ha of CA3642. The 1.2 L/ha dose rate was slightly superior compared to the 1.4 L/ha dose rate. No statistically significant difference was assessed.

For **leaf level 4 early**, the efficacy after one application in one trial demonstrates a numerically lower efficacy of the 1.0 L/ha dose rate compared to the target dose rates 1.2-1.4 L/ha of CA3642. The 1.2 L/ha dose rate was slightly superior compared to the 1.4 L/ha dose rate. No statistically significant difference was assessed.

Comments of zRMS:

3 efficacy trials have been submitted to determine minimum effective dose to control of *Pyrenophora tritici-repentis* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications, in the early and late assessments. The difference of 10-15% was observed between 1 l/ha and 1,4 l/ha. Reducing dose rate to 1 l/ha gave significantly inferior efficacy. Sufficient results has been noted after 1 application for the higher doses. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Winter Wheat (TRZAW) – Green leaf area

TRZAW – Green leaf area – Maritime EPPO zone

36 trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat, assessed in terms of green leaf area. Trials were carried out in the Czech Republic (1), Northern France (7), Germany (8) and the United Kingdom (20) between 2019 and 2021.

Table 3.2-142: Minimum effective dose of CA3642 assessed as green leaf area in winter wheat – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA3642 300 g/L SC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
PLOT									
PLOT	DEU	57	29			82.5 f 100	**96.0 ab 116.4**	**91.0 cde 110.3**	94.0 a-d 113.9
	DEU	45	30			82.5 a 100	**82.5 a 100.0**	**82.5 a 100.0**	83.8 a 101.6
	FRA	63	45			32.5 b 100	**63.8 a 196.3**	**65.0 a 200.0**	57.5 a 176.9
Mean % relative UTC				3	Mean Min Max	65.8 32.5 82.5	***137.6*** 100.0 196.3	***136.8*** 100.0 200.0	***130.8*** 101.6 176.9
PLANT									
PLANT	GBR	*54*	36			22.5 c 100	**99.0 a 440.0**	**98.3 a 436.9**	95.0 a 422.2
	GBR	55	30			47.5 f 100	**75.0 a 157.9**	**73.8 ab 155.4**	73.8 ab 155.4
	DEU	56	38			93.0 ab 100	**90.8 bc 97.6**	**92.8 ab 99.8**	94.0 a 101.1
	GBR	56	41			75.0 c 100	**85.0 a 113.3**	**83.0 ab 110.7**	82.3 ab 109.7
	DEU	57	29			60.0 b 100	**70.0 a 116.7**	**70.0 a 116.7**	70.0 a 116.7
	CZE	59	35			7.5 e 100	**42.5 a 566.7**	**37.5 b 500.0**	35.0 bc 466.7
	GBR	59	41			42.5 e 100	**75.0 a 176.5**	**60.0 cd 141.2**	57.5 d 135.3
	GBR	59	42			66.3 c 100	**81.3 a 122.6**	**77.5 ab 116.9**	77.5 ab 116.9
	DEU	60	25			100.0 a 100.0	**100.0 a 100.0**	**100.0 a 100.0**	100.0 a 100.0
	GBR	61	27			35.0 c	**61.3 a**	**52.5 a**	48.8 ab

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type Rate	UTC	CA3642 300 g/L SC 1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 300 g/L SC 1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	CA3642 300 g/L SC 1 l/ha 150 g AZX/ha + 150 g PTZ/ha
						100	**175.1**	**150.0**	139.4
	FRA	62	39			15.0 d 100	**55.0 ab** **366.7**	**52.5 bc** **350.0**	42.5 c 283.3
	DEU	62	42			88.8 c 100	**100.0 a** **112.6**	**100.0 a** **112.6**	100.0 a 112.6
	GBR	64	41			11.3 d 100	**90.0 a** **796.5**	**90.0 a** **796.5**	85.0 a 752.2
	GBR	65	43			23.8 c 100	**68.8 a** **289.1**	**66.3 a** **278.6**	58.8 ab 247.1
	DEU	66	49			46.3 i 100	**76.3 cd** **164.8**	**72.5 def** **156.6**	70.0 d-g 151.2
	FRA	70	43			5.0 f 100	**79.3 a** **1586.0**	**65.0 ab** **1300.0**	63.8 ab 1276.0
	GBR	71	41			31.3 c 100	**69.0 a** **220.4**	**66.3 a** **211.8**	64.3 a 205.4
	GBR	74	40			63.8 c 100	**88.8 a** **139.2**	**90.0 a** **141.1**	80.0 ab 125.4
	GBR	74	47			12.5 d 100	**95.0 a** **760.0**	**95.0 a** **760.0**	91.3 a 730.4
	GBR	77	42			8.8 d 100	**88.8 a** **1009.1**	**85.0 a** **965.9**	86.3 a 980.7
	DEU	82	45			14.5 d 100	**46.3 a** **319.3**	**37.5 abc** **258.6**	41.3 abc 284.8
	GBR	84	52			20.0 a 100	**25.0 a** **125.0**	**25.0 a** **125.0**	25.0 a 125.0
	FRA	92	62			18.8 f 100	**78.8 a** **419.1**	**75.0 ab** **398.9**	58.0 de 308.5
	FRA	56	41			70.0 c 100	**91.0 a** **130.0**	**88.8 ab** **126.9**	90.5 ab 129.3
	FRA	61	34			75.5 a 100	**91.8 a** **121.6**	**86.8 a** **115.0**	81.8 a 108.3
	FRA	89	58			12.5 e 100	**40.0 a** **320.0**	**33.8 ab** **270.4**	31.3 b 250.4
Mean % relative UTC				26	Mean Min Max	*41.0* 5.0 100.0	***344.1*** **97.6** **1586.0**	***319.0*** **99.8** **1300.0**	*305.2* 100.0 1276.0
LEAF									
LEAF1	GBR	48	32		TA	43.8 b 100 b	**94.3 a** **215.3** **a**	**90.5 a** **206.6** **a**	81.3 a 185.6 a
	GBR	60	41			56.3 b 100	**67.5 a** **119.9**	**71.3 a** **126.6**	66.3 a 117.8
	GBR	63	42			58.8 f 100	**95.5 a** **162.4**	**87.5 bc** **148.8**	72.5 e 123.3
	DEU	67	39		TA	72.5 f 100 g	**90.0 cd** **124.1** **de**	**92.8 abc** **128.0** **bcd**	90.8 cd 125.2 cde
	GBR	67	47			27.5 b 100	**71.3 a** **259.3**	**68.8 a** **250.2**	61.3 a 222.9
	GBR	68	43			66.3 d 100	**94.3 a** **142.2**	**95.5 a** **144.0**	88.8 a 133.9
	GBR	72	46			5.5 d 100	**25.0 bc** **454.5**	**30.0 ab** **545.5**	27.5 abc 500.0
	GBR	95	72			25.0 a 100	**25.0 a** **100.0**	**25.0 a** **100.0**	25.0 a 100.0
Mean % relative UTC				*8*	*Mean* Min	*44.5* 5.5	***197.2*** **100.0**	***206.2*** **100.0**	*188.6* 100.0

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
					Max	72.5	**454.5**	**545.5**	500.0
LEAF2	GBR	48	32			19.0 d 100	**66.3 abc 348.9**	**62.5 abc 328.9**	53.8 bc 283.2
	GBR	60	41			42.5 b 100	**61.3 a 144.2**	**62.5 a 147.1**	63.8 a 150.1
	GBR	63	42			20.0 f 100	**89.3 a 446.5**	**85.0 a 425.0**	67.5 bc 337.5
	DEU	67	39			7.5 e 100	**20.0 cd 266.7**	**25.0 bc 333.3**	23.8 bc 317.3
	GBR	67	47			16.3 b 100	**65.0 a 398.8**	**62.5 a 383.4**	55.0 a 337.4
	GBR	68	43			33.8 e 100	**92.5 a 273.7**	**92.5 a 273.7**	85.0 b 251.5
	GBR	72	46			1.8 c 100	**7.5 bc** 416.7	**10.0 b** 555.6	5.8 bc 322.2
Mean % relative UTC				*7*	*Mean* Min Max	*20.1* 1.8 42.5	***327.9*** **144.2** **446.5**	***349.6*** **147.1** **555.6**	*285.6* 150.1 337.5
LEAF3	GBR	60	41			17.5 b 100	**42.5 a 242.9**	**46.3 a 264.6**	45.0 a 257.1
	GBR	67	47			7.5 b 100	**36.3 a 484.0**	**33.8 a 450.7**	26.3 a 350.7
	GBR	68	43			18.8 f 100	**91.3 a 485.6**	**83.8 b 445.7**	73.8 cd 392.6
Mean % relative UTC				*3*	*Mean* Min Max	*14.6* 7.5 18.8	***404.2*** **242.9** **485.6**	***387.0*** **264.6** **450.7**	*333.5* 257.1 392.6

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Plot level

Efficacy in terms of green leaf area was assessed on three trials at the plot level at 29- 45 DA-B. There was one trial that included several pathogens and the other two only one. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 37-38 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 31 %.
No significant difference was observed at this level between dose rates 1.4 or 1.2 L/ha and the lower dose rate 1.0 L/ha.

Plant level

Efficacy in terms of green leaf area was assessed on 26 trials at the plant level at 25- 62 DA-B. Of the 26 trials, 13 had more than one pathogen present while the rest had only one. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 219-244 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 205 %. In six trials 1.4 L/ha CA3642 had a significantly higher green leaf area compared to the lower dose rate of 1.0 L/ha.

Leaf level

Efficacy in terms of green leaf area was assessed on eight trials for leaf level 1, seven for leaf level 2 and three for leaf level 3 at 32- 72 DA-B, 32- 47 DA-B and 41- 47 DA-B respectively. There were two trials at each leaf level with more than one pathogen included. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 97-106 % for leaf level 1, 228-250 % for leaf level 2 and 287-304 % for leaf level 3 compared to the untreated control. The lower dose rate at 1.0 L/ha had a mean green leaf area increase of 89 %, 186 % and 234 % at leaf level 1, 2 and 3 respectively. There was a significantly higher green leaf area for 1.2 and 1.4 L/ha of CA3642 when compared to the lower dose rate of 1.0 L/ha in 1, 2 and 1 trials for leaf levels 1, 2 and 3 respectively.

Comments of zRMS:

The mean green leaf on plot increased by 37,6% after 2 applications of CA3642 at 1,4 l/ha, 36,8% at 1,2 l/ha and 30,8% at 1 l/ha in 1 efficacy trial. Significant increase was visible in case of whole plant with results of 244,1% at 1,4 l/ha, 219% at 1,2 l/ha and 205,2% at 1 l/ha. The mean green leaf was higher compared to untreated control were observed on L1-L3. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

TRZAW – Green leaf area – North-East EPPO zone

29 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat, assessed in terms of green leaf area. Trials were carried out in Poland (20), Latvia (7) and Lithuania (2) between 2019 and 2021.

Table 3.2-143: Minimum effective dose of CA3642 assessed as green leaf area in winter wheat – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA3642 300 g/L SC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
PLOT	LVA	60	35			35.0 a 100	**60.0 a 171.4**	60.0 a 171.4	52.5 a 150.0
Mean % Relative UTC				*1*		*35.0*	***171.4***	*171.4*	*150.0*
PLANT	LVA	49	21			25.0 b 100	**40.0 a 160.0**	37.5 a 150.0	38.8 a 155.2
	LVA	49	21			31.3 a 100	**37.5 a 119.8**	42.5 a 135.8	37.5 a 119.8
	LVA	51	21			28.8 c 100	**42.5 ab 147.6**	50.0 ab 173.6	45.0 ab 156.3
	POL	51	36			26.3 a 100	**26.3 a 100.0**	30.0 a 114.1	30.0 a 114.1
	POL	53	23			10.0 d 100	**43.8 ab 438.0**	33.8 bc 338.0	22.5 c 225.0
	LTU	56	31			15.3 e 100	**37.2 ab 242.7**	39.7 a 259.0	26.0 cd 169.3
	POL	56	35			53.8 a 100	**46.3 a 86.1**	68.8 a 127.9	50.0 a 92.9
	POL	57	35			35.0 a 100	**35.0 a 100.0**	41.3 a 118.0	33.8 a 96.6
	POL	59	45			31.3 b 100	**42.5 a 136.0**	35.0 b 112.0	35.0 b 112.0
	POL	61	34		TA	23.8 b 100 b	**71.3 a 299.6 a**	75.0 a 315.1 a	72.5 a 304.6 a
	LVA	62	37			13.8 a 100	**15.0 a 108.7**	16.3 a 118.1	17.5 a 126.8
	POL	63	37			25.0 a 100	**28.8 a 115.2**	23.8 a 95.2	30.0 a 120.0
	POL	64	36			37.5 b 100	**42.5 ab 113.3**	45.0 a 120.0	38.8 ab 103.5
	LVA	69	42			42.3 a 100	**44.5 a 105.2**	48.5 a 114.7	45.0 a 106.4
	LVA	69	44			11.3 a 100	**13.8 a 122.1**	16.3 a 144.2	13.8 a 122.1
	LVA	70	37			40.0 c 100	**51.3 a 128.3**	51.3 a 128.3	47.5 ab 118.8
	POL	70	39			20.0 d	**32.5 abc**	32.5 abc	32.5 abc

						100	**162.5**	162.5	162.5
	POL	70	42			81.3 c 100	**95.0 a** **116.9**	93.8 ab 115.4	91.3 ab 112.3
	LTU	72	45			23.8 d 100	**41.3 a** **173.7**	38.8 ab 163.2	34.4 bc 144.8
	POL	72	38			50.0 a 100	**42.5 a** **85.0**	43.8 a 87.6	35.0 a 70.0
	POL	74	40			66.3 c 100	**78.8 ab** **118.9**	75.0 ab 113.1	76.3 ab 115.1
	POL	75	40			77.5 d 100	**93.8 a** **121.0**	90.0 b 116.1	87.5 bc 112.9
	POL	82	31			32.5 a 100	**50.0 a** **153.8**	42.5 a 130.8	42.5 a 130.8
	POL	83	32			50.0 b 100	**70.0 a** **140.0**	62.5 ab 125.0	62.5 ab 125.0
	POL	84	32			25.0 a 100	**32.5 a** **130.0**	52.5 a 210.0	37.5 a 150.0
	POL	84	32			62.5 b 100	**70.0 ab** **112.0**	70.0 ab 112.0	80.0 a 128.0
	POL	84	35			20.0 c 100	**42.5 a** **212.5**	38.8 ab 194.0	36.3 ab 181.5
	POL	85	32			12.5 b 100	**55.0 a** **440.0**	50.0 a 400.0	45.0 a 360.0
	POL	87	34			10.0 c 100	**40.0 ab** **400.0**	30.0 abc 300.0	40.0 ab 400.0
Mean % Relative UTC				*29*	*Mean* Min Max	*33.5* 10.0 81.3	***173.2*** **85.0** **440.0**	*170.6* 87.6 400.0	*158.3* 70.0 400.0

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

<u>Plot level</u>
Efficacy in terms of green leaf area was assessed on one trial at the plot level at 35 DA-B. Only a single pathogen is included in the trial. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 71 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 50 %.
No significant difference was observed at this level between dose rates 1.4 or 1.2 L/ha and the lower dose rate 1.0 L/ha.

<u>Plant level</u>
Efficacy in terms of green leaf area was assessed on 29 trials at the plant level at 21-45 DA-B. Of the 29 trials, eleven had more than one pathogen present while the rest had only one. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 71-73 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 58 %. In one and five trials 1.2 and 1.4 L/ha CA3642 respectively had a significantly higher green leaf area compared to the lower dose rate of 1.0 L/ha.

Comments of zRMS:

The mean green leaf on plot increased by 71,4% after 2 applications of CA3642 at 1,2-1,4 l/ha and 50% at 1 l/ha in 1 efficacy trial. Similar effect was visible in case of plant area. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted.

TRZAW – Green leaf area – South-East EPPO zone

25 trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.4 L/ha of CA3642 applied up to two times in winter wheat, assessed in terms of green leaf area. Trials were carried out in Bulgaria (3), Hungary (10), Romania (10) and Slovakia (2) between 2019 and

2021.

Table 3.2-144: Minimum effective dose of CA3642 assessed as green leaf area in winter wheat – South-East EPPO zone

Part Rated	Coun-try	DA-A	DA-B	No of trials	Nam e Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA3642 300 g/L SC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
PLOT	ROU	60	38			7.5 b 100	**15.0 a 200.0**	**15.0 a 200.0**	13.8 a 184.0
Mean % relative UTC				1		7.5	**200.0**	**200.0**	184.0
PLANT	BGR	53	31			16.3 c 100	**26.3 abc 161.3**	**21.3 abc 130.7**	27.5 abc 168.7
	BGR	54	37			6.3 c 100	**20.0 a 317.5**	**20.0 a 317.5**	18.8 a 298.4
	ROU	55	27			8.8 e 100	**75.0 abc 852.3**	**73.8 bc 838.6**	57.5 d 653.4
	BGR	55	33			21.3 b 100	**31.3 a 146.9**	**33.8 a 158.7**	33.8 a 158.7
	ROU	57	36			6.3 e 100	**76.3 ab 1211.1**	**72.5 bc 1150.8**	55.0 d 873.0
	SVK	57	36			56.0 f 100	**90.0 a 160.7**	**88.5 b 158.0**	84.5 c 150.9
	SVK	57	36			46.0 g 100	**92.3 a 200.7**	**91.5 a 198.9**	90.0 b 195.7
	ROU	58	43			35.0 c 100	**67.5 ab 192.9**	**66.3 ab 189.4**	65.0 ab 185.7
	ROU	58	43			43.8 d 100	**67.5 abc 154.1**	**62.5 bc 142.7**	61.3 bc 140.0
	ROU	58	43			46.3 d 100	**72.5 abc 156.6**	**70.0 bc 151.2**	70.0 bc 151.2
	ROU	60	32			8.8 d 100	**71.3 a 810.2**	**72.5 a 823.9**	55.0 c 625.0
	HUN	60	40			20.0 a 100	**30.0 a 150.0**	**30.0 a 150.0**	30.0 a 150.0
	HUN	60	43			27.5 c 100	**80.0 a 290.9**	**80.0 a 290.9**	80.0 a 290.9
	HUN	62	42			10.0 d 100	**30.0 a 300.0**	**30.0 a 300.0**	30.0 a 300.0
	HUN	62	45			32.5 b 100	**45.0 a 138.5**	**47.5 a 146.2**	47.5 a 146.2
	HUN	64	47			81.3 a 100	**92.0 a 113.2**	**86.3 a 106.2**	88.3 a 108.6
	HUN	65	45			10.0 a 100	**30.0 a 300.0**	**30.0 a 300.0**	30.0 a 300.0
	HUN	66	48			37.5 b 100	**57.5 a 153.3**	**62.5 a 166.7**	60.0 a 160.0
	HUN	67	40		TA	92.0 a 100 a	**98.5 a 107.1 a**	**98.0 a 106.5 a**	99.0 a 107.6 a
	ROU	69	28			18.8 a 100	**20.0 a 106.4**	**20.0 a 106.4**	22.5 a 119.7
	HUN	69	47			72.5 b 100	**80.0 ab 110.3**	**77.5 ab 106.9**	81.3 ab 112.1
	HUN	79	43			100.0 a 100.0	**100.0 a 100.0**	**100.0 a 100.0**	100.0 a 100.0
Mean % relative UTC				*22*	*Mean* Min Max	*36.2* 6.3 100.0	***283.4*** **100.0** **1211.1**	***279.1*** **100.0** **1150.8**	*249.8* 100.0 873.0

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF2	ROU	55	27			3.3 e 100	**48.8 a 1478.8**	**47.5 ab 1439.4**	47.5 ab 1439.4
Mean % relative UTC				1		3.3	**1478.8**	**1439.4**	1439.4
LEAF1	ROU	55	27			20.5 d 100	**77.8 a 379.5**	**75.5 ab 368.3**	76.3 a 372.2
Mean % relative UTC				1		20.5	**379.5**	**368.3**	372.2
LEAF3	ROU	56	28		TA	3.8 e 100 e	**62.3 a 1639.5 a**	**58.0 b 1526.3 b**	54.0 bc 1421.1 bc
Mean % relative UTC				1	Mean	*12.2*	***220.9***	***213.1***	*213.1*

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

<u>Plot level</u>
Efficacy in terms of green leaf area was assessed on one trial at the plot level at 38 DA-B. Only a single pathogen is included in the trial. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 100 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 84 %.
No significant difference was observed at this level between dose rates 1.4 or 1.2 L/ha and the lower dose rate 1.0 L/ha.
<u>Plant level</u>
Efficacy in terms of green leaf area was assessed on 22 trials at the plant level at 27- 48 DA-B. Of the 22 trials, seven had more than one pathogen present while the rest had only one. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 179-183 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 150 %. In five trials 1.2 and 1.4 L/ha CA3642 had a significantly higher green leaf area compared to the lower dose rate of 1.0 L/ha.

<u>Leaf level</u>
Efficacy in terms of green leaf area was assessed on one trial at 27, 28 and 27 DA-B for leaf level 1, 2 and 3 each respectively. There was one pathogen in each trial at all leaf levels. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 268-280 % for leaf level 1, 1339-1379 % for leaf level 2 and 1426-1540 % for leaf level 3 compared to the untreated control. The lower dose rate at 1.0 L/ha had a mean green leaf area increase of 272 %, 1339 % and 1321 % at leaf level 1, 2 and 3 respectively. There was a significantly higher green leaf area for 1.4 L/ha of CA3642 when compared to the lower dose rate of 1.0 L/ha in leaf level 3 only. This unusually high relative green leaf area is due to a very low green leaf area in the untreated control.

Comments of zRMS:

The mean green leaf on plot increased by 100% after 2 applications of CA3642 at 1,2-1,4 l/ha and 84% at 1 l/ha in 1 efficacy trial. If we take whole plant, an increase was 183,4% at 1,4 l/ha, 179,1% at 1,2 l/ha and 149,8% at 1 l/ha. Significant differences are visible in case of leaf area with results of 1378,8% at 1,4 l/ha and 1339,4% at 1-1,2 l/ha on L2. No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Significant positive impact on green leaf area has been noted.

Summary and conclusions on the minimum effective dose

A total of 100 efficacy trials were established in order to determine the minimum effective dose of the fungicide CA3642 (150 g/L azoxystrobin + 150 g/L prothioconazole) for the control of a range of diseases on wheat.

Five representative diseases on winter wheat are considered for the purpose of this minimum effective dose demonstration:

- Septoria leaf spot – *Zymoseptoria tritici* (SEPTTR)
- Powdery mildew – *Blumeria graminis* / *Blumeria graminis* f. sp. *tritici* (ERYSGR / ERYSGT)
- Brown rust – *Puccinia recondita* / *Puccinia triticina* (PUCCRE / PUCCRT)
- Yellow rust – *Puccinia striiformis* / *Puccinia striiformis* f. sp. *tritici* (PUCCST / PUCCSI)
- Tan spot – *Pyrenophora tritici-repentis* (PYRNTR)

Overall, across the three EPPO zones and all diseases, a dose rate response was observed for higher disease control with higher dose rates. In particular, the rates of 1.2-1.4 L/ha generally gave significantly better control compared to the rate of 1.0 L/ha. In many of the dataset there was no statistical differences between the dose rates of 1.2 L/ha or 1.4 L/ha, however it was frequently observed that where disease severity was higher, a significant benefit was derived from increasing the dose rate from 1.2 to 1.4 L/ha while in circumstances of low disease pressure, the 1.2 L/ha dose rate was sufficient to give comparable disease control. Due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate may be deemed more appropriate and should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In addition, the data demonstrates overall similar effects for the targeted diseases regardless of EPPO zone. Similarly, the same dose rate trends were observed for improving green leaf area in situations of infection from a single pathogen or in cases of disease complexes. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

In this dossier data presented for minimum effective dose is primarily from assessments where 2 applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved with 1.2-1.4 L/ha depending on the disease pressure. According to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications.

Therefore, a minimum effective dose rate of 1.2-1.4 L/ha is proposed for CA3642 on wheat in each of the EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all presented elements, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control a range of diseases on wheat.

Spelt (TRZSP)

A total of 1 trial was carried out recently on Spelt in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.2-1.4 L/ha CA3642 for the control of PUCCSI, ERYSGR and SEPPTR. Results from a total of 1 valid trial are presented in this chapter.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Spelt (TRZSP) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

One field trial was established in 2021 in order to determine the minimum effective dose for the control of the SEPTTR in Spelt in the North-East (1 trials) EPPO zone.

The trial from the North-East EPPO zone was carried out in Poland (1 trial).

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and reduced rates and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-145.

TRZSP – SEPTTR – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in Spelt against SEPTTR. The trial was carried out in Poland in 2021.
The first application took place at crop stage BBCH 32 and the second application was done 18 days later at BBCH 53.

Table 3.2-145: Minimum effective dose of CA3642 against SEPTTR in Spelt – North-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	Number of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC		
					Rate		1.4 L/ha 210g AZX/ha 210g PTZ/ha	1.2 L/ha 180g AZX/ha 180g PTZ/ha	1.0 L/ha 150g AZX/ha 150g PTZ/ha
Efficacy after 2 applications									
LEAF1	POL	47	29		PESSEV Efficacy	5.6 a -	**0.4 b** **92.9**	**0.5 b** **91.1**	0.5 b ~~91.1~~ 91.5
Mean efficacy						*5.6*	***92.9***	***91.1***	*~~91.1~~ **91.5***
LEAF2	POL	47	29		PESSEV Efficacy	6.6 a -	**0.7 b** ~~89.4~~ **88.9**	**0.9 b** ~~86.4~~ **86.2**	0.8 b ~~87.9~~ 88.5
Mean efficacy						*6.6*	*~~89.4~~ **88.9***	*~~86.4~~ **86.2***	*~~87.9~~ 88.5*

UTC: % infestation in untreated control at assessment date

In the trial, for both levels the performance of the intended dose rates was equivalent to the reduced dose rates (1.0 L/ha), although a slight numerical difference was observed between treatments with the highest intended dose rate (1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha) in two assessments on both leaf levels.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in spelt wheat in the North-East EPPO climatic zone. CA3642 at 1-1,4 l/ha achieved good results after 2 applications with mean efficacy 91,1-92,9% on L1 and 86,2-88,9% on L2. However limited number of trials was available in the NE zone and an extrapolation from other cereals is not possible. Spelt wheat is minor crop is Poland and the registration under art. 51 can be used for this species.

Spelt (TRZSP) – Green leaf area (GLA)

A total of 1 trial carried out in 2021 is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in spelt in the North-East (1 trial) EPPO zones.

Trials from the North-East EPPO zone were carried out in Poland (1 trial).

TRZSP – Green leaf area – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in spelt, assessed in terms of green leaf area. Trials were carried out in Poland in 2021.
The first application took place at crop stage BBCH 31-32 and the second application was done 18-29 days later at BBCH 49 and 53.

Table 3.2-146: Minimum effective dose of CA3642 assessed as green leaf area in Spelt – North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**Number of trials**	**Name Conc Type**	**UTC**	**CA3642 150g/L AZX + 150g/L PTZ 300 g/L SC**		
					Rate		**1.4 L/ha**	**1.2 L/ha**	**1.0 L/ha**
							210g AZX/ha + 210g PTZ/ha	**180g AZX/ha + 180g PTZ/ha**	**150g AZX/ha + 150g PTZ/ha**
Plant	POL	47	29		GRNARE cf UTC	40.0 a 100	**42.5 a 106.3**	**40.0 a 100.0**	41.3 a 103.3
Mean efficacy				2	Mean	40.0	***106.3***	***100.0***	*103.3*

UTC: % infestation in untreated control at assessment date

Efficacy in terms of green leaf area was assessed on the whole plant at 21-29 DA-B. In this trial just a single disease (SEPTTR) was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 0-6 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 3 %. No statistically significant difference was observed.
For one assessment, the green leaf area decreased compared to the untreated check by 3%.

Comments of zRMS:

The mean green leaf on whole plant area increased by 6,3% after 2 applications of CA3642 at 1,4 l/ha and 3,3% at 1 l/ha in 1 efficacy trial. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted.

Spelt - Summary and conclusions on the minimum effective dose

On spelt, one foliar disease was assessed in 1 trial across the North-East EPPO zone. Disease severity was assessed and analysed on the main foliar levels 1 and 2.

Overall, disease control was achieved at the dose rates tested. Due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate may be deemed more appropriate and should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

Similarly, the same dose rate trends were observed for improving green leaf area in situations of disease infection. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.
Data on winter wheat is also supportive of the use on spelt wheat.

Therefore, a minimum effective dose rate of 1.2-1.4 L/ha is proposed for CA3642 on spelt wheat in each of the three EPPO zones in which the trials were conducted, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control a range of foliar diseases on spelt.

Durum Wheat (TRZDU)

A total of 12 efficacy trials are available on durum wheat in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.2-1.4 L/ha CA3642 for the control of SEPTTR, PUCCSI and ERYSGRT. No data is provided from the North-East EPPO grown as durum wheat is rarely grown there and is classed as a minor crop for Poland.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Durum wheat (TRZDU)
Table 3.2-254.

Durum wheat (TRZDU) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

Eight field trials were established between 2019 and 2021 in order to determine the minimum effective dose for the control of the SEPTTR in durum wheat. Trials from the Maritime EPPO zone were carried out in Germany (3 trials) and France (2 trials), the trials from the South-East EPPO zone were carried out in Hungary (2 trials) and Romania (1 trial).
In addition, 1 trial is available from the Maritime zone (Germany) on spring-sown durum wheat. The data from this trial is also presented within this section, but in separate tables.
CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone and pest are provided in Table 3.2-147 - Table 3.2-150.

TRZDU – SEPTTR – Maritime EPPO zone

A total of five trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter sown durum wheat against SEPTTR. Three trials were carried out in Germany and two trials were carried in France in 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2-147: Minimum effective dose of CA3642 against SEPTTR in durum wheat – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF 1 early	DEU	52	16	1	PESSEV Efficacy	6.8 a -	**2.4 cde** ~~64.7~~ **64.4**	**2.9 c** ~~57.3~~ **56.8**	2.5 cde ~~63.2~~ 63.5
Mean efficacy				*1*					
LEAF 1 late	FRA	45	31	1	PESSEV Efficacy	4.2a -	**1.1b** ~~73.8~~ **74.0**	**0.5b** ~~88.1~~ **87.9**	1.7b ~~59.5~~ 61.0
Mean efficacy				*1*					

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF 1 very late	FRA	62	42	1 TA	PESSEV Efficacy	12.5 - a	**3.2** ~~74.4~~ **74.8** **b**	**2.8** ~~77.6~~ **78.0** **b**	4.4 ~~64.8~~ 65.0 b
	DEU	76	40	1	PESSEV Efficacy	69.4a -	**23.3 de** ~~66.4~~ **66.5**	**32.3 cd** **53.5**	22.2 de 68.0
	DEU	70	36	1 TL	PESSEV Efficacy	49.2 - a	**21.9** **55.5** **b**	**11.6** ~~76.4~~ **76.5** **b**	16.7 ~~66.1~~ 66.0 b
Mean efficacy				*3*	*Mean* Min Max	*43.7* 12.5 69.4	~~65.4~~ ***65.6*** **55.5** ~~74.4~~ **74.8**	~~69.2~~ ***69.3*** **53.5** ~~77.6~~ **78.0**	*66.3* ~~64.8~~ 65.0 68.0
LEAF2 early	DEU	52	16	1	PESSEV Efficacy	16.2 a	**5.8 e** ~~64.2~~ **64.1**	**7.4 b-e** ~~54.3~~ **54.1**	7.1 cde ~~56.2~~ 56.4
	DEU	50	16	1	PESSEV Efficacy	6.3 a	**3.4 cd** **46.3**	**4.9 bc** ~~22.2~~ **21.6**	4 cd ~~36.5~~ 36.3
Mean efficacy				*2*	*Mean* Min Max	*11.3* 6.3 16.2	~~55.1~~ ***55.2*** **46.3** ~~64.2~~ **64.1**	~~38.3~~ ***37.9*** ~~22.2~~ **21.6** ~~54.3~~ **54.1**	~~46.3~~ *46.4* ~~36.5~~ 36.3 ~~56.2~~ 56.4
LEAF 2 very late	FRA	45	31	1	PESSEV Efficacy	14.1 -	**4.9 b** ~~65.2~~ **65.3**	**4.9 b** ~~65.2~~ **64.9**	5.8 b ~~58.9~~ 59.0
	FRA	62	42	1	PESSEV Efficacy	34a 34	**6.9b** **79.7**	**16.3** ~~52.1~~ **52.0**	14.6b ~~57.1~~ 57.2
	DEU	70	36	1	PESSEV Efficacy	71.9a -	**55.3ab** **23.1**	**55.7ab** **22.5**	40.9b 43.1
Mean efficacy				3	*Mean* Min Max	*40.0* 14.1 71.9	***56.0*** **23.1** **79.7**	~~46.6~~ ***46.5*** **22.5** ~~52.1~~ **52.0**	~~53.0~~ *53.1* 43.1 ~~57.1~~ 57.2
LEAF 3 early	FRA	35	15	1	PESSEV Efficacy	4.1 a -	**2.6 a** ~~36.6~~ **37.3**	**2.1 a** ~~48.8~~ **49.1**	4.1 a ~~51.2~~ 50.6
	DEU	62	19	1	PESSEV Efficacy	65.7 a -	**31.0 de** ~~52.8~~ **52.9**	**31.4 de** **52.2**	42.6 cd 35.2
	DEU	50	16		PESSEV Efficacy	15.8 a -	**6.3 de** ~~60.1~~ **60.4**	**4.9 de** ~~69.0~~ **69.2**	4.1 e ~~74.1~~ 74.0
Mean efficacy				*3*	*Mean* Min Max	*28.5* 4.1 65.7	~~49.8~~ ***50.2*** ~~36.6~~ **37.3** ~~60.1~~ **60.4**	~~56.7~~ ***56.8*** ~~48.8~~ **49.1** ~~69.0~~ **69.2**	~~53.5~~ *53.3* 35.2 ~~74.1~~ 74.0
Leaf 4 early	FRA	35	15	1	PESSEV Efficacy TA	8.6 a - a	**4.4 a** **48.8** **a**	**3.2 a** ~~62.8~~ **62.5** **a**	4.1 a ~~52.3~~ 52.0 a
	FRA	28	14	1	PESSEV Efficacy	4.4 a -	**2.0 b** ~~54.5~~ **55.4**	**2.1 b** ~~52.3~~ **53.4**	3.4 b ~~22.7~~ 23.7
Mean efficacy				*2*	*Mean* Min Max	*6.5* 4.4 8.6	~~51.7~~ ***52.1*** **48.8** ~~54.5~~ **55.4**	~~57.5~~ ***58.0*** ~~52.3~~ **53.4** ~~62.8~~ **62.5**	~~37.5~~ *37.9* ~~22.7~~ 23.7 ~~52.3~~ 52.0
Efficacy after 1 application									
Leaf 2 late	DEU	34	-	1	PESSEV Efficacy	5.8 a -	**3.4 def** ~~41.4~~ **42.4**	**4.9 b** ~~15.5~~ **15.9**	4.0 c ~~31.0~~ 31.7
Mean efficacy						*5.8*	~~41.4~~ ***42.4***	~~15.5~~ ***15.9***	~~31.0~~ *31.7*
Leaf 4 late	DEU	43	-	1	PESSEV Efficacy TL	6.8 - a	**0.6** ~~91.2~~ **91.1** **b**	**0.3** ~~95.6~~ **95.7** **b**	0.9 ~~86.8~~ 86.5 b
Mean efficacy						*6.8*	~~91.2~~ ***91.1***	~~95.6~~ ***95.7***	~~86.8~~ *86.5*

In the assessments after the second application, there were comparable efficacy values for the intended dose rates of CA3642 (1.4 L/ha and 1.2 l/ha) compared to the reduced dose rate (1.0 L/ha): For early assessments for leaf 1 and leaf 2, there were no numerical or statistical differences between treatments in most assessments. In one assessment, there was a numerically difference observed for an application rate of 1.4 L/ha (46.3 %) and the reduced application rate (~~36.5~~ 36.3%). For leaf 3, in two trials out of three, efficacy was numerically but not statistically higher for the reduced dose of CA3642 (1.0 l/ha) compared to the highest intended dose rate (1.4 L/ha). In the remaining trial, it was the opposite, efficacy was numerically (not-statistically) higher for 1.4 L/ha, compared to the reduced dose rate of CA3642 (1.0 L/ha). For leaf 4 early, in one out of two trials, numerically higher efficacy values were achieved for the intended dose rates of CA3642 compared to the reduced dose rate (~~54.5~~ 55.4% for 1.4 L/ha and ~~52.3~~ 53.4% L/ha for 1.2 L/ha compared to ~~22.7~~ 23.7% for 1.0 L/ha). For the late assessments, for leaf 2, efficacy values were comparable among the three dose rates of CA6342. In one trial, the reduced dose rate showed lower numerical efficacy compared to the highest dose rate and in one trial the reduced dose rate showed higher numerical efficacy values than the intended dose rates but these differences were not significant.

After one application, there was a statistical difference in which the highest intended dose rate of CA3642 1.4 L/ha (~~41.4~~ 42.4% efficacy) provided higher control than the reduced dose rate (1.0 L/ha) with an efficacy of ~~31~~ 31.7 % on leaf level 2 at a late assessment date. For leaf 4 late, similar values were obtained (non-significantly or numerically different) for the intended dose rate (1.4 L/ha, ~~91.2~~ 91.1 %) compared to the reduced dose rate (1.0 L/ha, ~~86.8~~ 86.5 %).

In conclusion, a similar efficacy can be shown for the intended dose rates, compared to the reduced rate to control SEPTTR in durum wheat in the Maritime zone. However, the intended higher doses are recommended due to the uncertainty of abiotic factors.

Comments of zRMS:

5 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved significant higher effectiveness compared to lower dose rate of 1 l/ha. Higher doses presented moderate level of control after 2 applications, in the early and late assessments. Also similar effect was visible after 1 application. The test product at 1,4 l/ha had mean efficacy of 66,8% from 2 trials. Lower dose of 1,2 l/ha achieved result of 55,8%. Limited number of trials was available for this use but an extrapolation from winter wheat is possible in opinion of zRMS. Taking into account all trial results, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter durum wheat in the MAR zone. Dose rate of 1,4 l/ha may be recommended by high disease pressure.

**Accordance to table 3.2-12, durum wheat has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TRZDU spring – SEPTTR – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat-spring against SEPTTR. This trial was carried out in Germany in 2020.
The first application took place at crop stage BBCH 31 and the second application was done 17 days later, at BBCH 53.

Table 3.2-148: Minimum effective dose of CA3642 against SEPTTR in durum wheat-spring – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha**	**1.2 L/ha**	**1.0 L/ha**
							210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF3	DEU	45	28		PESSEV	10.3a	**0.8b**	**1.5c**	2.6c

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC^b^**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha**	**1.2 L/ha**	**1.0 L/ha**
							210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**150 g AZX/ha + 150 g PTZ/ha**
late					Efficacy TL	10.3 a	~~92.2~~ **92.3** **b**	~~85.4~~ **85.2** **b**	~~74.7~~ 75.2 **b**
Mean efficacy				*1*		*10.3*	~~*92.2*~~ ***92.3***	~~*85.4*~~ ***85.2***	~~*74.7*~~ *75.2*

b UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications, a statistical difference (> 17 % efficacy) was observed between treatments with the highest intended dose rate (1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha) in leaf level 3. Similarly, on the same leaf level, the difference was statistically significant when comparing the lowest intended dose rate (1.2 L/ha) and the reduced dose rate (1.0 L/ha). The efficacy of the lowest intended dose rate was > 10% higher than the efficacy obtained with the reduced dose rate.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in spring durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results of 85,2% and 92,3% after 2 applications. Slight inferior effectiveness has been noted for lower dose rate of 1 l/ha (75,2%). No results after 1 application were available. Limited number of trials was presented and cMSs are kindly asked to consider this use on national level.

TRZDU – SEPTTR – North-East EPPO zone

No trials are available for the North-East EPPO Zone. However, according to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, three additional trials from Germany are presented to justify the minimum effective dose of 1.2-1.4 L/ha CA3642 applied up to two times in durum wheat against SEPTTR. CA3642 was first applied at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2-149: Minimum effective dose of CA3642 against SEPTTR in durum wheat – supporting trials from Germany

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC^b^**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF 1 early	DEU	52	16	1	PESSEV Efficacy	6.8 a -	**2.4 cde** ~~64.7~~ **64.4**	**2.9 c** ~~57.3~~ **56.8**	2.5 cde ~~63.2~~ 63.5
Mean efficacy				*1*		6.8	~~64.7~~ **64.4**	~~57.3~~ **56.8**	~~63.2~~ 63.5
LEAF 1 very late	DEU	76	40	1	PESSEV Efficacy	69.4 a -	**23.3 de** ~~66.4~~ **66.5**	**32.3 cd** **53.5**	22.2 de 68.0
	DEU	70	36	1 TL	PESSEV Efficacy	49.2 - a	**21.9** **55.5** **b**	**11.6** ~~76.4~~ **76.5** **b**	16.7 ~~66.1~~ 66.0 b
Mean efficacy				*2*	*Mean* Min Max	*59.3* 42.9 69.4	***61.0*** **55.5** ~~66.4~~ **66.5**	***65.0*** **53.5** ~~76.4~~ **76.5**	~~*67.1*~~ *67.0* ~~66.1~~ 66.0 68.0

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF2 early	DEU	52	16	1	PESSEV Efficacy	16.2 a	**5.8 e** ~~64.2~~ **64.1**	**7.4 b-e** ~~54.3~~ **54.1**	7.1 cde ~~56.2~~ 56.4
	DEU	50	16	1	PESSEV Efficacy	6.3 a	**3.4 cd** **46.3**	**4.9 bc** ~~22.2~~ **21.6**	4 cd ~~36.5~~ 36.3
Mean efficacy				*2*	*Mean* Min Max	*11.3* 6.3 16.2	***~~55.1~~ 55.2*** **46.3** ~~64.2~~ **64.1**	***~~38.3~~ 37.9*** ~~22.2~~ **21.6** ~~54.3~~ **54.1**	*~~46.3~~ 46.4* ~~36.5~~ 36.3 ~~56.2~~ 56.4
LEAF 2 very late	DEU	70	36	1	PESSEV Efficacy	71.9a -	**55.3ab** **23.1**	**55.7ab** **22.5**	40.9b 43.1
Mean efficacy				1		71.9	**23.1**	**22.5**	43.1
LEAF 3 early	DEU	62	19	1	PESSEV Efficacy	65.7 a -	**31.0 de** ~~52.8~~ **52.9**	**31.4 de** **52.2**	42.6 cd 35.2
	DEU	50	16		PESSEV Efficacy	15.8 a -	**6.3 de** ~~60.1~~ **60.4**	**4.9 de** ~~69.0~~ **69.2**	4.1 e ~~74.1~~ 74.0
Mean efficacy				*2*	*Mean* Min Max	*28.5* ~~4.1~~ 15.8 65.7	***~~49.8~~ 56.7*** ~~36.6~~ **52.9** ~~60.1~~ **60.4**	***~~56.7~~ 60.7*** ~~48.8~~ **52.2** ~~69.0~~ **69.2**	*~~53.5~~ 54.6* 35.2 ~~74.1~~ 74.0
Efficacy after 1 application									
Leaf 2 late	DEU	34	-	1	PESSEV Efficacy	5.8 a -	**3.4 def** ~~41.4~~ **42.4**	**4.9 b** ~~15.5~~ **15.9**	4.0 c ~~31.0~~ 31.7
Mean efficacy						*5.8*	***~~41.4~~ 42.4***	***~~15.5~~ 15.9***	*~~31.0~~ 31.7*
Leaf 4 late	DEU	43	-	1	PESSEV Efficacy TL	6.8 - a	**0.6** ~~91.2~~ **91.1** **b**	**0.3** ~~95.6~~ **95.7** **b**	0.9 ~~86.8~~ 86.5 b
Mean efficacy						*6.8*	***~~91.2~~ 91.1***	***~~95.6~~ 95.7***	*~~86.8~~ 86.5*

In the supporting trials, there were no significant differences observed in terms of efficacy values for the intended dose rates of CA3642 (1.4 L/ha and 1.2 l/ha) compared to the reduced dose rate (1.0 L/ha) over all assessments after two applications.

After one application, there was a statistical difference in which the highest intended dose rate of CA3642 1.4 L/ha (~~41.4~~ 42.4% efficacy) provided higher control than the reduced dose rate (1.0 L/ha) with an efficacy of ~~31~~ 31.7 % on leaf level 2 at a late assessment date. For leaf 4 late, similar values were obtained (non-significantly or numerically different) for the intended dose rate (1.4 L/ha, ~~91.2~~ 91.1 %) compared to the reduced dose rate (1.0 L/ha, ~~86.8~~ 86.5 %).

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter durum wheat in the North-East EPPO climatic zone. 3 efficacy trials conducted in Germany has been included to the general calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved moderate level of control after 2 applications, either in early and late assessments. Lower dose of 1 l/ha was inferior about 10-20% is some trials. Similar effect was visible after 1 application. Limited number of trials was available in the NE zone and an extrapolation from other cereals is not possible. Durum wheat is minor crop in Poland and this species can be registered under art. 51.

TRZDU – SEPTTR – South-East EPPO zone

Three trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat against SEPTTR. The trials were carried out in Romania (1 trial) and Hungary (2 trials) in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 24-28 days later, at BBCH 39-59.

Table 3.2-150: Minimum effective dose of CA3642 against SEPTTR in durum wheat – South-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF1 late	HUN	58	34	1	PESSEV Efficacy	22.1 a -	**3.9 b** **82.4**	**6.7 b** ~~69.7~~ **69.8**	6.9 b ~~68.8~~ 68.6
Mean					*Mean*	*22.1*	***82.4***	*~~69.7~~* ***69.8***	*~~68.8~~ 68.6*
LEAF1 very late	HUN	61	37	1	PESSEV Efficacy	19.4 a -	**1.8 c** ~~90.7~~ **91.0**	**0.9 c** ~~95.4~~ **95.5**	1.1 c ~~94.3~~ 94.2
Mean					*Mean*	*19.4*	*~~90.7~~* ***91.0***	*~~95.4~~* ***95.5***	*~~94.3~~ 94.2*
LEAF2 late	ROU	60	32	1	PESSEV Efficacy	6.87 a -	**0.06 b** ~~99.1~~ **99.2**	**0.07 b** **99.0**	0.11 b ~~98.4~~ 98.5
Mean					*Mean*	*6.87*	*~~99.1~~* ***99.2***	***99.0***	*~~98.4~~ 98.5*

[b] UTC: % infestation in untreated control at assessment date

No statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rates. In one assessment (leaf level 1 late), the performance of the higher intended dose rate (1.4 L/ha) was more than 10% higher compared to the reduced dose rate (1.0 L/ha). To ensure sufficient and reliable control of SEPTTR, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.2-1.4 L/ha.

Comments of zRMS:

3 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter durum wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness with results of >90% after 2 applications, in the late assessments. Similar effect was visible for lower dose of 1 l/ha but superior result about 10% between 1,4 and 1 l/ha has been noted in one trial. Limited number of trials was available but an extrapolation from winter wheat is possible for this crop in opinion of zRMS. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter durum wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at high disease pressure.

**Accordance to table 3.2-12, durum wheat has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Durum wheat (TRZDU) – Yellow rust of rye (PUCCSI - *Puccinia striiformis f. sp.* tritici)

A field trial was established in 2021 in order to determine the minimum effective dose for the control of the PUCCSI in durum wheat. The trial from the Maritime EPPO zone was carried out in Germany (1 trial).
CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

A summary of the dose response results grouped by EPPO zone are provided in Table 3.2-151 - Table 3.2-152.

TRZDU – PUCCSI – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat against PUCCSI. The trial was carried

out in Germany 2021.
The first application took place at crop stage BBCH 31 and the second application was done 34 days later, at BBCH 49.

Table 3.2-151: Minimum effective dose of CA3642 against PUCCSI in durum wheat– Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
Leaf 2 early	DEU	50	16	1	PESSEV Efficacy	4.5 ab -	**2.5 b** ~~44.4~~ **44.2**	**2.6 b** ~~42.2~~ **42.5**	2.8 b ~~37.8~~ 38.4
Mean efficacy						4.5	~~44.4~~ **44.2**	~~42.2~~ **42.5**	~~37.8~~ 38.4
Leaf 3 early	DEU	50	16	1	PESSEV Efficacy	5.6 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy						5.6	**100.0**	**100.0**	100.0
Efficacy after 1 application									
Leaf 2 early	DEU	34	34	1	PESSEV Efficacy	4.8 b -	**3.4 c** **29.2**	**3.5 c** **27.1**	3.6 c 25.0
Mean efficacy							**29.2**	**27.1**	25.0
Leaf 3 early	DEU	34	34	1	PESSEV Efficacy	5.6 a -	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
Mean efficacy							**100.0**	**100.0**	100.0

[b] UTC: % infestation in untreated control at assessment date

Overall, quite uniform efficacy was achieved with the intended dose rates (1.2-1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha). This was observed under a mostly low to moderate disease pressure. However, to ensure sufficient and reliable control of PUCCSI, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.2-1.4 L/ha.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Puccinia striiformis* f.sp. *tritici* in winter durum wheat in the Maritime EPPO climatic zone. CA3642 at 1-1,4 l/ha achieved full effectiveness on L3 after 1-2 applications in the early assessment in 1 trial. Second trial presented insufficient results (25-44%), after either 1 and 2 applications. Due to limited number of trials, the cMSs are kindly asked to consider this use on national level.

TRZDU – PUCCSI – North-East EPPO zone

No trials are available for the North-East EPPO Zone. However, according to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Germany are presented to justify the minimum effective dose of 1.2-1.4 L/ha CA3642 applied up to two times in durum wheat against PUCCSI. CA3642 was first applied at crop stage BBCH 31and the second application was done 34 days later, at BBCH 49.

Table 3.2-152: Minimum effective dose of CA3642 against PUCCSI in durum wheat – supporting trials from Germany

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
Leaf 2 early	DEU	50	16	1	PESSEV Efficacy	4.5 ab -	**2.5 b** ~~44.4~~ **44.2**	**2.6 b** ~~42.2~~ **42.5**	2.8 b ~~37.8~~ 38.4
Mean efficacy						4.5	~~44.4~~ **44.2**	~~42.2~~ **42.5**	~~37.8~~ 38.4
Leaf 3 early	DEU	50	16	1	PESSEV Efficacy	5.6 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy						5.6	**100.0**	**100.0**	100.0
Efficacy after 1 application									
Leaf 2 early	DEU	34	34	1	PESSEV Efficacy	4.8 b -	**3.4 c** **29.2**	**3.5 c** **27.1**	3.6 c 25.0
Mean efficacy							**29.2**	**27.1**	25.0
Leaf 3 early	DEU	34	34	1	PESSEV Efficacy	5.6 a -	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
Mean efficacy							**100.0**	**100.0**	100.0

In the supporting trials from Germany, quite uniform efficacy was achieved with the intended dose rates (1.2-1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha). This was observed under a mostly low to moderate disease pressure. However, to ensure sufficient and reliable control of PUCCSI, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.2-1.4 L/ha.

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia striiformis* f.sp. *tritici* in winter durum wheat in the North-East EPPO climatic zone. 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1-1,4 l/ha achieved full effectiveness on L3 after 1-2 applications in the early assessment in 1 trial. Second trial presented insufficient results (25-44%), after either 1 and 2 applications. However, limited number of trials was available and an extrapolation from other cereals is not possible. Durum wheat is minor crop in Poland and the registration under art. 51 can be used for this species.

TRZDU – PUCCSI – South-East EPPO zone

No data is available in support of the minimum effective dose for control of yellow rust (PUCCSI - *Puccinia striiformis f. sp. tritici*) in South-East EPPO Zone. However, the species *Puccinia striiformis f. sp. tritici is* also the pathogen agent that causes yellow rust on wheat, rye and triticale. It therefore seems reasonable from an agronomic perspective to assume the same rate effects of CA3642 applied at 1.2 - 1.4 L/ha on winter wheat from the robust dataset proposed for the closely related crop durum wheat. Furthermore, existing authorisations for prothioconazole and azoxystrobin products also indicates that performance is comparable between the pathogen/crop pairs. The dataset presented in winter wheat (TRZAW / PUCCSI - *Puccinia striiformis f. sp. tritici*) – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved.

Comments of zRMS:

No trials have been submitted to determine minimum effective dose to control of *Puccinia striiformis* f.sp. *tritici* in winter durum wheat in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Durum wheat (TRZDU) *Triticum durum* – (ERYSGT - *Blumeria graminis* f. sp. *tritici*)

Four field trials were established in 2020 in order to determine the minimum effective dose for the control of the ERYSGT in durum wheat. Trials were carried out in the Maritime EPPO zone in Germany (2 trials) and in the South-East EPPO zone in Hungary (2 trials).
In addition, 1 trial is available from the Maritime zone (Germany) on spring-sown durum wheat. The data from this trial is also presented within this section, but in separate tables.

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*. Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-153 to Table 3.2-155.

TRZDU – ERYSGT – Maritime EPPO zone

Two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat against ERYSGT. Trials were carried out in Germany in 2019 and 2020.

The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2-153: Minimum effective dose of CA3642 against ERYSGT in durum wheat – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
Leaf 1 early	DEU	50	16	1	PESSEV Efficacy	5.5 a -	**0.0 d** **100.0**	**1.1 c** ~~80.0~~ **79.9**	0.0 d 100.0
Mean efficacy						*5.5*	***100.0***	~~*80.0*~~ ***79.9***	*100.0*
Leaf 1 very late	DEU	70	36	1	PESSEV Efficacy	5.9 a -	**0.0 d** **100.0**	**1.1 cd** ~~81.4~~ **81.3**	0.0 d 100.0
Mean efficacy						*5.9*	***100.0***	~~*81.4*~~ ***81.3***	*100.0*
~~Leaf 2 early~~	~~DEU~~	~~50~~	~~16~~	~~1~~	~~PESSEV Efficacy~~	~~6.3 a~~	~~**3.4 cd** **46.0**~~	~~**4.9 bc** **22.2**~~	~~4.0 cd 36.5~~
~~*Mean efficacy*~~						~~*6,3*~~	~~***46,0***~~	~~***22,2***~~	~~*36,5*~~
Leaf 2 very late	DEU	70	36	1	PESSEV Efficacy	26.2 c -	**7.8 d** ~~70.2~~ **70.3**	**7.8 d** ~~70.2~~ **70.4**	8.4 d ~~67.9~~ 68.1
Mean efficacy						*26.2*	~~*70.2*~~ ***70.3***	~~*70.2*~~ ***70.4***	~~*67.9*~~ *68.1*
Leaf 3 early	DEU	50	16	1	PESSEV Efficacy	50.4 b -	**32.1 de** **36.3**	**24.7 fg** **51.0**	21.3 g ~~57.7~~ 57.9
Mean efficacy						*50.4*	***36.3***	***51.0***	~~*57.7*~~ *57.9*
Efficacy after 1 application									
Leaf 3 late	DEU	34		1 TA	PESSEV Efficacy	4.0 - b	**3.0** ~~25.0~~ **24.1** **cd**	**3.1** ~~22.5~~ **21.9** **cd**	3.1 ~~22.5~~ 22.3 cd
Mean efficacy						*4.0*	~~*25.0*~~ ***24.1***	~~*22.5*~~ ***21.9***	~~*22.5*~~ *22.3*
Leaf 4 very late	DEU	43		1	PESSEV Efficacy	7.4 a -	**3.7 c** ~~50.0~~ **50.1**	**3.6 c** ~~51.4~~ **51.8**	4.4 bc ~~40.5~~ 40.8
Mean efficacy						*7.4*	~~*50.0*~~ ***50.1***	~~*51.4*~~ ***51.8***	~~*40.5*~~ *40.8*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

For leaf 1, at high dose (1.4 L/ha) and at reduced dose (1.0 L/ha) efficacy values were numerically higher than median dose. For leaf 2 similar values were obtained for all doses and early and late assessment dates. For leaf 3, an opposite trend was observed with best performance at lowest dose (1.0 L/ha). As there is not a clear trend, no reliable conclusion can be drawn from this data.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* f.sp. *tritici* in winter durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,4 l/ha and 1 l/ha achieved full effectiveness on L1 after 2 applications, either in the early and late assessments. Significant inferior results were observed on L2 and L3. Low level of control was visible after 1 application in 1 out of 2 trials with results of 50,1-51,8% at 1,4 l/ha and 1,2 l/ha, respectively. Limited number of trials was available in MAR zone and cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, durum wheat has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TRZDU spring – ERYSGT – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat-spring against ERYSGT. This trial was carried out in Germany in 2020.
The first application took place at crop stage BBCH 31 and the second application was done 17 days later, at BBCH 53.

Table 3.2-154: Minimum effective dose of CA3642 against ERYSGT in durum wheat-spring – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**^{b}	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	DEU	56	39		PESSEV Efficacy	6.9a 6.9	0.3b ~~95.7~~ 96.4	0.8b ~~88.4~~ 87.9	1.6b ~~76.8~~ 77.3
Mean efficacy				*1*		*6.9*	*~~95.7~~ 96.4*	*~~88.4~~ 87.9*	*~~76.8~~ 77.3*
LEAF2 very late	DEU	56	39		PESSEV Efficacy	9.1a 9.1	0.4b 95.6	1.1b ~~87.9~~ 88.1	1.7b 81.3
Mean efficacy				*1*		*9.1*	*95.6*	*~~87.9~~ 88.1*	*81.3*
LEAF3 early	DEU	31	14		PESSEV Efficacy	4.9a 4.9	0.0b 100	0.4b ~~91.8~~ 91.4	0.4b ~~91.8~~ 92.1
Mean efficacy				*1*		*4.9*	*100*	*~~91.8~~ 91.4*	*~~91.8~~ 92.1*
LEAF3 late	DEU	45	28	TA	PESSEV Efficacy	7.3a 7.3 a	0.0b 100 b	0.5b ~~93.1~~ 93.5 b	0.8b ~~89~~ 88.8 b
Mean efficacy				*1*		*7.3*	*100*	*~~93.1~~ 93.5*	*~~89~~ 88.8*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Albeit statistically not significant, a numerical dose response was observed between treatments with the highest intended dose rate (1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha) with efficacy values of 8 - 19 % higher. The lower intended dose rate (1.2 L/ha) showed higher (4 - 12 % difference) efficacy than the reduced dose rate at leaf level 1, 2 and 3. Only at leaf level 3 early assessment a comparable efficacy was observed at the lower intended rate (1.2 L/ha) and the reduced tested rate (1.0 L/ha).

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Blumeria graminis* f.sp. *tritici* in spring durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high results of 87,9-100% after 2 applications, either in the early and late assessments. Lower dose of 1 l/ha presented inferior effectiveness with difference of 8-19% compared to the dose rate of 1,4 l/ha. Limited number of trials was available in the MAR zone and cMSs are kindly asked to consider this use on national level.

TRZDU – ERYSGT – South-East EPPO zone

Two trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat against ERYSGT. The trials were carried out in Hungary in 2019. The first application took place at crop stage BBCH 31 and the second application was done 24 days later, at BBCH 49.

Table 3.2-155: Minimum effective dose of CA3642 against ERYSGT in durum wheat – South-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
Leaf 2 early	HUN	39	15	1	PESSEV Efficacy	23.0 a -	**5.2 bc** ~~77.4~~ **77.6**	**6.3 bc** ~~72.6~~ **72.7**	6.1 bc ~~73.5~~ 73.4
	HUN	39	15	1	PESSEV Efficacy	18.7 a -	**3.1 d** ~~83.4~~ **83.3**	**3.7 cd** ~~80.2~~ **80.3**	4.9 c ~~73.8~~ 73.9
Mean efficacy				*2*	*Mean* Min Max	*20.9* 18.7 23.0	~~*80.4*~~ ***80.5*** ~~77.4~~ **77.6** ~~83.4~~ **83.3**	~~*76.4*~~ ***76.5*** ~~72.6~~ **72.7** ~~80.2~~ **80.3**	~~*73.6*~~ *73.7* ~~73.5~~ 73.4 ~~73.8~~ 73.9
Leaf 3 early	HUN	39	15	1	PESSEV Efficacy	49.5 a -	**15.7 c** **68.3**	**16.7 c** **66.3**	18.3 c ~~63.0~~ 63.1
	HUN	39	15	1	PESSEV Efficacy	54.8 a -	**11.9 e** **78.3**	**23.7 d** ~~56.8~~ **56.7**	33.3 c ~~39.2~~ 39.3
Mean efficacy				*2*	*Mean* Min Max	*52.2* 49.5 54.8	***73.3*** **68.3** **78.3**	***61.5*** ~~56.8~~ **56.7** **66.3**	~~*51.1*~~ *51.2* ~~39.2~~ 39.3 ~~63.0~~ 63.1
Efficacy after 1 application									
Leaf 3 late	HUN	21	21	1	PESSEV Efficacy	16.4 a -	**5.1 c** ~~68.9~~ **69.1**	**6.5 bc** ~~60.4~~ **60.2**	8.2 bc ~~50.0~~ 50.3
Mean efficacy						*16.4*	~~*68.9*~~ ***69.1***	~~*60.4*~~ ***60.2***	~~*50.0*~~ *50.3*
Leaf 4 late	HUN	24	24	1	PESSEV Efficacy	9.6 a -	**1.5 cd** ~~84.4~~ **84.5**	**2.8 bcd** ~~70.8~~ **71.3**	3.3 bc ~~65.6~~ 65.8
	HUN	21	21	1	PESSEV Efficacy	39.2 a -	**10.8 d** ~~72.4~~ **72.6**	**14.9 cd** ~~62.0~~ **61.9**	16.7 bcd 57.4
Mean efficacy				*2*	*Mean* Min Max	*24.4* 9.6 39.2	~~*78.4*~~ ***78.6*** ~~72.4~~ **72.6** ~~84.4~~ **84.5**	~~*66.4*~~ ***66.6*** ~~62.0~~ **61.9** ~~70.8~~ **71.3**	~~*61.5*~~ *61.6* 57.4 ~~65.6~~ 65.8

Efficacy was assessed in two trials on leaf level 2 and leaf level 3 early (15 DA-B) after two applications. For one trial the efficacy against ERYSGT at the highest dose (1.4 L/ha of CA3642) was significantly higher (difference 9.6 %) compared to the reduced dose rate (1.0 L/ha CA3642) on leaf level 2. For the same trial a clear and statistically significant dose response was observed for all tested doses (1.4 L/ha, 1.2 L/ha and 1.0 L/ha) for CA3642 on leaf 3. No significant differences were found in the other trial neither on leaf 2 early nor on leaf 3 early.
Overall, the proposed doses presented a higher control compared to the reduced dose rate.

After one application, the values of efficacy against ERYSGT in the intended dose rates and the reduced dose rate, had non-statistically significant values. However, in both trials, the highest dose rate (1.4 L/ha) presented numerical higher efficacy values of more than 18 % compared to the reduced dose rate (1.0 L/ha); the lower intended dose rate (1.2 L/ha) provided a slightly higher control with a difference ranging from 4.6 – 10.4 %.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* f.sp. *tritici* in winter durum wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate effectiveness with the mean results of 61,5-80,5% after 2 applications, in the early assessments on L2 and L3. Also after 1 application, similar effect was visible for the higher doses. The dose rate of 1 l/ha was inferior compared to 1,4 l/ha with difference of 10-20%. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, durum wheat has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Durum wheat (TRZDU) – Green leaf area

A total of eight trials were carried out between 2019 and 2021 to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat in the Maritime (5 trials), and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in France (2 trials) and Germany (3 trials).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials) and Romania (1 trials).

Data are generally grouped by EPPO zone.

TRZDU – Green leaf area – Maritime EPPO zone

Five trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat, assessed in terms of green leaf area. Trials were carried out in France (2 trials), and Germany (3 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-21 days later, at BBCH 45-55.

Table 3.2-156: Minimum effective dose of CA3642 assessed as green leaf area in durum wheat – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PLANT	FRA	45	31		GRNARE	55.0 a	**62.5 a**	75.0 a	55.0 a
					cf UTC	100.0	**113.6**	136.4	100.0
	FRA	62	42		GRNARE	68.8 a	**68.8 a**	71.3 a	71.3 a
					cf UTC	100.0	**100.0**	103.6	103.6
	DEU	70	36		GRNARE	16.3 d	**66.3 ab**	66.3 ab	57.5 bc
					cf UTC	100.0	**406.7**	406.7	352.8

	DEU	76	33		GRNARE cf UTC	5.0 d 100.0	**13.8 a** **276.0**	11.3 ab 226.0	6.3 cd 126.0
	DEU	76	40		GRNARE cf UTC	2.0 f 100.0	**16.5 abc** **825.0**	15.3 bcd 765.0	13.5 cd 675.0
Mean Efficacy				4 5	*Mean* Min Max	*29.4* 2.0 68.8	***344.3*** **100.0** **825.0**	*327.5* 103.6 765.0	*271.5* 100.0 675.0

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed on the whole plant at 31-42 DA-B. In two trials SEPTTR and ERYSGT were present and in one of those trials also PUCCSI was present. In three trials just SEPTTR was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 3.6-725 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area up to 575 % compared to the control. In one trial the GLA was significantly higher from applications at the proposed dose rates compared to the reduced dose rate.
The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha as well as by the reduced dose rate (1.0 L/ha) was statistically significant compared to the untreated control in three trials.
The findings support the intention of the applicant to register a dose range, which would give the farmer the flexibility to react with adapted dose rates to different disease pressures.

Comments of zRMS:

The mean green leaf on whole plant area increased by 244,3% after 2 applications of CA3642 at 1,4 l/ha, 227,5% at 1,2 l/ha and 171,5% at 1 l/ha in 5 efficacy trials. Slight statistical differences between dose rates can be observed in 3 trials in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

TRZDU – Green leaf area – South-East EPPO zone

Three trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat, assessed in terms of green leaf area. Trials were carried out in Hungary (2 trials) and Romania (1 trial) between 2019 and 2020.
The first application took place at crop stage BBCH 31 and the second application was done 24-28 days later, at BBCH 49-59.

Table 3.2-157: Minimum effective dose of CA3642 assessed as green leaf area in durum wheat – South-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
LEAF1	ROU	60	32		GRNARE cf UTC	17.5 e 100.0	**60.0 a** **342.9**	60.0 a 342.9	55.0 b 314.3
Mean Efficacy				*1*	*Mean*	*17.5*	***342.9***	*342.9*	*314.3*
LEAF2	ROU	60	32		GRNARE cf UTC	1.3 e 100.0	**29.3 a** **2253.8**	28.8 a 2215.4	22.0 c 1692.3
Mean Efficacy				*1*	*Mean*	*1.3*	***2253.8***	*2215.4*	*1692.3*
PLANT	HUN	58	34		GRNARE cf UTC	40.0 c 100.0	**70.0 a** **175.0**	70.0 a 175.0	67.5 a 168.8
	HUN	61	37		GRNARE	30.0 c	**70.0 a**	70.0 a	70.0 a

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					cf UTC	100.0	**233.3**	233.3	233.3
Mean Efficacy				2	*Mean*	*35.0*	***204.2***	*204.2*	*201.0*
					Min	*30.0*	**175.0**	175.0	168.8
					Max	*40.0*	**233.3**	233.3	233.3

UTC: % green leaf area in untreated control at assessment date

Efficacy in terms of green leaf area was assessed in one trial at 32 DA-B (in leaf 1 and 2 levels) and in two trials on the whole plant at 34-37 DA-B. In two trials SEPTTR and ERYSGT were present. In one trial just a SEPTTR was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 75-133 % on the whole plant compared to the untreated control. This increase was statistically significant compared to untreated control in all trials. Two applications of the reduced dose rate 1.0 L/ha increased the mean green leaf area by 69 – 133 %.

The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha on leaf level 1 and 2 was statistically significant compared to the untreated control and compared to the reduced rate 1.0 L/ha of CA3642.

Comments of zRMS:

The mean green leaf on whole plant area increased by 104,2% after 2 applications of CA3642 at 1,2-1,4 l/ha and 101% at 1 l/ha in 2 efficacy trials. Very high results were observed in case of leaf 2. An increase was 2153,8% at 1,4 l/ha, 2115,4% at 1,2 l/ha and 1592,3% at 1 l/ha. Slight statistical differences between dose rates can be observed in 2 trials in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

Durum Wheat - Summary and conclusions on the minimum effective dose

On durum wheat, three foliar diseases were assessed in 13 trials across three EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2, 3 and 4. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

Overall, across the EPPO zones and all diseases, similar disease control was achieved at the dose rates tested. In some occasions the rates of 1.2-1.4 L/ha gave significantly better control compared to the rate of 1.0 L/ha. Due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate may be deemed more appropriate and should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In addition, the data demonstrates overall similar effects for the targeted diseases regardless of EPPO zone. Similarly, the same dose rate trends were observed for improving green leaf area in situations of infection from a single pathogen or in cases of disease complexes. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

In this dossier data presented for minimum effective dose is primarily from assessments where 2 applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved with 1.2-1.4 L/. According to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications.

Data from winter wheat is also considered supportive for the same pathogens affecting durum wheat.

Therefore, a minimum effective dose rate of 1.2-1.4 L/ha is proposed for CA3642 on wheat durum in each of the three EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control a range of foliar diseases on wheat durum.

Triticale (TTLWI)

A total of 14 trials were carried out recently on winter triticale in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.2-1.4 L/ha CA3642 for the control of ERYSGR/ERYSGT, RHYNSE and SEPTSE/SEPTTR. Results from a total of 14 valid trials are presented in this chapter.
In one trial, infestation with PUCCST was very low. Thus, no results for the evaluation of PUCCST in TTLWI were available.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Comments of zRMS:

All efficacy trials were carried out only on winter triticale. No trials on spring triticale have been submitted. The cMSs are kindly asked to consider this crop on national level. This species cannot be accepted in Poland.

Winter triticale (TTLWI) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

A total of 12 trials were carried out between 2019 and 2020 in order to determine the minimum effective dose for the control of the SEPTTR in winter triticale in the Maritime (6 trials), North-East (2 trials) and South-East (4 trials) EPPO zones. CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Trials from the Maritime EPPO zone were carried out in Germany (5 trials) and France (1 trial).
Trials from the North-East EPPO zone were carried out in Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Romania (3 trials) and Hungary (1 trial).

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Summaries of the dose response results grouped by EPPO zone are provided in
Table 3.2-154, Table 3.2-145 and
Table 3.2-150.

TTLWI – SEPTTR – Maritime EPPO zone

A total of six trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against SEPTTR. The trials were carried out in France and Germany in 2019 and 2020.
The first application took place at crop stage BBCH 30 - 37 and the second application was done 15 - 32 days later, at BBCH 39 – 51.

In Maritime zone, for one trial only, a clear dose response was assessed (Leaf 3).
For most of the other trials, at least the two target dose rates of 1.2-1.4 L/ha of CA3642 show better performance than the reduced dose rate. One trial shows dose response for two leaf stages, but on low efficacy level only.

Table 3.2-158: Minimum effective dose of CA3642 against SEPTTR in winter triticale – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PESSEV									
Leaf 1 very late	DEU	55	35		PESSEV Efficacy	8.8 a -	**5.2 b** ~~40.9~~ **41.2**	**4.8 b** ~~45.5~~ **45.1**	4.7 b ~~46.6~~ 46.9
Mean efficacy				1		*8.8*	***~~40.9~~ 41.2***	***~~45.5~~ 45.1***	*~~46.6~~ 46.9*
Leaf 2 early	DEU	45	15		PESSEV Efficacy	5.2 a -	**2.1 b** ~~59.6~~ **58.7**	**1.9 b** ~~63.5~~ **63.3**	2.6 b ~~50.0~~ 49.8
Mean efficacy				1		*5.2*	***~~59.6~~ 58.7***	***~~63.5~~ 63.3***	*~~50.0~~ 49.8*
Leaf 2 late	DEU	61	31		PESSEV Efficacy	5.6 a -	**2.7 b** ~~51.8~~ **52.6**	**2.2 b** ~~60.7~~ **61.7**	3.0 b ~~46.4~~ 46.3
Mean efficacy				1		*5.6*	***~~51.8~~ 52.6***	***~~60.7~~ 61.7***	*~~46.4~~ 46.3*
Leaf 2 very late	DEU	61	42		PESSEV Efficacy	8.7 a -	**2.4 c** ~~72.4~~ **72.1**	**1.2 c** ~~86.2~~ **86.7**	2.2 c ~~74.7~~ 74.4
Leaf 2 very late	DEU	55	35		PESSEV Efficacy	18.1 a -	**13.4 ab** ~~26.0~~ **25.7**	**11.4 b** ~~37.0~~ **37.2**	13.2 ab 27.1
Leaf 2 very late	FRA	52	37		PESSEV Efficacy	10.4 a -	**3.0 b** ~~71.2~~ **71.3**	**2.9 b** ~~72.1~~ **72.5**	2.9 b ~~72.1~~ 71.9
Mean efficacy				3	*Mean Min Max*	***12.4 8.7 18.1***	***~~56.5~~ 56.4 ~~26.0~~ 25.7 ~~72.4~~ 72.1***	***~~65.1~~ 65.5 ~~37.0~~ 37.2 ~~86.2~~ 86.7***	*~~58.0~~ 57.8 27.1 ~~74.7~~ 74.4*
Leaf 3 very late	DEU	76	45		PESSEV Efficacy	5.3 a -	**0.0 d 100.0**	**0.3 cd** ~~94.3~~ **94.2**	0.8 cd ~~84.9~~ 85.3
Mean efficacy				1		*5.3*	***100.0***	***94.3***	*84.9*
PESINC									
Leaf 1 late	DEU	59	27		PESINC Efficacy	38.8 a -	**0.0 b 100**	**0.0 b 100**	0.0 b 100
Mean efficacy				1		*38.8*	***100***	***100***	*100*
Leaf 2 late	DEU	59	27		PESINC Efficacy	71.3 a -	**23.8 bc 66.6**	**23.8 bc 66.6**	27.5 b 61.4
Mean efficacy				1		*71.3*	***66.6***	***66.6***	*61.4*

UTC: % infestation in untreated control at assessment date

Comments of zRMS:

6 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter triticale in the Maritime EPPO climatic zone. CA3642 at 1-1,4 l/ha presented similar efficacy on moderate level after 2 applications. No significant differences between doses were observed, either in the early and late assessments. Only in 1 trials a clear dose response was assessed (Leaf 3). Slight superior results was visible for the dose rates of 1,2-1,4 l/ha. Taking into account low disease pressure in submitted trials, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter triticale. However, the dose rate of 1,4 l/ha may be

recommended at higher disease pressure.

TTLWI – SEPTTR – North-East EPPO zone

Two trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against SEPTTR. The trials were carried out in Poland in 2020. The first application took place at crop stage BBCH 32 - 37 and the second application was done 14 - 15 days later, at BBCH 39 – 51.

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, A total of five trials from the Maritime EPPO zone (Germany) are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against SEPTTR. The trials were carried out in Germany in 2019 and 2020.
The first application took place at crop stage BBCH 30 - 37 and the second application was done 15 - 32 days later, at BBCH 39 – 51.

Efficacy across five of six assessments from North-East EPPO zone (Table 3.2-145) reveals clear dose response, with a difference of 24% between highest and lowest dose rate. The dose response between 1.4 L/ha and 1.2 L/ha and 1.0 L/ha was statistically significant in 3 assessments out of 6 and between 1.4 L/ha and 1.0 L/ha was significant in 4 assessments. In one assessment Leaf 2 late no statistically significant difference was observed, but numerically difference between 1.4 L/ha vs. 1.0 L/ha and 1.2 L/ha vs. 1.0 L/ha. A numerically dose response was observed for 1 trial in Leaf 3 early.
In one trial only, the performance of all dose rates was equivalent.

Table 3.2-159: Minimum effective dose of CA3642 against SEPTTR in winter triticale – North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha + 150 g PTZ/ha**
PESSEV									
Leaf 1 very late	POL	75	41		PES-SEV Efficacy	11.6 a -	**2.5 f** ~~78.4~~ **78.8**	**3.6 de** ~~69.0~~ **69.4**	4.6 c ~~60.3~~ 60.2
Mean efficacy				*1*		*11.6*	~~*78.4*~~ ***78.8***	~~*69.0*~~ ***69.4***	~~*60.3*~~ *60.2*
Leaf 2 early	POL	49	15		PES-SEV Efficacy	5.5 a -	**1.3 d** ~~76.4~~ **76.9**	**2.1 c** ~~61.8~~ **62.7**	2.8 b ~~49.1~~ 49.8
Mean efficacy				*1*		*5.5*	~~*76.4*~~ ***76.9***	~~*61.8*~~ ***62.7***	~~*49.1*~~ *49.8*
Leaf 2 late	POL	81	34		PES-SEV Efficacy	6.7 a -	**1.7 b** ~~74.6~~ **75.0**	**1.5 b** **77.6**	3.3 b ~~50.7~~ 51.4
Mean efficacy				*1*		*6.7*	~~*74.6*~~ ***75.0***	***77.6***	*50.7*
Leaf 2 very late	POL	75	41		PES-SEV Efficacy	25.9 a -	**7.5 e** ~~71.0~~ **71.1**	**9.8 d** ~~62.2~~ **62.4**	12.1 c 53.3
Mean efficacy				*1*		*25.9*	~~*71.0*~~ ***71.1***	~~*62.2*~~ ***62.4***	*53.3*
Leaf 3 early	POL	49	15		PES-SEV Effi-	12.8 a -	**3.6 e** **71.9**	**5.5 cd** ~~57.0~~ **56.7**	6.6 bc ~~48.4~~ 48.5

					cacy				
	POL	61	14		PES-SEV Effi-cacy	6.7 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*2*	*Mean* *Min* *Max*	*9.8* *6.7* *12.8*	***85.9*** ***71.9*** ***100.0***	*~~78.5~~* ***78.4*** *~~57.0~~* ***56.7*** ***100.0***	*~~74.2~~ 74.3* *~~48.4~~ 48.5* *100.0*

UTC: % infestation in untreated control at assessment date

Table 3.2-160: Minimum effective dose of CA3642 against SEPTTR in winter triticale – supporting trials from Maritime EPPO zone (Germany)

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PESSEV									
Leaf 1 very late	DEU	55	35		PES-SEV Effi-cacy	8.8 a -	**5.2 b** ~~40.9~~ **41.2**	**4.8 b** ~~45.5~~ **45.1**	4.7 b ~~46.6~~ 46.9
Mean efficacy				1		*8.8*	*~~40.9~~* ***41.2***	*~~45.5~~* ***45.1***	*46.6 46.9*
Leaf 2 early	DEU	45	15		PES-SEV Effi-cacy	5.2 a -	**2.1 b** ~~59.6~~ **58.7**	**1.9 b** ~~63.5~~ **63.3**	2.6 b ~~50.0~~ 49.8
Mean efficacy				1		*5.2*	*~~59.6~~* ***58.7***	*~~63.5~~* ***63.3***	*~~50.0~~ 49.8*
Leaf 2 late	DEU	61	31		PES-SEV Effi-cacy	5.6 a -	**2.7 b** ~~51.8~~ **52.6**	**2.2 b** ~~60.7~~ **61.7**	3.0 b ~~46.4~~ 46.3
Mean efficacy				1		*5.6*	*~~51.8~~* ***52.6***	*~~60.7~~* ***61.7***	*~~46.4~~ 46.3*
Leaf 2 very late	DEU	61	42		PES-SEV Effi-cacy	8.7 a -	**2.4 c** ~~72.4~~ **72.1**	**1.2 c** ~~86.2~~ **86.7**	2.2 c ~~74.7~~ 74.4
Leaf 2 very late	DEU	55	35		PES-SEV Effi-cacy	18.1 a -	**13.4 ab** ~~26.0~~ **25.7**	**11.4 b** ~~37.0~~ **37.2**	13.2 ab 27.1
Mean efficacy				2	*Mean* *Min* *Max*	***13.4*** ***8.7*** ***18.1***	*~~49.2~~* ***48.9*** *~~26.0~~* ***25.7*** *~~72.4~~* ***72.1***	*~~61.6~~* ***62.0*** *~~37.0~~* ***37.2*** *~~86.2~~* ***86.7***	*~~50.9~~ 50.8* *27.1* *~~74.7~~ 74.4*
Leaf 3 very late	DEU	76	45		PES-SEV Effi-cacy	5.3 a -	**0.0 d** **100.0**	**0.3 cd** ~~94.3~~ **94.2**	0.8 cd ~~84.9~~ 85.3
Mean efficacy				1		5.3	***100.0***	*~~94.3~~* ***94.2***	*~~84.9~~ 85.3*
PESINC									
Leaf 1 late	DEU	59	27		PESINC Effi-cacy	38.8 a -	**0.0 b** **100**	**0.0 b** **100**	0.0 b 100
Mean efficacy				1		*38.8*	***100***	***100***	*100*
Leaf 2 late	DEU	59	27		PESINC Effi-cacy	71.3 a -	**23.8 bc** **66.6**	**23.8 bc** **66.6**	27.5 b 61.4
Mean efficacy				1		*71.3*	***66.6***	***66.6***	*61.4*

UTC: % infestation in untreated control at assessment date

Table 3.2-161: Minimum effective dose of CA3642 against SEPTTR in winter triticale – summary North-East and supporting trials

Leaf level assm. timing	ID	Country	DA-A	DA-B	No of tri-als	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
						Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
PESSEV										
Leaf 1 very late		DEU	55	35		PES-SEV	8.8 a	**5.2 b**	**4.8 b**	4.7 b
						Effi-cacy	-	~~40.9~~ **41.2**	~~45.5~~ **45.1**	~~46.6~~ 46.9
		POL	75	41		PES-SEV	11.6 a	**2.5 f**	**3.6 de**	4.6 c
						Effi-cacy	-	~~78.4~~ **78.8**	~~69.0~~ **69.4**	~~60.3~~ 60.2
Mean efficacy					*2*	*Mean*	*10.2*	~~*59.7*~~ ***60.0***	***57.3***	~~*53.5*~~ *53.6*
						Min	*8.8*	~~*40.9*~~ ***41.2***	~~*45.5*~~ ***45.1***	~~*46.6*~~ *46.9*
						Max	*11.6*	~~*78.4*~~ ***78.8***	~~*69.0*~~ ***69.4***	~~*60.3*~~ *60.2*
Leaf 2 early		POL	49	15		PES-SEV	5.5 a	**1.3 d**	**2.1 c**	2.8 b
						Effi-cacy	-	~~76.4~~ **76.9**	~~61.8~~ **62.7**	~~49.1~~ 49.8
		DEU	45	15		PES-SEV	5.2 a	**2.1 b**	**1.9 b**	2.6 b
						Effi-cacy	-	~~59.6~~ **58.7**	~~63.5~~ **63.3**	~~50.0~~ 49.8
Mean efficacy					*2*	*Mean*	*5.4*	~~*68.0*~~ ***67.8***	~~*62.7*~~ ***63.0***	~~*49.6*~~ *49.8*
						Min	*5.2*	~~*59.6*~~ ***58.7***	~~*61.8*~~ ***62.7***	~~*49.1*~~ *49.8*
						Max	*5.5*	~~*76.4*~~ ***76.9***	~~*63.5*~~ ***63.3***	~~*50.0*~~ *49.8*
Leaf 2 late		DEU	61	31		PES-SEV	5.6 a	**2.7 b**	**2.2 b**	3.0 b
						Effi-cacy	-	~~51.8~~ **52.6**	~~60.7~~ **61.7**	~~46.4~~ 46.3
		POL	81	34		PES-SEV	6.7 a	**1.7 b**	**1.5 b**	3.3 b
						Effi-cacy	-	~~74.6~~ **75.0**	**77.6**	~~50.7~~ 51.4
Mean efficacy					*2*	*Mean*	*6.2*	~~*63.2*~~ ***63.8***	~~*69.2*~~ ***69.7***	~~*48.6*~~ *48.9*
						Min	*5.6*	~~*51.8*~~ ***52.6***	~~*60.7*~~ ***61.7***	~~*46.4*~~ *46.3*
						Max	*6.7*	~~*74.6*~~ ***75.0***	***77.6***	~~*50.7*~~ *51.4*
Leaf 2 very late		DEU	61	42		PES-SEV	8.7 a	**2.4 c**	**1.2 c**	2.2 c
						Effi-cacy	-	~~72.4~~ **72.1**	~~86.2~~ **86.7**	~~74.7~~ 74.4
		DEU	55	35		PES-SEV	18.1 a	**13.4 ab**	**11.4 b**	13.2 ab
						Effi-cacy	-	~~26.0~~ **25.7**	~~37.0~~ **37.2**	27.1
		POL	75	41		PES-SEV	25.9 a	**7.5 e**	**9.8 d**	12.1 c
						Effi-cacy	-	~~71.0~~ **71.1**	~~62.2~~ **62.4**	53.3
Mean efficacy					*3*	*Mean*	*17.6*	~~*56.5*~~ ***56.3***	~~*61.8*~~ ***62.1***	~~*51.7*~~ *51.6*
						Min	*8.7*	~~*26.0*~~ ***25.7***	~~*37.0*~~ ***37.2***	*27.1*
						Max	*25.9*	~~*72.4*~~ ***72.1***	~~*86.2*~~ ***86.7***	~~*74.7*~~ *74.4*

The results from supporting trials from Maritime EPPO zone (Germany) (
Table 3.2-160) reveal for one trial only a clear dose response (Leaf 3).
For most of the other trials, at least the two target dose rates of 1.2-1.4 L/ha of CA3642 show better performance than the reduced dose rate. One trial shows dose response for two leaf stages, but on low

efficacy level only.

The comparison of the mean values of the relevant trials for North-East zone (Table 3.2-161) shows a dose response on leaf 1 and leaf 2 early and a dose rate effect between the proposed dose rates and the reduced rate on leaf 2 late and very late.

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter triticale in the North-East EPPO climatic zone. Also 5 trials conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved significant superior results compared to the lower dose of 1 l/ha. Moderate level of control was presented after 2 applications, either in the early and late assessments. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of SEPTTR in winter triticale in Poland. The dose rate of 1,4 l/ha may be recommended at high disease pressure.

TTLWI – SEPTTR – South-East EPPO zone

Four trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against SEPTTR. The trials were carried out in Romania (3 trials) and Hungary (1 trial) in 2019 and 2020. The first application took place at crop stage BBCH 32-37 and the second application was done 18-28 days later, at BBCH 39 - 61.

For PESSEV, in one assessment a statistically significant difference was observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate. For all other assessments, the performance was comparable across all dose rates.

For PESINC, in both assessments the difference between intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate was statistically significant.

Table 3.2-162: Minimum effective dose of CA3642 against SEPTTR in winter triticale – South-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PESSEV									
LEAF1 late	ROU	46	28		PESSEV Efficacy	19.19 a -	**0.03 b 99.8**	**0.06 b 99.7**	0.10 b 99.5
	ROU	44	26		PESSEV Efficacy	18.93 a -	**0.04 b 99.8**	**0.04 b 99.8**	0.08 b 99.6
Mean Efficacy				2	*Mean Min Max*	*19.1 18.9 19.2*	***99.8 99.8 99.8***	***99.7 99.7 99.8***	*99.5 99.5 99.6*
LEAF1 late	HUN	72	48		PESSEV Efficacy	10.0 a -	**0.0 c 100.0**	**0.0 c 100.0**	0.0 c ~~100.0~~ 99.6
Mean Efficacy				1		*10.0*	***100.0***	***100.0***	*100.0*
LEAF2 late	ROU	46	28		PESSEV Efficacy	19.50 a -	**0.14 b 99.3**	**0.16 b 99.2**	0.19 b 99.0
	ROU	44	26		PESSEV Efficacy	31.88 a -	**0.15 b** ~~99.5~~ **99.6**	**0.15 b 99.5**	0.20 b 99.4
Mean Efficacy				2	*Mean Min Max*	*25.7 19.5 31.9*	***99.4 99.3*** ~~99.5~~ ***99.6***	***99.4 99.2 99.5***	*99.2 99.0 99.4*
LEAF2 very late	HUN	72	48		PESSEV	33.0 a	**4.9 cd**	**6.3 c**	9.4 b

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Efficacy	-	**85.2**	**80.9**	~~71.5~~ 71.6
Mean Efficacy				1		*33.0*	***85.2***	***80.9***	*71.5*
PESINC									
LEAF1 late	ROU	56	28		PESINC Efficacy	98.8 a -	**0.0 d** **100.0**	**1.3 d** **98.7**	35.0 b 64.6
Mean Efficacy				1		*98.8*	***100.0***	***98.7***	*64.6*
LEAF2 late	ROU	56	28		PESINC Efficacy	98.8 a -	**27.5 de** **72.2**	**27.5 de** **72.2**	78.8 b 20.2
Mean Efficacy				1		*98.8*	***100.0***	***98.7***	*64.6*

UTC: % infestation in untreated control at assessment date

Comments of zRMS:

4 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter triticale in the South-East EPPO climatic zone. CA3642 at 1-1,4 l/ha achieved similar effectiveness after 2 applications. High results of >90% have been noted in submitted trials. Statistical difference was visible between intended and the lower dose only in 1 trial (80,9-85,2% vs 71,6%). Due to limited number of trials, cMSs are kindly asked to consider this use on national level. *

**Accordance to table 3.2-12, triticale has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Winter triticale (TTLWI) – Leaf blotch of cereals (RHYNSE - *Rhynchosporium secalis*)

Two field trials were established in 2019 and 2020 in order to determine the minimum effective dose for the control of RHYNSE in winter triticale. Trials were carried out in the Maritime EPPO zone in Germany.
CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Trials from the Maritime EPPO zone were carried out in Germany (2 trials).

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Summaries of the dose response results grouped by EPPO zone are provided in Tables 3.2-164 – 164.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55

TTLWI – RHYNSE – Maritime EPPO zone

Two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against RHYNSE. Trials were carried out in Germany in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 19-30 days later, at BBCH 45-49.

No statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate. A clear numerically dose response was recorded between the higher intended dose rate (1.4 L/ha) and the lowered dose rate (1.0 L/ha) with a difference in efficacy of 17 % and 21 % for leaf level 2 and leaf level 3, respectively. Comparing the lower intended dose (1.2 L/ha) and the lowered dose rate (1.0 L/ha), a numerically dose response was recorded too with differences of 11-13 %.

Table 3.2-163: Minimum effective dose of CA3642 against RHYNSE in winter triticale – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
Leaf 2 very late	DEU	61	42		PESSEV Efficacy	4.7 a -	0.7 c ~~85.1~~ 84.7	0.9 c ~~80.9~~ 81.8	1.5 bc ~~68.1~~ 68.6
Mean efficacy				*1*		*4.7*	~~*85.1*~~ *84.7*	~~*80.9*~~ *81.8*	~~*68.1*~~ *68.6*
Leaf 3 early	DEU	45	15		PESSEV Efficacy	5.3 a -	0.4 b ~~92.5~~ 92.9	0.9 b ~~83.0~~ 83.2	1.5 b ~~71.7~~ 70.9
Mean efficacy				*1*		*5.3*	~~*92.5*~~ *92.9*	~~*83.0*~~ *83.2*	~~*71.7*~~ *70.9*

UTC: % infestation in untreated control at assessment date

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Rhynchosporium secalis* in winter triticale in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved significant superior effectiveness compared to the lower dose of 1 l/ha after 2 applications. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TTLWI – RHYNSE – North-East EPPO zone

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia.
Based on this guidance, two supporting trials from the Maritime EPPO zone (Germany) are presented to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against RHYNSE. Trials were carried out in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 19-30 days later, at BBCH 45-49.

No statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate (Table 3.2-164). A clear numerically dose response was recorded between the higher intended dose rate (1.4 L/ha) and the lowered dose rate (1.0 L/ha) with a difference in efficacy of 17% and 21% for leaf level 2 and leaf level 3, respectively. Comparing the lower intended dose (1.2 L/ha) and the lowered dose rate (1.0 L/ha), a numerically dose response was recorded too with differences of 11-14 %.

Table 3.2-164: Minimum effective dose of CA3642 against RHYNSE in winter triticale – supporting trials from Maritime EPPO zone (Germany)

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha	1.2 L/ha	1.0 L/ha

							210 g AZX/ha + 210 g PTZ/ha	180 g AZX/ha + 180 g PTZ/ha	150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
Leaf 2 very late	DEU	61	42		PESSEV Efficacy	4.7 a -	0.7 c ~~85.1~~ 84.7	0.9 c ~~80.9~~ 81.8	1.5 bc ~~68.1~~ 68.6
Mean efficacy				*1*		*4.7*	*~~85.1~~ 84.7*	*~~80.9~~ 81.8*	*~~68.1~~ 68.6*
Leaf 3 early	DEU	45	15		PES-SEV Efficacy	5.3 a -	0.4 b ~~92.5~~ 92.9	0.9 b ~~83.0~~ 83.2	1.5 b ~~71.7~~ 70.9
Mean efficacy				*1*		*5.3*	*~~92.5~~ 92.9*	*~~83.0~~ 83.2*	*~~71.7~~ 70.9*

UTC: % infestation in untreated control at assessment date

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose to control of *Rhynchosporium secalis* in winter triticale in the North-East EPPO climatic zone. 2 trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved significant superior effectiveness compared to the lower dose of 1 l/ha after 2 applications. Limited number of trials was available in NE zone but an extrapolation from winter barley is possible. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of RHYNSE in winter triticale in Poland.

TTLWI – RHYNSE – South-East EPPO zone

No data were available to support the efficacy claim of CA3642 against *Rhynchosporium secalis* on winter triticale in South-East EPPO zone. However, the species *Rhynchosporium secalis* is also the causal agent of leaf blotch on barley. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on winter triticale from the robust dataset presented for the closely related crops winter and spring barley as well.

The dataset presented in – **Winter barley (HORVW) / *Rhynchosporium secalis* (RHYNSE/RHYNSP)** and **Spring barley (HORVS) / *Rhynchosporium secalis* (RHYNSE)** – showed that sufficient efficacy of the dose rates from 1.0 L/ha is achieved. For the rates of 1.0 L/ha it was often observed that the performance of the product achieved adequate control of *Rhynchosporium secalis* on winter triticale.

For winter barley, in all trial assessments across all EPPO zones applications of CA3642 at the dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from the dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose to control *Rhynchosporium secalis* in winter triticale in the South-East EPPO climatic zone. The cMSs are kindly asked to extrapolate trials from MAR zone and consider this use on national level.

Winter triticale (TTLWI) – Powdery mildew of cereals (ERYSGR - *Blumeria graminis*)

A total of four field trials were established in 2019 in order to determine the minimum effective dose for the control of the ERYSGR in winter triticale. Two trials were carried out in the Maritime EPPO zone in Germany and France, two trials were carried out in South-East EPPO zone in Hungary.
CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g

prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Trials from the Maritime EPPO zone were carried out in Germany (1 trial) and France (1 trial).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials).

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

TTLWI – ERYSGR – Maritime EPPO zone

A total of two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against ERYSGR. Trials were carried out in Germany and France in 2019.
The first application took place at crop stage BBCH 31-32 and the second application was done 16 - 30 days later, at BBCH 39-45.

For all leaf stages in the French trial, a distinct numerical difference between the target dose rate of 1.2-1.4 L/ha of CA3642 on the one side and the reduced dose rate was observable. The difference was not statistically significant (Table 3.2-165). For Leaf 1, the lowered dose rate revealed higher efficacy than the 1.4 L/ha.
For the German trial, for all leaf stages, no dose response was observed as all dose rates gave full control.

Table 3.2-165: Minimum effective dose of CA3642 against ERYSGR/ERYSGT in winter triticale – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**~~0.8~~ 1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PESSEV									
Leaf 1 very late	FRA	58	42		PES-SEV Effi-cacy	5.7 a -	**0.5 b** **~~91.2~~ 90.6**	**0.2 b** **~~96.5~~ 97.2**	~~1.5~~ 0.8 b ~~73.7~~ 86.9
Mean efficacy				*1*		*5.7*	***~~91.2~~ 90.6***	***~~96.5~~ 97.2***	*~~73.7~~ 86.9*
Leaf 2 late	DEU	61	31		PES-SEV Effi-cacy	5.5 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*1*		*5.5*	***100.0***	***100.0***	*100.0*
Leaf 2 very late	FRA	58	42		PES-SEV Effi-cacy	11.3 a -	**0.1 b** **~~99.1~~ 99.4**	**0.1 b** **~~99.1~~ 99.0**	~~3.8~~ 0.5 b ~~66.4~~ 95.7
Mean efficacy				1		*11.3*	***~~99.1~~ 99.4***	***~~99.1~~ 99.0***	*~~66.4~~ 95.7*
Leaf 3 early	FRA	30	14		PES-SEV Effi-cacy	4.1 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	~~2.1~~ 0.0 b ~~48.8~~ 100.0
Leaf 3 early	DEU	45	15		PES-SEV Effi-cacy	5.5 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				2	*Mean*	*4.8*	**100.0**	**100.0**	*74.4*

Leaf level assm. timing	Count ry	DA-A	DA-B	No. of tri-als	Name Conc Type	UT C	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	~~0.8~~ **1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
					Min Max	*4.1* *5.5*	**100.0** **100.0**	**100.0** **100.0**	*48.8* *100.0*
Leaf 4 early	FRA	30	14		PES-SEV Effi-cacy	6.6 a -	**0.0 c** **100.0**	**0.0 c** **100.0**	~~3.7~~ 0.0 b ~~43.9~~ 100.0
Mean efficacy				1		*6.6*	***100.0***	***100.0***	*43.9*
Efficacy after 1 application									
Leaf 4 late	DEU	30	~~30~~ 0		PES-SEV Effi-cacy	10.2 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1		10.2	**100.0**	**100.0**	100.0

[b] UTC: % infestation in untreated control at assessment date

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* in winter triticale in the Maritime EPPO climatic zone. CA3642 at 1-1,4 l/ha presented high effectiveness with results of 90-100% after 2 applications. Full efficacy was noted also after 1 application in 1 trial. No significant differences between dose rates have been observed in the submitted trials, either in the early and late assessments. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TTLWI – ERYSGR – North-East EPPO zone

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia.

For the available trial from Germany, for all leaf stages (L 2-4), no dose response was observed. Efficacy was equivalent (100%) for all assessments.

Table 3.2-166: Minimum effective dose of CA3642 against ERYSGR/ERYSGT in winter triticale – supporting trial from Maritime EPPO zone (Germany)

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
Leaf 2 late	DEU	61	31		PESSEV Efficacy	5.5 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*1*		*5.5*	***100.0***	***100.0***	*100.0*
Leaf 3 early	DEU	45	15		PESSEV Efficacy	5.5 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1		*5.5*	**100.0**	**100.0**	*100.0*
Efficacy after 1 application									
Leaf 4 late	DEU	30	-		PESSEV	10.2 a	**0.0 b**	**0.0 b**	0.0 b

					Efficacy	-	**100.0**	**100.0**	100.0
Mean efficacy				1		10.2	**100.0**	**100.0**	100.0

[b] UTC: % infestation in untreated control at assessment date

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* in winter triticale in the North-East EPPO climatic zone. 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1-1,4 l/ha presented high effectiveness with results of 100% after 2 applications. Full efficacy was noted also after 1 application. No significant differences between dose rates have been observed in submitted trial, either in the early and late assessments. Limited number of trials was available in the NE zone but an extrapolation from winter wheat is possible. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of ERYSGR in winter triticale in Poland. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TTLWI – ERYSGR – South-East EPPO zone

Two trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against ERYSGR. The trials were carried out in Hungary in 2019. The first application took place at crop stage BBCH 31 - 37 and the second application was done 17 - 18 days later, at BBCH 43 - 59.

A distinct numerical dose response was observable for leaf stage 1 in one trial. For the majority of other assessments, a slight dose response was assessed or all rates gave full control (Table 3.2-167).

Table 3.2-167: Minimum effective dose of CA3642 against ERYSGR in winter triticale – South-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 very late	HUN	64	47		PESSEV Efficacy	11.7 a -	**0.3 c** ~~97.4~~ **97.1**	**0.2 c** ~~98.3~~ **98.5**	0.8 c ~~93.2~~ 93.0
Mean efficacy				*1*	*Mean*	*11.7*	***97.4***	~~*98.3*~~ ***98.5***	~~*93.2*~~ *93.0*
LEAF2 very late	HUN	57	40		PESSEV Efficacy	26.5 a -	**0.0 c** **100.0**	**0.2 c** **99.2**	0.1 c ~~99.6~~ 99.5
	HUN	64	40		PESSEV Efficacy	5.5 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*2*	*Mean* *Min* *Max*	*16* *5.5* *26.5*	***100.0*** ***100.0*** ***100.0***	***99.6*** ***99.2*** ***100.0***	*99.8* *99.6* *100.0*
LEAF3 very late	HUN	57	40		PESSEV Efficacy	25.8 a -	**0.0 c** **100.0**	**0.1 c** ~~99.6~~ **99.7**	0.1 c ~~99.6~~ 99.7
	HUN	64	40		PESSEV Efficacy	22.5 a -	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				*2*	*Mean* *Min* *Max*	*24.2* *22.5* *25.8*	***100.0*** ***100.0*** ***100.0***	~~*99.8*~~ ***99.9*** ~~*99.6*~~ ***99.7*** ***100.0***	~~*99.8*~~ *99.9* ~~*99.6*~~ *99.7* *100.0*
Mean efficacy				*1*	*1*	*22.5*	***100.0***	***100.0***	*100.0*
LEAF4 early	HUN	32	15		PESSEV Efficacy	5.5 a -	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
Mean efficacy					*Mean*	5.5	**100.0**	**100.0**	100.0

UTC: % infestation in untreated control at assessment date

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* in winter triticale in the South-East EPPO climatic zone. CA3642 at 1-1,4 l/ha achieved very high effectiveness with results of 100% on L2-L4 after 2 applications, either in the early and late assessments. No significant differences between doses were observed. Limited number of trials was available and cMSs are kindly asked to extrapolate trials from MAR zone and consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Winter triticale (TTLWI) – Green leaf area

A total of 13 trials were carried out between 2019 and 2021 to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale in the Maritime (7 trials), North-East (2 trials) and South-East (4 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in France (2 trials) and Germany (5 trials).
Trials from the North-East EPPO zone were carried out in Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials) and Romania (2 trials).

TTLWI – Green leaf area – Maritime EPPO zone

Seven trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale, assessed in terms of green leaf area. Trials were carried out in France (2 trials) and Germany (5 trials) between 2019 and 2020.
The first application took place at crop stage BBCH 30-37 and the second application was done 15-32 days later, at BBCH crop stage between 39 and 51.

In two trials, three pathogens were present with observing ERYSGR, RHYNSE and SEPTTR in the first trial and with PUCCST, RHYNSE and SEPTTR being present in the second trial. In two trials, two pathogens (ERYSGR and SEPTTR) were present. In three trials, only one pathogen (SEPTTR) was recorded.

After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased numerically by 145% for PLANT late and 14% for PLANT very late compared to the untreated control (Table 3.2-168).
For one trial, the green leaf area after application of reduced dose rate 1.0 L/ha was statistically significantly inferior to the 1.4 L/ha dose rate. In addition, a clear numerical dose response after the application of CA3642 at 1.2 L/ha and 1.4 L/ha compared to the reduced dose rate 1.0 L/ha was observed in three of the trials.

Table 3.2-168: Minimum effective dose of CA3642 assessed as green leaf area in winter triticale – Maritime EPPO zone

Part rated assm. timing	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
PLANT late	DEU	59	27		%	17.5 b 100.0	43.8 a 250.3	42.5 a 242.9	38.8 a 221.7
	DEU	61	31		%	18.8 d 100.0	45.0 a 239.4	41.3 abc 219.7	38.8 bc 206.4
Mean efficacy				*2*	*Mean*	*18.2*	*244.8*	*231.3*	*214.1*

					Min *Max*	*17.5* *18.8*	*239.4* *250.3*	*219.7* *242.9*	*206.4* *221.7*
PLANT very late	FRA	63	47		%	66.3 b 100.0	81.3 a 122.6	83.8 a 126.4	80.0 a 120.7
	DEU	61	42		%	25.5 cd 100.0	27.0 cd 105.9	24.5 d 96.1	21.5 d 84.3
	DEU	76	45		%	85.0 b 100.0	95.0 a 111.8	95.0 a 111.8	94.0 a 110.6
	DEU	77	57		%	85.0 a 100.0	95.0 a 111.8	95.0 a 111.8	94.0 a 111.8
	FRA	52	37		%	62.5 a 100.0	75.0 a 120.0	85.0 a 136.0	75.0 a 120.0
Mean efficacy				*5*	*Mean* *Min* *Max*	*64.9* *25.5* *85.0*	*114.4* *105.9* *122.6*	*116.4* *96.1* *136.0*	*109.5* *84.3* *120.7*

UTC: % green leaf area in untreated control at assessment date

Comments of zRMS:

The mean green leaf area increased by 144,8% after 2 applications of CA3642 at 1,4 l/ha, 131,3% at 1,2 l/ha and 114,1% at 1 l/ha in 2 out of 7 efficacy trials. In very late assessment, test product caused an increase in GRNARE by 9,5-16,4% for intended doses. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

TTLWI – Green leaf area – North-East EPPO zone

Two trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale, assessed in terms of green leaf area. Trials were carried out in Poland (2 trials) in 2019.
The first application took place at crop stage BBCH 30-32 and the second application was done 34-47 days later, at BBCH 55-57.

In two trials, one pathogen was present with observing SEPTTR in both trials.

While in one trial, at least a slight dose response between the highest target dose rate (1.4 L/ha) and the reduced dose rate (1.0 L/ha) was observable, in the second trial no dose response was assessed.

Table 3.2-169: Minimum effective dose of CA3642 assessed as green leaf area in winter triticale – North-East EPPO zone

Part rated assm. timing	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha** **210 g AZX/ha +** **210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha +** **180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha +** **150 g PTZ/ha**
PLANT late	POL	81	34			16.3 a 100.0	**22.5 a** **138.0**	**20.0 a** **122.7**	25.0 a 153.4
PLANT very late	POL	75	41			36.3 a 100.0	**45.0 a** **124.0**	**33.8 a** **93.1**	38.8 a 106.9

UTC: % green leaf area in untreated control at assessment date

Comments of zRMS:

The mean green leaf area increased by 24-38% after 2 applications of CA3642 at 1,4 l/ha, 22,7% at 1,2 l/ha and 6,9-53,4% at 1 l/ha in 2 efficacy trials conducted in Poland. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Positive impact on green leaf area has been noted.

TTLWI – Green leaf area – South-East EPPO zone

Four trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale, assessed in terms of green leaf area. Trials were carried out in Hungary (2 trials) and Romania (2 trials) in 2019 (n = 3) and 2020 (n = 1). The first application took place at crop stage BBCH 31-37 and the second application was done 17-24 days later, at BBCH between 39 and 59.

In one trial, two pathogens were present with observing ERYSGR and SEPTTR. In three trials, only one pathogen (SEPTTR) was recorded with recording SEPTTR in two trials and with recording ERYSGR in one trial.

Table 3.2-170: Minimum effective dose of CA3642 assessed as green leaf area in winter triticale – South-East EPPO zone

Part rated assm. timing	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PLANT late	ROU	44	26			11.8 e 100.0	**65.0 a** **550.8**	**58.8 ab** **498.3**	56.3 ab 477.1
	ROU	46	28			11.8 d 100.0	**62.5 a** **529.7**	**60.3 b** **511.0**	59.3 bc 502.5
Mean efficacy				*2*	*Mean* *Min* *Max*	*11.8* *11.8* *11.8*	***540.3*** ***529.7*** ***550.8***	***504.7*** ***498.3*** ***511.0***	*489.8* *477.1* *502.5*
PLANT very late	HUN	64	47			50.0 a 100.0	**70.0 a** **140.0**	**70.0 a** **140.0**	70.0 a 140.0
	HUN	72	48			10.0 f 100.0	**30.0 c** **300.0**	**20.0 e** **200.0**	20.0 e 200.0
Mean efficacy				*2*	*Mean* *Min* *Max*	*30.0* *10.0* *50.0*	***220.0*** ***140.0*** ***300.0***	***170.0*** ***140.0*** ***200.0***	*170.0* *140.0* *200.0*

UTC: % green leaf area in untreated control at assessment date

After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased numerically by 440% for "PLANT late" and 120% for "PLANT very late" compared to the untreated control. The detailed view on the single trial reveals that in two out of four trials the increase after the application of CA3642 at 1.4 L/ha was statistically significant compared to the reduced dose rate 1.0 L/ha (Table 3.2-170).
A clear numerical dose response after the application of CA3642 at 1.2 L/ha and 1.4 L/ha compared to the reduced dose rate 1.0 L/ha was observed in three of the four trials.

Comments of zRMS:

The mean green leaf area increased by 120% after 2 applications of CA3642 at 1,4 l/ha and 70% at 1-1,2 l/ha if we consider the whole plant. Significant increase was visible in case of assessment of L1 with results of 440,3% (1,4 l/ha), 404,7% (1,2 l/ha) and 389,8% (1 l/ha). No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Triticale - Summary and conclusions on the minimum effective dose

On winter triticale, three foliar diseases were assessed in 14 valid trials across four EPPO zones. Disease severity and, if necessary, due to low severity levels, also pest incidence was assessed and analysed on the main foliar levels 1, 2 and 3 and in few cases, if necessary, also on level 4. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

Overall, across the three EPPO zones and all diseases, a dose rate response was observed for higher disease control with higher dose rates. In particular, the rates of 1.2-1.4 L/ha generally gave significantly better control compared to the rate of 1.0 L/ha. In many of the dataset there was no statistical differences between the dose rates of 1.2 L/ha or 1.4 L/ha. However, it was frequently observed that where disease severity was higher, a significant benefit was derived from increasing the dose rate from 1.2 to 1.4 L/ha. In circumstances of low disease pressure, the 1.2 L/ha dose rate was sufficient to give comparable disease control in the majority of assessments. Due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate may be deemed more appropriate and should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In addition, the data demonstrates overall similar effects for the targeted diseases regardless of EPPO zone. Similarly, the same dose rate trends were observed for improving green leaf area in situations of infection from a single pathogen or in cases of disease complexes. Overall, CA3642 applied at the proposed dose rates (1.2 and 1.4 L/ha) showed better retention of green leaf area compared to the reduced rate.

In this dossier, data presented for minimum effective dose is primarily from assessments where two applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved with 1.2-1.4 L/ha depending on the disease pressure. According to disease development conditions, a single application may provide sufficient disease control; therefore, users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications.

Therefore, a minimum effective dose rate of 1.2-1.4 L/ha is proposed for CA3642 on winter triticale in each of the EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control a range of foliar diseases on winter triticale.

Rye (SECCW)

A total of 11 efficacy trials are available on winter rye in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.2-1.4 L/ha CA3642 for the control of PUCCRR, RHYNSE and SEPTTR.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Comments of zRMS: All efficacy trials were carried out only in winter rye. The cMSs are kindly asked to consider using of CA3642 in spring rye on national level. This use cannot be accepted in Poland. However, spring rye is minor crops in Poland and authorization under art. 51 is possible.

Winter Rye (SECCW) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

Six field trials were established between 2019 and 2021 in order to determine the minimum effective dose for the control of the SEPTTR in winter rye. Trials from the Maritime EPPO zone were carried out in Great Britain (2 trials), the trial from the North-East EPPO zone was carried out in Poland and the trials from the South-East EPPO zone were carried out in Romania (2 trials) and Hungary (1 trial).

CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose’*.

Summaries of the dose response results grouped by EPPO zone are provided in
Table 3.**2-154**, Table 3.2-145 and
Table 3.2 150.

SECCW – SEPTTR – Maritime EPPO zone

A total of two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against SEPTTR. Both trials were carried out in Great Britain in 2019 and 2021.
The first application took place at crop stage BBCH 32 and the second application was done 14-35 days later, at BBCH 45-59.

Table 3.2-171: Minimum effective dose of CA3642 against SEPTTR in winter rye – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 early	GBR	31	15		PESSEV Efficacy	14.6 a 14.6	**5.5 b** **62.3**	**6.6 b** ~~54.8~~ **54.6**	6.2 b ~~57.5~~ 57.6
Mean efficacy				1		14.6	***62.3***	~~*54.8*~~ ***54.6***	~~*57.5*~~ *57.6*
LEAF2 early	GBR	31	15		PESSEV Efficacy	57.1 a 57.1	**15.4 c** **73.0**	**20.5 c** **64.1**	22.3 c 60.9
	GBR	50	15		PESSEV Efficacy	5.0 a 5	**0.9 b** ~~82.0~~ **81.7**	**1.0 b** ~~80.0~~ **81.0**	1.1 b ~~78.0~~ 77.7
Mean efficacy				2	*Mean* Min Max	*31.1* 5.0 57.1	~~*77.5*~~ ***77.4*** **73.0** ~~82.0~~ **81.7**	~~*72.0*~~ ***72.6*** **64.1** ~~80.0~~ **81.0**	~~*69.5*~~ *69.3* 60.9 ~~78.0~~ 77.7
LEAF3 early	GBR	31	15		PESSEV Efficacy	90.7 a 90.7	**42.7 c** **52.9**	**43.6 c** ~~51.9~~ **52.0**	38.1 c 58.0
Mean efficacy				1		90.7	***52.9***	~~*51.9*~~ ***52.0***	*58.0*
LEAF1 late	GBR	65	49		PESSEV Efficacy	100.0 a 100	**27.7 bc** ~~72.3~~ **72.4**	**21.3 c** **78.7**	30.2 bc 69.8
	GBR	72	37		PESSEV Efficacy	14.3 a 14.3	**4.1 b** ~~71.3~~ **71.5**	**4.5 b** ~~68.5~~ **68.4**	4.2 b ~~70.6~~ 70.8
Mean efficacy				2	Mean Min Max	*57.2* 14.3 100.0	~~*71.8*~~ ***72.0*** ~~71.3~~ **71.5** ~~72.3~~ **72.4**	***73.6*** ~~68.5~~ **68.4** **78.7**	~~*70.2*~~ *70.3* 69.8 ~~70.6~~ 70.8
LEAF2 late	GBR	65	49		PESSEV Efficacy	100.0 a 100	**42.0 b** **58.0**	**41.4 b** **58.6**	49.3 b ~~50.7~~ 50.8
	GBR	72	37		PESSEV Efficacy	28.4 a 28.4	**10.0 b** ~~64.8~~ **64.9**	**10.4 b** ~~63.4~~ **63.3**	10.9 b ~~61.6~~ 61.7
Mean efficacy				2	Mean Min Max	*64.2* 28.4 100.0	***61.4*** **58.0** ~~64.8~~ **64.9**	***61.0*** **58.6** ~~63.4~~ **63.3**	~~*56.2*~~ *56.3* ~~50.7~~ 50.8 ~~61.6~~ 61.7
Efficacy after 1 application									
LEAF3 early	GBR	16	16		PESSEV Efficacy	4.5 a 4.5	**0.2 b** ~~95.6~~ **96.6**	**1.4 b** ~~68.9~~ **69.2**	1.4 b ~~68.9~~ 69.5
Mean efficacy				1		4.5	~~*95.6*~~ ***96.6***	~~*68.9*~~ ***69.2***	~~*68.9*~~ *69.5*

[b] UTC: % infestation in untreated control at assessment date

At an early assessment date (15 DA-B), a clear numerical, but not statistically significant, difference between the highest intended dose rate (1.4 L/ha, 73 % efficacy) of CA3642 and the reduced dose rate (1.0 L/ha, 61 %) was observed on leaf level 2 in one trial.
In all other early and late assessment, no difference between all three dose rates (1.4, 1.2 and 1.0 L/ha) was observed.
In the assessment after the first application also a clear numerical, but not statistically significant, difference was observed between the highest intended dose rate (1.4 L/ha, ~~96~~ 97 % efficacy) of CA3642 and the reduced dose rate (1.0 L/ha, 69 %) on leaf level 2 in one trial.

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter rye in the Maritime EPPO climatic zone. CA3642 applied at dose rate of 1,2-1,4 l/ha achieved slight higher results but not statistical significant compared to the lower dose of 1 l/ha, either in the early or late assessments. The level of control was moderate after 2 applications in both trials. Also in 1 trial efficacy after 1 application was presented. The test product at 1,4 l/ha was superior compared to other doses (96,6% vs 69%). Limited number of trials was available to determine MED and cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Belgium, Ireland, Luxembourg and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

SECCW – SEPTTR – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against SEPTTR. The trial was carried out in Poland in 2020. The first application took place at crop stage BBCH 37 and the second application was done 15 days later, at BBCH 57.

Table 3.2-172: Minimum effective dose of CA3642 against SEPTTR in winter rye – North-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g ZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	POL	30	15		PESSEV Efficacy	10.6 a 10.6	**2.7 b** ~~74.5~~ **74.9**	**3.6 b** ~~66.0~~ **65.6**	3.9 b ~~63.2~~ 63.3
Mean efficacy				1			~~*74.5*~~ ***74.9***	~~*66.0*~~ ***65.6***	~~*63.2*~~ *63.3*
LEAF2 early	POL	30	15	TA	PESSEV Efficacy	16.8 a 16.8 a	**2.7 b** ~~83.9~~ **84.1** **cd**	**3.0 b** ~~82.1~~ **82.3** **cd**	5.7 b ~~66.1~~ 66.0 b
Mean efficacy				1			~~*83.9*~~ ***84.1***	~~*82.1*~~ ***82.3***	~~*66.1*~~ *66.0*
LEAF3 early	POL	30	15	TL	PESSEV Efficacy	7.3 a 7.3 a	**0.3 b** ~~95.9~~ **96.6** **b**	**0.8 b** ~~89.0~~ **89.3** **b**	1.2 b ~~83.6~~ 83.1 b
Mean efficacy				1			~~*95.9*~~ ***96.6***	~~*89.0*~~ ***89.3***	~~*83.6*~~ *83.1*
LEAF1 late	POL	59	44		PESSEV Efficacy	15.6 a 15.6	**2.9 b** ~~81.4~~ **81.3**	**2.6 b** ~~83.3~~ **83.6**	6.1 b ~~60.9~~ 61.0
Mean efficacy				1			~~*81.4*~~ ***81.3***	~~*83.3*~~ ***83.6***	~~*60.9*~~ *61.0*
LEAF2 late	POL	59	44	TA	PESSEV Efficacy	17.9 a 17.9 a	**4.5 b** **74.9** **b**	**4.3 b** **76.0** **b**	4.6 b ~~74.3~~ 74.4 b
Mean efficacy				1			***74.9***	***76.0***	~~*74.3*~~ *74.4*
LEAF3 late	POL	59	44		PESSEV Efficacy	14.8 a 14.8	**1.7 c** ~~88.5~~ **88.3**	**1.0 c** **93.2**	7.6 b ~~48.6~~ 48.3

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC^b	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha** **210 g ZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha + 150 g PTZ/ha**
				TA		a	c	c	b
Mean efficacy				1			*88.5*	*93.2*	*48.6*
Efficacy after 1 application									
LEAF3	POL	15	-	TA	PESSEV Efficacy	5.3 a 5.3 a	**0.1 c** ~~98.1~~ **98.4** c	**0.4 c** ~~92.5~~ **92.2** c	1.1 b ~~79.2~~ 80.0 b
Mean efficacy				1			*~~98.1~~ **98.4***	*~~92.5~~ **92.2***	*~~79.2~~ 80.0*

^b UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications, a clear numerical difference (> 10 % efficacy) was observed between treatments with the highest intended dose rate (1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha) in five out of six assessments at both assessment timings on all leaf levels. In two assessments, 15 DA-B on leaf level 2 and 44 DA-B on leaf level 3, the difference was statistically significant.

In three out of six assessments a clear dose response with a numerical difference of 16 % or more could be observed also between the lower intended dose rate (1.2 L/ha) and the reduced dose rate (1.0 L/ha). In two of these three assessments, this difference was statistically significant.

After a single application (15 DA-A) a statistically significant difference was observed between both intended dose rates (1.4 L/ha, 96 % and 1.2 L/ha, 93 %) of CA3642 and the reduced dose rate (1.0 L/ha, 79 %) on leaf level 3.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter rye in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high results of >80%, either in the early and late assessments. Lower dose of 1 l/ha was significant inferior. Also after 1 application, the test product at claimed dose rates had good control (>90%). Limited number of trials was available in the NE zone and an extrapolation from other cereals is not possible. This use cannot be accepted in Poland.

SECCW – SEPTTR – South-East EPPO zone

Three trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against SEPTTR. The trials were carried out in Romania (2 trials) and Hungary (1 trial) in 2019 and 2021. The first application took place at crop stage BBCH 30-37 and the second application was done 19-30 days later, at BBCH 41-59.

Table 3.2-173: Minimum effective dose of CA3642 against SEPTTR in winter rye – South-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC^b	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha** **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha** **150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF1 early	ROU	44	25		PESSEV Efficacy	8.6 a 8.6	**0.0 b** ~~100.0~~ **99.9**	**0.0 b** ~~100.0~~ **99.9**	0.0 b ~~100.0~~ 99.7

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				1		8.6	*~~100.0~~* ***99.9***	*~~100.0~~* ***99.9***	*~~100.0~~ 99.7*
LEAF1 late	HUN	60	38		PESSEV Efficacy	5.9 a 5.9	**0.2 b** ~~96.6~~ **96.0**	**1.7 b** ~~71.2~~ **71.9**	0.4 b ~~93.2~~ 92.8
Mean efficacy				1		5.9	*~~96.6~~* ***96.0***	*~~71.2~~* ***71.9***	*~~93.2~~ 92.8*
LEAF2 late	HUN	60	38		PESSEV Efficacy	34.7 a 34.7	**6.6 b** **81.0**	**6.3 b** **81.8**	7.1 b ~~79.5~~ 79.6
	ROU	77	47		PESSEV Efficacy	8.0 a 8	**4.5 b** **43.8**	**5.1 b** ~~36.3~~ **36.7**	5.8 b ~~27.5~~ 27.3
Mean efficacy				2	*Mean* Min Max	*21* 8.0 34.7	***62.4*** **43.8** **81.0**	***59.0*** ~~36.3~~ **36.7** **81.8**	*53.5* ~~27.5~~ 27.3 ~~79.5~~ 79.6
LEAF3 late	HUN	60	38		PESSEV Efficacy	56.1 a 56.1	**16.2 b** **71.1**	**21.2 b** **62.2**	17.3 b 69.2
Mean efficacy				1		56.1	***71.1***	***62.2***	*69.2*

[b] UTC: % infestation in untreated control at assessment date

No statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rates. In one assessment (38 DA-B on leaf level 1), the performance of the lower intended dose rate (1.2 L/ha) was more than 20% lower compared to the highest intended dose rate (1.4 L/ha) as well as compared to the reduced dose rate (1.0 L/ha). However, this difference was not statistically significant, and the difference of performance might be the result of natural biological variability or other unknown randomly occurring factors.
To ensure sufficient and reliable control of SEPTTR, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.2-1.4 L/ha.

Comments of zRMS:

3 efficacy trials have been submitted to determine minimum effective dose to control of *Zymoseptoria tritici* in winter rye in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved slight higher results compared to the lower dose of 1 l/ha but this differences were not statistically significant. Very high effectiveness has been noted on L1, either in the early and late assessment in 1 trial. The moderate level was observed on L2 and L3. No results after 1 application were available in the SE zone. Taking into account all trials, the dose rates of 1,2 l/ha can be determined MED to control of SEPTTR in winter rye. However limited number of trials was available and cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Romania and Slovakia. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Winter Rye (SECCW) – Brown rust of rye (PUCCRR - *Puccinia recondita* f. sp. *recondita*)

Six field trials were established between 2019 and 2021 in order to determine the minimum effective dose for the control of the PUCCRR in winter rye. Trials from the Maritime EPPO zone were carried out in Germany (2 trials), Denmark (1 trial) and Great Britain (1 trial), the trial from the North-East EPPO zone was carried out in Poland and the trial from the South-East EPO zone was carried out in Hungary.
CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose*’.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-151: , Table 3.2-175, Table 3.2-149, Table 3.2-177 and Table 3.2-178.

SECCW – PUCCRR/PUCCRE – Maritime EPPO zone

A total of ~~four~~ two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against PUCCRR/PUCCRE. Trials were carried out in Germany ~~(2 trials), Denmark (1 trial) and Great Britain (1 trial) between~~ in 2019 ~~and 2020~~.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-20 days later, at BBCH 42-59.

Table 3.2-174: Minimum effective dose of CA3642 against PUCCRR in winter rye – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
~~LEAF1 early~~	~~GBR~~	~~31~~	~~15~~	~~TL~~	~~PESSEV Efficacy~~	~~11 a 11 a~~	~~**1.8 b 83.6 b**~~	~~**3 b 72.7 b**~~	~~2.5 b 77.3 b~~
~~Mean efficacy~~				~~1~~		~~11~~	~~*83.6*~~	~~*72.7*~~	~~*77.3*~~
~~LEAF2 early~~	~~DNK~~	~~38~~	~~24~~	~~TA~~	~~PESSEV Efficacy~~	~~4.5 a 4.5 a~~	~~**0.1 b 97.8 c**~~	~~**0.2 b 95.6 c**~~	~~0.1 b 97.8 c~~
	~~GBR~~	~~31~~	~~15~~		~~PESSEV Efficacy~~	~~11 a 11~~	~~**4.4 b 60**~~	~~**3.4 b 69.1**~~	~~4.3 b 60.9~~
~~Mean efficacy~~				~~2~~	~~*Mean* Min Max~~	~~*7.8* 4.5 11~~	~~*78.9* **60 97.8**~~	~~*82.35* **69.1 95.6**~~	~~*79.4* 60.9 97.8~~
~~LEAF3 early~~	~~DNK~~	~~38~~	~~24~~	~~TA~~	~~PESSEV Efficacy~~	~~8.4 a 8.4 a~~	~~**0.4 b 95.2 b**~~	~~**0.4 b 95.2 b**~~	~~0.1 b 98.8 b~~
	~~GBR~~	~~31~~	~~15~~	~~TA~~	~~PESSEV Efficacy~~	~~16.3 a 16.3 a~~	~~**4.9 b 69.9 b**~~	~~**5.6 b 65.6 b**~~	~~5.9 b 63.8 b~~
~~Mean efficacy~~				~~2~~	~~*Mean* Min Max~~	~~*12.4* 8.4 16.3~~	~~*82.55* **69.9 95.2**~~	~~*80.4* **65.6 95.2**~~	~~*81.3* 63.8 98.8~~
LEAF1 late	DEU	74	55	TA	PESSEV Efficacy	6.4 a 6.4 a	**0.6 b** ~~90.6~~ **90.9** **c**	**0.7 b** ~~89.1~~ **89.7** **c**	0.7 b ~~89.1~~ 88.7 c
	DEU	62	42	TA	PESSEV Efficacy	5.4 a 5.4 a	**0 b** ~~100~~ **99.3** **c**	**0.1 b 98.1 bc**	0.4 b ~~92.6~~ 92.3 bc
	~~GBR~~	~~65~~	~~49~~		~~PESSEV Efficacy~~	~~100 a 100~~	~~**13.1 c 86.9**~~	~~**9.1 c 90.9**~~	~~12.1 c 87.9~~
Mean efficacy				~~3~~ 2	Mean Min Max	~~37.3~~ 5.9 5.4 ~~100~~ 6.4	~~*92.5*~~ ***95.1*** ~~86.9~~ **90.9** ~~100~~ **99.3**	~~*92.7*~~ ***93.9*** ~~89.1~~ **89.7** **98.1**	~~*89.9*~~ *90.5* ~~87.9~~ 88.7 ~~92.6~~ 92.3
LEAF2 late	~~GBR~~	~~65~~	~~49~~		~~PESSEV Efficacy~~	~~100 a 100~~	~~**12.3 b 87.7**~~	~~**10.6 b 89.4**~~	~~28.8 b 71.2~~
	DEU	74	55	TA	PESSEV Efficacy	13.7 a 13.7 a	**1.1 d** ~~92~~ **92.2** **d**	**1.3 d** ~~90.5~~ **90.8** **d**	1.3 d ~~90.5~~ 90.6 d
	DEU	62	42	TL	PESSEV Efficacy	19.6 a 19.6 a	**0.2 b** ~~99~~ **99.2** **c**	**0.3 b 98.5 bc**	0.5 b ~~97.4~~ 97.3 bc

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Mean efficacy				~~3~~ 2	Mean Min Max	~~44.4~~ 16.7 13.7 ~~100~~ 19.6	~~*92.9*~~ ***95.7*** ~~87.7~~ **92.2** ~~99~~ **99.2**	~~*92.8*~~ ***94.7*** ~~89.4~~ **90.8** **98.5**	~~*86.4*~~ *94.0* ~~71.2~~ 90.6 ~~97.4~~ 97.3
~~**Efficacy after 1 application**~~									
~~LEAF1~~	~~GBR~~	~~16~~	~~0~~		~~PESSEV~~ ~~Efficacy~~	~~3.1 a~~ ~~3.1~~	~~**0 b**~~ ~~**100**~~	~~**0 b**~~ ~~**100**~~	~~0.8 b~~ ~~74.2~~
~~Mean efficacy~~				~~1~~		~~3.1~~	~~*100*~~	~~*100*~~	~~*74.2*~~
~~LEAF2~~	~~GBR~~	~~16~~	~~0~~		~~PESSEV~~ ~~Efficacy~~	~~15.1 a~~ ~~15.1~~	~~**4.6 b**~~ ~~**69.5**~~	~~**1.7 cd**~~ ~~**88.7**~~	~~1.9 cd~~ ~~87.4~~
~~Mean efficacy~~						~~15.1~~	~~*69.5*~~	~~*88.7*~~	~~*87.4*~~
~~LEAF3~~	~~DNK~~	~~14~~	~~0~~	~~TA~~	~~PESSEV~~ ~~Efficacy~~	~~2.8 a~~ ~~2.8~~ ~~a~~	~~**0 b**~~ ~~**100**~~ ~~**b**~~	~~**0.4 b**~~ ~~**85.7**~~ ~~**b**~~	~~0.1 b~~ ~~96.4~~ ~~b~~
	~~GBR~~	~~16~~	~~0~~		~~PESSEV~~ ~~Efficacy~~	~~28.6 a~~ ~~28.6~~	~~**4.7 c**~~ ~~**83.6**~~	~~**7.9 c**~~ ~~**72.4**~~	~~7.2 c~~ ~~74.8~~
~~Mean efficacy~~				~~2~~	~~*Mean*~~ ~~Min~~ ~~Max~~	~~15.7~~ ~~2.8~~ ~~28.6~~	~~*91.8*~~ ~~*83.6*~~ ~~*100*~~	~~*79.1*~~ ~~*72.4*~~ ~~*85.7*~~	~~*85.6*~~ ~~*74.8*~~ ~~*96.4*~~

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Overall, quite uniform efficacy was achieved with the intended dose rates (1.2-1.4 L/ha) of CA3642 and the reduced dose rate (1.0 L/ha). This was observed under a mostly low to moderate disease pressure. Just two assessments (49 DA-B, leaf level 1 and 2) are characterized by a very high disease pressure (100 %) in one of those assessments (leaf level 2) a clear dose response of more than 15 % between the intended dose rates (1.4 and 1.2 L/ha) and the reduced rate (1.0 L/ha) was observed. Efficacy achieved with 1.4, 1.2 and 1.0 L/ha of CA3642 was 88 %, 89 % and 71 %, respectively. Even though the difference is not statistically significant, it is a clear numerical difference.

~~After a single application (16 DA-A) a numerical, but not statistically significant, difference was observed between both intended dose rates (1.4 L/ha and 1.2 L/ha, both 100% efficacy) of CA3642 and the reduced dose rate (1.0 L/ha, 74 %) on leaf level 1. The proposed dose rates provided full control at this assessment compared to 74 % for the 1.0 L/ha rate. On leaf level 2 a reverse dose response was observed, where the efficacy of the highest dose rate (1.4 L/ha) was lower compared to the lower and the reduced dose rate. On leaf level 3 no clear trend was observed.~~

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia recondita* f.sp. *recondita* in winter rye in the Maritime EPPO climatic zone. CA3642 at 1-1,4 l/ha achieved very high results (>90%) in the late assessments on L1 and L2. No significant differences between doses were visible. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Belgium, Ireland, Luxembourg and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

SECCW – PUCCRR – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against PUCCRR. The trial was carried out in Poland in 2019. The first application took place at crop stage BBCH 32 and the second application was done 30 days later at BBCH 53.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, two additional trials from Germany are presented to justify the minimum effective dose of 1.2-1.4 L/ha CA3642 applied up to two times in winter rye against PUCCRR. CA3642 was first applied at crop stage BBCH 31-32 and the second application was done 19-20 days later, at BBCH 42-51.

Table 3.2-175: Minimum effective dose of CA3642 against PUCCRR in winter rye – trials from North-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF 1 early	POL	45	15	TA	PESSEV Efficacy	16.2 a 16.2 a	**1.3 f** **92.1** **g**	**1.9 ef** **88.3** **f**	2.4 e 85.2 e
Mean efficacy				1		16.2	***92.1***	***88.3***	*85.2*
LEAF2 early	POL	45	15	TA	PESSEV Efficacy	42.3 a 42.3 a	**5 e** ~~88.2~~ **88.1** **fg**	**5.5 e** **87.1** **fg**	6.7 e ~~84.2~~ 84.1 ef
Mean efficacy				1		42.3	~~*88.2*~~ ***88.1***	***87.1***	~~*84.2*~~ *84.1*
LEAF3 early	POL	45	15		PESSEV Efficacy	70.7 a 70.7	**13.2 e** **81.3**	**13.4 e** **81**	15.9 de 77.5
Mean efficacy				1		70.7	***81.3***	***81***	*77.5*
LEAF1 late	POL	59	29	TL	PESSEV Efficacy	53 a 53 a	**6.7 e** **87.4** **f**	**10.7 de** **79.8** **e**	16.2 c ~~69.4~~ 69.5 c
Mean efficacy				1		53	***87.4***	***79.8***	~~*69.4*~~ *69.5*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-176: Minimum effective dose of CA3642 against PUCCRR in winter rye – supporting trials from Germany

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	DEU	74	55	TA	PESSEV Efficacy	6.4 a 6.4 4.7 a	0.6 b ~~90.6~~ **90.9** **c**	0.7 b ~~89.1~~ **89.7** **c**	0.7 b ~~89.1~~ 88.7 c
	DEU	62	42	TA	PESSEV Efficacy	5.4 a 5.4 3.5 a	**0 b** ~~100.0~~ **99.3** **c**	**0.1 b** **98.1** **bc**	0.4 b ~~92.6~~ 92.3 bc
Mean efficacy				2	Mean Min Max	*5.9* 5.4 6.4	~~*95.3*~~ ***95.1*** ~~90.6~~ **90.9** ~~100.0~~ **99.3**	~~*93.6*~~ ***93.9*** ~~89.1~~ **89.7** **98.1**	~~*90.9*~~ *90.5* ~~89.1~~ 88.7 ~~92.6~~ 92.3
LEAF2	DEU	74	55		PESSEV	13.7 a	**1.1 d**	**1.3 d**	1.3 d

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
late				TA	Efficacy	13.7 a	~~92.0~~ **92.2** **d**	~~90.5~~ **90.8** **d**	~~90.5~~ 90.6 d
	DEU	62	42		PESSEV Efficacy	19.6 a 19.6	**0.2 b** ~~99.0~~ **99.2**	**0.3 b** **98.5**	0.5 b ~~97.4~~ 97.3
Mean efficacy				2	Mean Min Max	*16.7* 13.7 19.6	~~*95.5*~~ ***95.7*** ~~92.0~~ **92.2** ~~99.0~~ **99.2**	~~*94.5*~~ ***94.7*** ~~90.5~~ **90.8** **98.5**	*94.0* ~~90.5~~ 90.6 ~~97.4~~ 97.3

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-177: Minimum effective dose of CA3642 against PUCCRR in winter rye – summary North-East and supporting trials

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
Efficacy after 2 applications									
LEAF1 late	DEU	74	55	TA	PESSEV Efficacy	6.4 a 6.4 a	**0.6 b** ~~**90.6**~~ 90.9 **c**	**0.7 b** ~~89.1~~ **89.7** **c**	0.7 b ~~89.1~~ 88.7 c
	DEU	62	42	TA	PESSEV Efficacy	5.4 a 5.4 a	**0 b** ~~100.0~~ **99.3** **c**	**0.1 b** **98.1** **bc**	0.4 b ~~92.6~~ 92.3 bc
	POL	59	29	TL	PESSEV Efficacy	53 a 53 a	**6.7 e** **87.4** **f**	**10.7 de** **79.8** **e**	16.2 c ~~69.4~~ 69.5 c
Mean efficacy			DE	*2*	*Mean* Min Max	*5.9* *5.4* *6.4*	~~*95.3*~~ ***95.1*** ~~90.6~~ **90.9** ~~100.0~~ **99.3**	~~*93.6*~~ ***93.9*** ~~89.1~~ **89.7** **98.1**	~~*90.9*~~ *90.5* ~~89.1~~ 88.7 ~~92.6~~ 92.3
			NE and PL neighbouring countries	3	*Mean* Min Max	*21.6* *5.4* *53.0*	~~*92.7*~~ ***92.5*** **87.4** ~~100.0~~ **99.3**	~~*89.0*~~ ***89.2*** **79.8** **98.1**	~~*83.7*~~ *83.5* ~~69.4~~ 69.5 ~~92.6~~ 92.3
			PL	1		*53.0*	***87.4***	***79.8***	~~*69.4*~~ *69.5*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

In the Polish trial, a clear dose response, with a statistically significant difference between all dose rates was observed on leaf level 1 at both assessment dates. At an early assessment date (15 DA-B), the efficacy observed after application of 1.4, 1.2 and 1.0 L/ha CA3642 was 92 %, 88 % and 85 %, respectively. Efficacy achieved 29 DA-B was 87 %, 80 % and ~~69~~ 70 %. On leaf level 2 and 3, the efficacy of all tested dose rates was comparable.
In the supporting trials from Germany, no statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate. Efficacy over all leaf level after application of CA3642 at 1.4 L/ha ranged between 91 and ~~100~~ 99 %, 1.2 L/ha resulted in efficacy of 89-99 % and efficacy of the reduced dose rate varied between 89-97 %.

In the collated data, a dose rate trend can be observed whereby mean efficacy on leaf 1 at a late assessment gave efficacy values of ~~92.7~~ 92.5 %, ~~89.0~~ 89.2 % and ~~83.7~~ 83.5% for the respectively reduced dose rates.

Comments of zRMS:

Only 1 efficacy trials has been submitted to determine minimum effective dose to control of *Puccinia recondita* f.sp. *recondita* in winter rye in the North-East EPPO climatic zone. Also 2 trials conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1-1,4 l/ha achieved high results of >90% in all trials after 2 applications. Significant differences between doses was visible in Polish trial. The test product at dose rate of 1,2-1,4 l/ha was superior compared to the lower dose of 1 l/ha. No results after 1 application were presented. An extrapolation from winter wheat is possible for this use in Poland. Taking into account all available results, the dose rate of 1,2 l/ha can be considered MED for control of PUCCRR/PUCCRE in winter rye.

SECCW – PUCCRR – South-East EPPO zone

One trial from the South-East EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against PUCCRR. The trial was carried out in Hungary in 2019. The first application took place at crop stage BBCH 31 and the second application was done 22 days later, at BBCH 41.

Table 3.2-178: Minimum effective dose of CA3642 against PUCCRR in winter rye – South-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC^{b}**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF4 early	HUN	37	15		PESSEV Efficacy	7.2 a 7.2	**0 b 100**	**0 b 100**	0 b 100
Mean efficacy				1		*7.2*	***100***	***100***	*100*
LEAF1 late	HUN	60	38		PESSEV Efficacy	8.3 a 8.3	**0 b 100**	**0 b 100**	0 b 100
Mean efficacy				1		*8.3*	***100***	***100***	*100*
LEAF2 late	HUN	60	38		PESSEV Efficacy	16.3 a 16.3	**0 b 100**	**0 b 100**	0 b 100
Mean efficacy				1		*16.3*	***100***	***100***	*100*
LEAF3 late	HUN	60	38		PESSEV Efficacy	24.4 a 24.4	**0 b 100**	**0 b 100**	0 b 100
Mean efficacy				1		*24.4*	***100***	***100***	*100*

^{b} UTC: % infestation in untreated control at assessment date

No dose response could be observed in any of the assessments. Excellent control (100 %) of PUCCRR was achieved in all assessment after application of the intended dose rates (1.4 and 1.2 L/ha) as well with the reduced dose rate (1.0 L/ha).

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control *Puccinia recondita* f.sp. *recondita* in winter rye in the South-East EPPO climatic zone. CA3642 at 1-1,4 l/ha achieved full effectiveness with results of 100%, either in the early and late assessments. No significant differences between doses were visible in the trial. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Winter Rye (SECCW) – Leaf blotch of cereals (RHYNSE - *Rhynchosporium secalis*)

Three field trials were established in 2020 in order to determine the minimum effective dose for the control of the RHYNSE in winter rye. Trials were carried out in the Maritime EPPO zone in Germany (2 trials) and in the North-East EPPO zone in Latvia.
CA3642 was tested at the intended dose rates, 1.2 and 1.4 L/ha (180-210 g azoxystrobin and 180-210 g prothioconazole) compared to the reduced dose rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in, Table 3.2-180, Table 3.2-181 and
Table 3.2-182.

The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

SECCW – RHYNSE – Maritime EPPO zone

Two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against RHYNSE. Trials were carried out in Germany in 2020. The first application took place at crop stage BBCH 31-32 and the second application was done 19-20 days later, at BBCH 42-51.

Table 3.2-179: Minimum effective dose of CA3642 against RHYNSE in winter rye – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF3 early	DEU	49	30	TA	PESSEV Efficacy	4.6 a 4.6 a	**0.3 b** **93.5 b**	**0.3 b** ~~93.5~~ **93.2 b**	0.4 b ~~91.3~~ 91.4 b
	DEU	49	29		PESSEV Efficacy	5.1 a 5.1	**1 b** **80.4**	**1.1 b** ~~78.4~~ **79.5**	1.3 b ~~74.5~~ 75.1
Mean efficacy				2	Mean Min Max	4.9 4.6 5.1	***87*** **80.4** **93.5**	~~*86*~~ ***86.4*** ~~78.4~~ **79.5** ~~93.5~~ **93.2**	*82.9* ~~74.5~~ 75.1 ~~91.3~~ 91.4
LEAF1 late	DEU	74	55		PESSEV Efficacy	6.7 a 6.7	**1.5 b** ~~77.6~~ **77.1**	**2 b** ~~70.1~~ **71.0**	1.3 b ~~80.6~~ 80.1
Mean efficacy				1	Mean	6.7	~~*77.6*~~ ***77.1***	~~*70.1*~~ ***71.0***	~~*80.6*~~ *80.1*
LEAF2 late	DEU	74	55		PESSEV Efficacy	17.1 a 17.1	**4.1 b** **76**	**5.7 b** ~~66.7~~ **66.6**	3.1 b ~~81.9~~ 82.1
Mean efficacy				1	Mean	17.1	***76***	~~*66.7*~~ ***66.6***	~~*81.9*~~ *82.1*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

No statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate. Efficacy over all leaf level after application of CA3642 at 1.4 L/ha ranged between 76 and 94 %, 1.2 L/ha resulted in efficacy of 67-94 % and efficacy of the reduced dose rate varied between 75 and 91 %.

Comments of zRMS:

Only 2 efficacy trials have been submitted to determine minimum effective dose to control of *Rhynchosporium secalis* in winter rye in the Maritime EPPO climatic zone. No statistically significant differences have been observed in these trials. CA3642 at 1-1,4 l/ha achieved high results of >80% in the early assessment and >70% in the late assessments after 2 applications. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Belgium, Ireland, Luxembourg and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

SECCW – RHYNSE – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye against RHYNSE. The trial was carried out in Latvia in 2020. The first application took place at crop stage BBCH 33 and the second application was done 30 days later, at BBCH 51.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, two additional trials from Germany are presented to justify the minimum effective dose of 1.2-1.4 L/ha CA3642 applied up to two times in winter rye against RHYNSE. CA3642 was first applied at crop stage BBCH 32 and the second application was done 19 days later, at BBCH 42-51.

Table 3.2-180: Minimum effective dose of CA3642 against RHYNSE in winter rye – trials from North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF2 late	LVA	69	39	TA	PESSEV Efficacy	20.9 a 20.9 a	**5.6 b** ~~73.2~~ **73.1** **b**	**6.2 b** ~~70.3~~ **70.4** **b**	5 b 76.1 b
Mean efficacy				1		*20.9*	~~*73.2*~~ ***73.1***	~~*70.3*~~ ***70.4***	*76.1*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-181: Minimum effective dose of CA3642 against RHYNSE in winter rye – supporting trials from Germany

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 2 applications									
LEAF3 early	DEU	49	30	TA	PESSEV Efficacy	4.6 a 4.6 a	**0.3 b** **93.5** **b**	**0.3 b** ~~93.5~~ **93.2** **b**	0.4 b ~~91.3~~ 91.4 b
	DEU	49	29		PESSEV Efficacy	5.1 a 5.1	**1 b** **80.4**	**1.1 b** ~~78.4~~ **79.5**	1.3 b ~~74.5~~ 75.1
Mean efficacy				2	Mean Min Max	4.9 4.6 5.1	***87*** **80.4** **93.5**	***86.4*** ~~78.4~~ **79.5** ~~93.5~~ **93.2**	~~*82.9*~~ *83.3* ~~74.5~~ 75.1 ~~91.3~~ 91.4
LEAF1 late	DEU	74	55		PESSEV Efficacy	6.7 a 6.7	**1.5 b** ~~77.6~~ **77.1**	**2 b** ~~70.1~~ **71.0**	1.3 b ~~80.6~~ 80.1

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
Mean efficacy				1	Mean	6.7	~~*77.6*~~ ***77.1***	~~*70.1*~~ ***71.0***	~~*80.6*~~ *80.1*
LEAF2 late	DEU	74	55		PESSEV Efficacy	17.1 a 17.1	**4.1 b** **76**	**5.7 b** ~~66.7~~ **66.6**	3.1 b ~~81.9~~ 82.1
Mean efficacy				1	Mean	17.1	***76***	~~*66.7*~~ ***66.6***	~~*81.9*~~ *82.1*

UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) □ transformed data are not considered for mean

Table 3.2-182: Minimum effective dose of CA3642 against RHYNSE in winter rye – summary North-East and supporting trials

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM *	Name Conc Type	UTC b	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
LEAF2 late	DEU	74	55		PESSEV Efficacy	17.1 a 17.1	**4.1 b** **76**	**5.7 b** ~~66.7~~ **66.6**	3.1 b ~~81.9~~ 82.1
	LVA	69	39	TA	PESSEV Efficacy	20.9 a 20.9 a	**5.6 b** ~~73.2~~ **73.1** **b**	**6.2 b** ~~70.3~~ **70.4** **b**	5.0 b 76.1 b
Mean efficacy		NE and PL neighbouring countries		2	*Mean* Min Max	*19* 17.1 20.9	***74.6*** ~~73.2~~ **73.1** **76**	***68.5*** ~~66.7~~ **66.6** ~~70.3~~ **70.4**	*79.1* 76.1 ~~81.9~~ 82.1

UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) □ transformed data are not considered for mean

No statistically significant differences were observed between both intended (1.4 and 1.2 L/ha) and the reduced (1.0 L/ha) dose rate in any of the relevant trials for the North-East EPPO zone. Infestation on all trials was low to moderate and therefore also the reduced dose rate achieved already sufficient control. To ensure sufficient and reliable control of RHYNSE, also under conditions of higher disease pressure and to prevent development of resistance, the proposed minimum effective dose is 1.2-1.4 L/ha.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Rhynchosporium secalis* in winter rye in the North-East EPPO climatic zone. Also 2 trials conducted in Germany has been included to the overall calculation as support for the Polish registration. The moderate level of control was presented in 2 out of 3 trials on L2 in the late assessments. No significant differences between doses were visible after 2 applications. No results after 1 application were available. An extrapolation from winter barley is possible for this use. Taking into account all trials, the dose rate of 1,2 l/ha can be determined MED for control of RHYNSE in winter rye in Poland.

SECCW – RHYNSE – South-East EPPO zone

No data from the South-East EPPO Zone were available to support the minimum effective dose of

CA3642 against *Rhynchosporium secalis* on rye. However, the species *Rhynchosporium secalis* is also the causal agent of leaf blotch on barley. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on rye from the robust dataset presented for the closely related crops winter and spring barley.

The dataset presented in – **Winter barley (HORVW) / *Rhynchosporium secalis* (RHYNSE/RHYNSP)** and **Spring barley (HORVS) / *Rhynchosporium secalis* (RHYNSE)** – showed that an overall trend can be observed whereby efficacy increases with an increased dose rate from 1.0 L/ha to 1.4 L/ha. Also, this trend appears stronger as the disease pressure increases and the closer the observation is to harvest. For the rates of 1.2 and 1.4 L/ha it was often observed that the performance of the product was statistically equivalent or very comparable. Therefore, it is envisaged that in most instances applications of 1.2 L/ha will be sufficient for the control of *Rhynchosporium secalis* on barley but in case of heavy infestation, 1.4 L/ha may be more adequate to obtain higher disease control on rye.

On rye, leaf blotch remains more occasional than on barley crops and since in the fields a complex of disease is often observed instead of a single disease and since the datasets included in this dossier showed that the rates of 1.2-1.4 L/ha generally gave adequate disease control, it is supposed that the same dose range will be acceptable to control *Rhynchosporium secalis* on rye.

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose to control of *Rhynchosporium secalis* in winter rye in the South-East EPPO climatic zone. The cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.

Winter Rye (SECCW) – Powdery mildew of cereals (ERYSGR - *Blumeria graminis*)

No data is available to support the target dose of CA3642 against *Blumeria graminis* on rye. However, the species *Blumeria graminis* is also the causal agent of powdery mildew on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on rye from the robust dataset presented for the other cereal winter wheat.

The dataset presented in – **Winter wheat (TRZAW) /** *Blumeria graminis* **(ERYSGR)** – showed that in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were done.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented above, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control *Blumeria graminis* on rye in the Central Regulatory zone.

Winter Rye (SECCW) – Head blight of cereals (FUSASP – *Fusarium spp.*)

No data were available to support the target dose of CA3642 against *Fusarium spp.* on winter rye in the Maritime, North-east and South-East EPPO zone. However, the species *Fusarium spp.* is also the causal agent of head blight of cereals on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on winter wheat from the robust dataset presented for the closely related crop winter rye.

The dataset presented in – **Winter wheat (TRZAW) / FUSASP – *Fusarium spp*.** – showed that an overall trend can be observed whereby sufficient efficacy was observed with an applied dose rate rang-

ing from 1.2 L/ha to 1.4 L/ha. Also, this trend appears stronger as the disease pressure increases and the closer the observation is to harvest. For these rates of 1.2 and 1.4 L/ha it was often observed that the performance of the product was statistically equivalent or very comparable. Therefore, it is envisaged that in most instances applications of 1.2 L/ha will be sufficient for the control of FUSASP – *Fusarium spp.* on rye but in case of heavy infestation, 1.4 L/ha may be more adequate to obtain higher disease control on winter rye.
For wheat, in all trial assessments across available Maritime EPPO zone applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.

Considering all elements presented above, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control *Fusarium spp.* on winter rye in the Maritime, North-east and South-East EPPO zone.

Winter Rye (SECCW) – Green leaf area

SECCW – Green leaf area – Maritime EPPO zone

Five trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye, assessed in terms of green leaf area. Trials were carried out in Denmark (1 trial), Great Britain (2 trials) and Germany (2 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-35 days later, at BBCH 42-59.

Table 3.2-183: Minimum effective dose of CA3642 assessed as green leaf area in winter rye – Maritime EPPO zone

Part rated assm. timing	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PLANT	DNK	67	53			45.0 e 100	**76.3 a 169.6**	**71.3 a 158.4**	71.3 a 158.4
	GBR	65	49			0.0 c 0	**60.0 a**	**58.8 ab**	50.0 ab
	DEU	74	55			33.8 b 100	**65.0 a 192.3**	**60.0 a 177.5**	66.3 a 196.2
	DEU	62	42			18.8 c 100	**35.0 a 186.2**	**35.0 a 186.2**	35.0 a 186.2
	GBR	72	37			70.0 b 100	**88.3 a 126.1**	**88.0 a 125.7**	90.0 a 128.6
Mean GLA as % of UT				4	Mean Min Max	41.9 18.8 70.0	***168.5*** **126.1 192.3**	***162.0*** **125.7 186.2**	*167.3* 128.6 196.2
PLANT late	DNK	82	68			4.3 a 100	**17.5 a 407.0**	**13.8 a 320.9**	17.5 a 407.0
Mean GLA as % of UT				1		4.3	***407.0***	***320.9***	*407.0*

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed on the whole plant at 37-55 DA-B. In three trials several pathogens were present. In one trial just PUCCRR and in another trial just SEPTTR was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 62-69 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 67 %.

The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha as well as by the reduced dose rate (1.0 L/ha) was statistically significant compared to the untreated control in all trials.
One trial is not considered for mean calculation since it is not possible to calculate with a value of 0 % green leaf area. This trial, with a maximum of damaged leaf area is characterized by a 10 % difference in green leaf area between the highest intended dose rate (1.4 L/ha) and the reduced dose rate (1.0 L/ha). The findings support the intention of the applicant to register a dose range, which would give the farmer the flexibility to react with adapted dose rates to different disease pressures.

Comments of zRMS:

The mean green leaf area increased by 68,5% after 2 applications of CA3642 at 1,4 l/ha and 62% at 1,2 l/ha in 4 efficacy trials. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

SECCW – Green leaf area – North-East EPPO zone

Three trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye, assessed in terms of green leaf area. Trials were carried out in Poland (2 trials) and Latvia (1 trial) between 2019 and 2020.
The first application took place at crop stage BBCH 31-37 and the second application was done 15-30 days later, at BBCH 51-57.

Table 3.2-184: Minimum effective dose of CA3642 assessed as green leaf area in winter rye – North-East EPPO zone

Part rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PLANT	POL	59	29			41.3 a 100	**47.5 a 115.0**	**46.3 a 112.1**	45.0 a 109.0
	POL	59	44			28.8 c 100	**42.5 a 147.6**	**38.8 ab 134.7**	37.5 ab 130.2
	LVA	69	39			34.3 b 100	**42.5 a 123.9**	**41.3 ab 120.4**	41.8 ab 121.9
Mean GLA as % of UT				3	*Mean* Min Max	*34.8* 28.8 41.3	***128.8*** **115.0** **147.6**	***122.4*** **112.1** **134.7**	*120.3* 109.0 130.2

UTC: % green leaf area in untreated control at assessment date

Efficacy in terms of green leaf area was assessed on the whole plant at 29-44 DA-B. In each of these trials just a single disease was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 20-29 % compared to the untreated control. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 20 %. The increase of green leaf area induced by CA3642 at 1.4 L/ha was statistically significant compared to the untreated control in two out of three trials. The difference between the untreated control and CA3642 applied at 1.2 L/ha and at the reduced dose rate (1.0 L/ha) was statistically significant in one trial.

Comments of zRMS:

The mean green leaf area increased by 28,8% after 2 applications of CA3642 at 1,4 l/ha and 22,4% at 1,2 l/ha. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Positive impact on green leaf area has been noted.

SECCW – Green leaf area – South-East EPPO zone

Three trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.2-1.4 L/ha of CA3642 applied up to two times in winter rye, assessed in terms of green leaf area. Trials were carried out in Hungary (1 trial) and Romania (2 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 19-30 days later, at BBCH 41-59.

Table 3.2-185: Minimum effective dose of CA3642 assessed as green leaf area in winter rye – South-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**
PLANT	HUN	60	38			40.0 a 100	**80.0 a 200.0**	**80.0 a 200.0**	80.0 a 200.0
	ROU	77	47			25.0 b 100	**50.0 a 200.0**	**47.5 a 190.0**	50.0 a 200.0
Mean GLA as % of UT				2	Mean Min Max	32.5 25.0 40.0	***200.0*** **200.0 200.0**	***195.0*** **190.0 200.0**	*200.0* 200.0 200.0
LEAF1	ROU	44	25			21.3 b 100	**57.0 a 267.6**	**54.8 a 257.3**	55.8 a 262.0
Mean GLA as % of UT				1		21.3	***267.6***	***257.3***	*262.0*
LEAF2	ROU	44	25			3.8 b 100	**18.3 a 481.6**	**17.3 a 455.3**	17.5 a 460.5
Mean GLA as % of UT				1		3.8	***481.6***	***455.3***	*460.5*

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed in two trials on the whole plant at 38-47 DA-B. In one trial green leaf area was assessed on leaf level 1 and 2 at 25 DA-B. In one trial several pathogens were present. In the other trials just a single disease was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 95-100 % on the whole plant compared to the untreated control. This increase was statistically significant compared to untreated control in 1 trial out of two. The reduced dose rate 1.0 L/ha increased the mean green leaf area by 100 %.

On leaf level 1 an increase by 157-168 % and on leaf level 2 an increase by 355-382 % was observed. The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha on leaf level 1 and 2 was statistically significant compared to the untreated control. No differences were observed compared to the reduced dose rate (1.0 L/ha).

Comments of zRMS:

Taking into account all plants, the mean green leaf area increased by 100% after 2 applications of CA3642 at 1,4 l/ha and 95% at 1,2 l/ha. Also increase of GLA was visible on L1 and L2, with results of 167,6% and 381,6% respectively. No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Rye - Summary and conclusions on the minimum effective dose

On rye, three foliar diseases were assessed in 11 trials across three EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2 and 3. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

Overall, across the three EPPO zones and all diseases, a dose rate response was observed for higher disease control with higher dose rates. In particular, the rates of 1.2-1.4 L/ha generally gave significantly better control compared to the rate of 1.0 L/ha. In many of the dataset there was no statistical differences between the dose rates of 1.2 L/ha or 1.4 L/ha, however it was frequently observed that where disease severity was higher, a significant benefit was derived from increasing the dose rate from 1.2 to 1.4 L/ha while in circumstances of low disease pressure, the 1.2 L/ha dose rate was sufficient to give comparable disease control. Due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate may be deemed more appropriate and should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In addition, the data demonstrates overall similar effects for the targeted diseases regardless of EPPO zone. Similarly, the same dose rate trends were observed for improving green leaf area in situations of infection from a single pathogen or in cases of disease complexes. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

In this dossier data presented for minimum effective dose is primarily from assessments where 2 applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved with 1.2-1.4 L/ha depending on the disease pressure. According to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications.

Therefore, a minimum effective dose rate of 1.2-1.4 L/ha is proposed for CA3642 on rye in each of the EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control a range of foliar diseases on rye.

Oats (AVESS)

A total of two trials were carried out on oats in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.0 L/ha for CA3642.
Data are presented for the key representative use on oat, PUCCCA/PUCCCO. Results from a total of two valid trials are presented in this chapter.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Oats (AVESS)
Table 3.2-260.

Oats (AVESS) – Oat crown rust (PUCCCA/PUCCCO - *Puccinia coronata (var. avenae)*)

In some trials the pathogen was described in the trial reports as PUCCCA (*Puccinia coronata var. avenae*), which is the specific nomenclature for crown rust of oats, as provided in the EPPO global database. In other trials the pathogen is described only as PUCCCO (*Puccinia coronata*), with no specificity as to the variety. Reference to the EPPO database however indicates that these are the same species, and it is likely that both pathogens are indeed specifically PUCCCA. Therefore, both dataset are merged in this dossier.

Two field trials were established in 2021 in order to determine the minimum effective dose for the control of the PUCCCA/PUCCCO in oats. The trial from the South-East EPPO zone was carried out

in Romania (1 trial), and the trial from the North-East zone was carried out in Poland (1 trial).
CA3642 was tested at the intended dose rate, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-186 and Table 3.2-187.

AVESS – PUCCCA/PUCCCO – South-East EPPO zone

One trial was available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PUCCCA/PUCCCO in the South-East EPPO zone. The trial was carried out in Romania in 2021.
The first application took place at a crop stage of BBCH 37 and the second application was done at BBCH 59, 14 days later.

Table 3.2-186: Minimum effective dose of CA3642 against PUCCCA/PUCCCO in AVESS – valid assessments – South-east EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM code***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 early	ROU	30.0	16.0		PESSEV Efficacy	13.8 a	1.5 b 89.1	1.9 b 86.2
Mean efficacy				*1*	*Mean*	*13.8*	*89.1*	*86.2*
LEAF1 late	ROU	39.0	25.0	TA	PESSEV Efficacy	17.6 a a	**3.1 b** **82.4** **b**	3.6 b 79.5 b
Mean efficacy				*1*	*Mean*	*17.6*	***82.4***	*79.5*
LEAF2 early	ROU	30.0	16.0		PESSEV Efficacy	4.7 a	**1.8 b** ~~61.7~~ **62.1**	2.3 b ~~51.1~~ 50.1
Mean efficacy				*1*	*Mean*	*4.7*	*~~61.7~~* ***62.1***	*~~51.1~~* *50.1*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

A numerical, albeit not statistically significant difference, was observed between treatments with the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) in all assessments at both assessment timings on all leaf levels, with efficacy values 3-10 % higher.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose for control of *Puccinia coronata* in oats in the South-East EPPO climatic zone. CA3642 applied at dose rate of 1 l/ha achieved high result of >80% after 2 applications. The lower dose of 0,6 l/ha had slight inferior control in late observation. No statistical differences between dose rates of 0,6 and 1 l/ha can be observed.

AVESS – PUCCCA/PUCCCO – North-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha against PUCCCA/PUCCCO in the North-East EPPO zone. The trial was carried out in Poland in 2021.

The first application took place at BBCH 32 and the second application was done at BBCH 55, 19 days later.

Table 3.2-187: Minimum effective dose of CA3642 against PUCCCA/PUCCCO in AVESS – valid assessments – North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 late	POL	48.0	29.0		PESSEV Efficacy	20.8 a	**1.8 c** **91.3**	3.9 c ~~81.3~~ 81.5
Mean efficacy				*1*	*Mean*	*20.8*	***91.3***	*~~81.3~~ 81.5*
LEAF2 late	POL	48.0	29.0		PESSEV Efficacy	5.4 a	**0.5 c-f** ~~90.7~~ **91.7**	0.8 c ~~85.2~~ 85.5
Mean efficacy				*1*	*Mean*	*5.4*	*~~90.7~~* ***91.7***	*~~85.2~~ 85.5*

[b] UTC: % infestation in untreated control at assessment date

A numerical difference was observed between treatments with the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) in all assessments at both assessment timings on all leaf levels, with efficacy values 5-10 % higher. Efficacy over all leaf level after application of CA3642 at 1.0 L/ha was 91 % and efficacy of the reduced dose rate varied between 81-85 %.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose for control of *Puccinia coronata* in oats in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved high result of >90% after 2 applications. The lower dose rate of 0,6 l/ha was slight inferior but still on sufficient level of control (>80%).

Oats (AVESS) – Green leaf area

AVESS – Green leaf area – North-East EPPO zone

One trial was assessed for the North-East EPPO zone to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in oat, assessed in terms of green leaf area. The trial was carried out in Poland in 2021.
The first application took place at crop stage BBCH 32 and the second application was done 19 days later, at BBCH 55.

Table 3.2-188: Minimum effective dose of CA3642 assessed as green leaf area in oat – North-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
PLANT	POL	48	29		GRNARE %	23.8 c 100	**31.3 ab** **131.5**	30.0 abc 126.1
Mean GLA as % of UT				*1*		*23.8*	***131.5***	*126.1*

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed on the whole plant at 29 DA-B, where only a single

disease was assessed.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 31.5 % compared to the untreated control. The reduced dose rate 0.6 L/ha increased the mean green leaf area by 26.1 %. The increase of green leaf area induced by CA3642 at 1.0 L/ha was not statistically significant compared to the lower dose rate but was when compared to the untreated control.

Comments of zRMS:

The mean green leaf area in oats increased by 31,5% after 2 applications of CA3642 at 1 l/ha and 26,1% at 0,6 l/ha. No statistical differences between doses rates can be observed in the North-East EPPO climatic zone. Positive impact on green leaf area has been noted.

AVESS – Green leaf area – South-East EPPO zone

One trial from the South-East EPPO zone is available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in oat, assessed in terms of green leaf area. The trial was carried out in Romania in 2021.
The first application took place at crop stage BBCH 37 and the second application was done 14 days later, at BBCH 59.

Table 3.2-189: Minimum effective dose of CA3642 assessed as green leaf area in oat – South-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
PLANT	ROU	39	25			11.3 b 100	**27.5 a** **243.4**	26.3 a 232.7
Mean GLA as % of UT				*1*	*Mean*	*11.3*	***243.4***	*232.7*

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed in one trial on the whole plant at 25 DA-B, where only a single disease was assessed.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 143.4 % on the whole plant compared to the untreated control. This increase was statistically significant compared to untreated control. The reduced dose rate 0.6 L/ha increased the mean green leaf area by 132.7 %.

No significant difference was observed when dose rate 1.0 L/ha was compared to the reduced dose rate 0.6 L/ha.

Comments of zRMS:

The mean green leaf area increased by 143,4% after 2 applications of CA3642 at 1 l/ha and 132,7% at 0,6 l/ha. No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Oat - Summary and conclusions on the minimum effective dose

On oat, the key representative intended use PUCCCA/PUCCCO were assessed in a total of two trials across two EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1 and 2. Although a comprehensive trial programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved for the minimum effective dose rate.

Overall, across the EPPO zones a dose rate response was observed for higher disease control with a higher dose rate. In particular, the rates of 1.0 L/ha generally gave significantly higher control compared to the rate of 0.6 L/ha. The remaining label claims, ERYSGA and PYRNAV, can be extrapolated based on this data along with the 22 and 30 trials which were used to motivate the minimum effective dose for spring barley (HORVS) and winter barley (HORVW) respectively at the same tested dose rate as oats (AVESS).

Therefore, a minimum effective dose rate of 1.0 L/ha is proposed for CA3642 on oat in each of the EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.0 L/ha is the minimum effective dose to control a range of foliar diseases on oat.

Comments of zRMS:

In opinion of zRMS, insufficient number of efficacy trials were available to determine minimum effective dose rate in oat, either in the NE and SE EPPO zones. In addition, there was no MED assessment for the Maritime zone. Furthermore, no significant differences between doses of 0,6 and 1 l/ha have been observed in 2 trials. Applicant concluded that the rates of 1 l/ha generally gave significantly higher control compared to the rate of 0,6 l/ha. Only one disease pathogen of PUCCCO/PUCCCA was assessed. Such limited evidences cannot be used as basis for accepting a dose rate of 1 l/ha as MED in oats. The cMSs are kindly asked to consider this conclusion on national level.

Winter barley (HORVW)

A total of 15 trials were carried out recently on winter barley in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.0 L/ha CA3642 for the control of ERYSGH, PUCCHD, PYRNTE, RAMUCC and RHYNSE. Results from a total of 15 valid trials are presented in this chapter.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in
Winter barley (HORVW)

Table 3.2-263.

Winter barley HORVW – powdery mildew of barley (ERYSGH - *Blumeria graminis* f. sp. *hordei*)

Nine field trials were established in 2021 in order to determine the minimum effective dose for the control of the ERYSGH in winter barley. Trials from the Maritime EPPO zone were carried out in Great Britain and Germany (2 trials), ~~the trial from the Mediterranean EPPO zone was carried out in Spain (1 trial),~~ four trials from the North-East EPPO zone were carried out in Latvia (2 trials), Lithuania (1 trial) and Poland (1 trial) and two trials from the South-East EPPO zone were carried out in Hungary (2 trials).
CA3642 was tested at the intended dose rates, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rates of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose*'.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-190, Table 3.2-191 and
Table 3.2-193.

HORVW – ERYSGH – Maritime EPPO zone

A total of two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against ERYSGH. The trials were carried out in Great Britain and Germany, in 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14 -22 days later, at BBCH 43-61.

Table 3.2-190: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against ERYSGH – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type Rate**	**UTC[b]**	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	
							1.0 L/ha	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 late	GBR	57	35		PESSEV Efficacy	20.9 a -	**0.0 d 100.0**	0.0 d 100.0
	DEU	57	36		PESSEV Efficacy	4.0 a -	**0.0 c 100.0**	0.0 c 100.0
Mean efficacy				*2*	*Mean* Min Max	*12.5* 4.0 20.9	***100.0*** **100.0** **100.0**	*100.0* 100.0 100.0
LEAF2 early	GBR	37	15		PESSEV Efficacy	50.4 a -	**0.0 d 100.0**	0.0 d 100.0
Mean efficacy				1	*Mean*	50.4	**100.0**	100.0
LEAF2 late	GBR	57	35		PESSEV Efficacy	70.5 a -	**2.2 d 96.9**	2.7 d 96.2
	DEU	57	36		PESSEV Efficacy	5.1 a -	**0.0 d 100.0**	0.0 d 100.0
Mean efficacy				*2*	*Mean* Min Max	*37.8* 5.1 70.5	***98.1*** **96.9** **100.0**	*98.1* 96.2 100.0
LEAF3 late	GBR	37	15		PESSEV Efficacy	89.5 a -	**0.0 c 100.0**	0.0 c 100.0
Mean efficacy				*1*	*Mean*	89.5	***100.0***	*100.0*
Efficacy after 1 application								
LEAF2	GBR	22	-		PESSEV Efficacy	4.9 a -	**0.0 c 100.0**	0.0 c 100.0
Mean efficacy				*1*	*Mean*	*4.9*	***100.0***	*100.0*
LEAF3	GBR	22	-		PESSEV Efficacy	20.3 a -	**0.0 c 100.0**	0.0 c 100.0
Mean efficacy				*1*	*Mean*	*20.3*	***100.0***	*100.0*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

No dose response could be observed in the assessments. Excellent control of ERYSGH (95 % - 100 %) was achieved in all assessment after application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha) in these trials.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose for control of *Blumeria graminis* f.sp. *hordei* in winter barley in the Maritime EPPO climatic zone. CA3642 at 0,6 l/ha and 1 l/ha achieved full effectiveness after 1-2 applications. High results were visible on L1-L3, either in the early and late assessment. No dose response was observed and limited number of trials was available.

HORVW – ERYSGH – North-East EPPO zone

A total of four trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against ERYSGH. The trials were carried out in Poland, Latvia and Lithuania in 2021.
The first application took place at crop stage BBCH 31-33 and the second application was done 16-22 days later, at BBCH 49-55.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Germany is presented to justify the minimum effective dose of 1.0 L/ha CA3642 applied up to two times in winter barley against ERYSGH. CA3642 was first applied at crop stage BBCH 31 and the second application was done 14 days later, at BBCH 43.

Table 3.2-191: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against ERYSGH – valid assessments – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ**	**0.6 L/ha 90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF2 early	LVA	35	14		PESSEV Efficacy	8.4 a -	**0.8 c** **90.5**	1.3 c 84.5
	LVA	35	14	TA	PESSEV Efficacy	5.6 a - a	**0.4 c** **92.9** **d**	0.4 c 92.9 d
	LTU	35	17	P	PESSEV Efficacy	6.7 a -	**0.1 c** **98.5**	0.5 c 92.5
Mean efficacy				3	*Mean* Min Max	*6.9* 5.6 8.4	***93.9*** **90.5** **98.5**	*90.0* 84.5 92.9
LEAF2 late	LTU	50	32	P TA	PESSEV Efficacy	4.7 a - a	**0.2 b** **95.7** **c**	0.3 b 93.6 c
Mean efficacy				*1*	*Mean*	4.7	***95.7***	*93.6*
LEAF3 early	POL	30	14		PESSEV Efficacy	14.3 a -	**0.3 c** **97.9**	0.3 c 97.9
	LVA	35	14	TA	PESSEV Efficacy	17.0 a - a	**1.6 c** **90.6** **c**	2.3 c 86.5 c
	LVA	35	14		PESSEV Efficacy	10.5 a -	**0.8 c** **92.4**	0.7 c 93.3
	LTU	35	17	P	PESSEV Efficacy	13.3 a -	**0.1 b** **99.2**	0.1 b 99.2
Mean efficacy				*4*	*Mean* Min Max	*13.8* 10.5 17.0	***95.0*** **90.6** **99.2**	*94.2* 86.5 99.2
Efficacy after 1 application								
LEAF3 early	POL	16	-		PESSEV Efficacy	10.3 a -	**0.3 d** **97.1**	0.3 d 97.1
Mean efficacy				*1*	*Mean*	*10.3*	***97.1***	*97.1*
LEAF3 late	LVA	20	-		PESSEV Efficacy	6.8 a -	**0.1 d** **98.5**	0.2 d 97.1
Mean efficacy				1	*Mean*	*6.8*	***98.5***	*97.1*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-192: Efficacy of CA3642 (1.0 L/ha) in HORVW against ERYSGH – supporting trials from Germany

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type Rate	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	
							1.0 L/ha **150 g/ha AZX + 150 g/ha PTZ**	**0.6 L/ha** **90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 late	DEU	57	36		PESSEV	4.0 a	**0.0 c**	0.0 c
					Efficacy	-	**100.0**	100.0
Mean efficacy				*1*	*Mean*	*12.5*	***100.0***	*100.0*
LEAF2 late	DEU	57	36		PESSEV	5.1 a	**0.0 d**	0.0 d
					Efficacy	-	**100.0**	100.0
Mean efficacy				*1*	*Mean*	*37.8*	***98.4***	*98.1*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

In the North-East EPPO zone, after two applications at an early assessment date (14-17 DA-B), a numerical difference between the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) was observed on leaf level 2 in two out of three trials. No clear dose response was observed in one trial. No clear dose response was observed at a later assessment date (32 DA-B) for one trial at leaf level 2.
After two applications at leaf level 3, no dose response was observed between the intended dose rate (1.0 L/ha) and the lowered dose rate (0.6 L/ha) in two out of four trials. A numerical dose response was recorded in one trial between the intended dose rate (1.0 L/ha, 90.6 %) and the reduced dose rate (0.6 L/ha: 86.5 %).
After one application, no dose response could be observed in the assessments. Excellent control of ERYSGH (95 % - 100 %) was achieved in all assessment after application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha).

In the supporting trial from Germany, no statistically significant differences were observed between the intended (1.0 L/ha) and the reduced (0.6 L/ha) dose rate. Efficacy over all leaf level after application of CA3642 at 1.0 L/ha ranged between 98.4 and 100 %, and efficacy of the reduced dose rate varied between 98.1 and 100 %.

Comments of zRMS:

4 efficacy trials have been submitted to determine minimum effective dose for control of *Blumeria graminis* f.sp. *hordei* in winter barley in the North-East EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved high effectiveness after 1-2 applications. No dose response was visible and similar effect was observed for both dose rates. Furthermore, 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. Also comparable effectiveness between dose rates of 0,6 l/ha and 1 l/ha has been noted in this trial.

HORVW – ERYSGH – South-East EPPO zone

A total of two trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against ERYSGH. The trials were carried out in Hungary in 2021.
The first application took place at crop stage BBCH 32 and the second application was done 25-28 days later, at BBCH 59-61.

Table 3.2-193: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against ERYSGH – valid assessments – South-East EPPO zone

Leaf level assm. Timing	Country	DA - A	DA - B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ**	**0.6 L/ha 90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 early	HUN	43	15		PESSEV Efficacy	9.9 a -	**0.0 e** **100.0**	0.8 d 91.9
Mean efficacy				*1*	*Mean*	*9.9*	***100.0***	*91.9*
LEAF1 late	HUN	55	27		PESSEV Efficacy	10.0 a -	**0.0 a** **100.0**	0.0 a 100.0
	HUN	55	30		PESSEV Efficacy	10.0 a -	**0.0 a** **100.0**	0.0 a 100.0
Mean efficacy				*2*	*Mean* Min Max	*10.0* 10.0 10.0	***100.0*** **100.0** **100.0**	*100.0* 100.0 100.0
LEAF2 early	HUN	40	15		PESSEV Efficacy	8.9 a -	**0.0 f** **100.0**	0.0 f 100.0
	HUN	43	15	TA	PESSEV Efficacy	38.6 a - a	**1.1 f** **97.2** **f**	4.0 e 89.6 e
Mean efficacy				2	*Mean* Min Max	*23.8* 8.9 38.6	***98.6*** **97.2** **100.0**	*94.8* 89.6 100.0
LEAF2 late	HUN	55	27		PESSEV Efficacy	58.4 a -	**5.0 f** **91.4**	5.0 f 91.4
	HUN	55	30		PESSEV Efficacy	30.0 a -	**0.0 a** **100.0**	1.0 a 96.7
Mean efficacy				2	*Mean* Min Max	*44.2* 30.0 58.4	***95.7*** **91.4** **100.0**	*94.1* 91.4 96.7
LEAF3 early	HUN	40	15		PESSEV Efficacy	38.8 a -	**0.0 h** **100.0**	0.9 h 97.7
	HUN	43	15		PESSEV Efficacy	60.0 a -	**6.4 e** **89.3**	9.3 d 84.5
Mean efficacy				2	*Mean* Min Max	*49.4* 38.8 60.0	***94.7*** **89.3** **100.0**	*91.1* 84.5 97.7
LEAF3 late	HUN	55	30		PESSEV Efficacy	70.0 a -	**0.0 g** **100.0**	5.0 f 92.9
Mean efficacy				1	*Mean*	*70.0*	***100.0***	*92.9*
Efficacy after 1 application								
LEAF2 late	HUN	25	0		PESSEV Efficacy	8.9 a -	**0.0 f** **100.0**	0.0 f 100.0
	HUN	28	0	TA	PESSEV Efficacy	8.8 a - a	**3.4 bc** **61.4** **bc**	3.1 bc 64.8 bc
Mean efficacy				*2*	*Mean* Min Max	*8.9* 8.9 8.8	***80.7*** **61.4** **100.0**	*82.4* 64.8 100.0
LEAF3 late	HUN	25	25		PESSEV Efficacy	25.9 a -	**0.0 g** **100.0**	0.0 g 100.0
	HUN	28	28		PESSEV Efficacy	35.6 a -	**4.8 e** **86.5**	5.5 e 84.6
Mean efficacy				*2*	*Mean* Min Max	*30.8* 25.9 35.6	***93.3*** **86.5** **100.0**	*92.3* 84.6 100.0

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications, a statistically significant difference was observed between treatments with the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) in four out of ten assessments at both assessment timings on all leaf levels, with efficacy values 3-7% higher. In addition, a clear numerical difference, was observed between treatments with the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) in two out of ten assessments at both assessment timings on all leaf levels, with efficacy values 2-3 % higher.
After one application, a numerically difference was observed between treatments with the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) in two out of four assessments at both assessment timings on all leaf levels.

To ensure sufficient and reliable control of ERYSGH, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.0 L/ha.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose for control of *Blumeria graminis* f.sp. *hordei* in winter barley in the South-East EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved good results after 1-2 applications. Very similar effect was visible between dose rates. After 1 application, the test product presented results of 80,7% vs 82,4% on L2 and 93,3% vs 92,3% on L3 in the late assessment. Full effectiveness for both dose rates were observed after 2 applications on L1 in the late assessment. Slight differences have been noted in the initial observations however no clear dose response was in the submitted trials. Also limited number of trials was available.

Winter Barley (HORVW) – Brown rust of barley (PUCCHD - *Puccinia hordei*)

Seven field trials were established in 2021 in order to determine the minimum effective dose for the control of the PUCCHD in winter barley. The trial from the Maritime EPPO zone was carried out in Germany (1 trial), five trials from the North-East EPPO zone were carried out in Latvia (2 trials) and Poland (3 trials) and one trial from the South-East EPPO zone was carried out in Hungary.
CA3642 was tested at the intended dose rates, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose’*.

Summaries of the dose response results grouped by EPPO zone are provided in
Table 3.2-193, Table 3.2-195 and Table 3.2-197.

HORVW – PUCCHD – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against PUCCHD. The trial was carried out in Germany in 2021.
The first application took place at crop stage BBCH 31 and the second application was done 21 days later, at BBCH 39.

Table 3.2-194: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against PUCCHD – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	
					Rate		1.0 L/ha 150 g/ ha AZX + 150 g/ ha PTZ	0.6 L/ha 90 g/ ha AZX + 90 g/ ha PTZ
Efficacy after 2 applications								

LEAF1 late	DEU	57	36	- TL	PESSEV Efficacy	18.6 a - a	**0.0 b** **100.0** **e**	0.0 b 100.0 e
Mean efficacy				1	*Mean*	18.6	***100.0***	*100.0*
LEAF2 late	DEU	57	36	-	PESSEV Efficacy	5.9 a -	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1	*Mean*	5.9	***100.0***	*100.0*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

No dose response could be observed in the assessments. Excellent control of PUCCHD (100 %) was achieved in all assessments after application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha) in this trial.

Comments of zRMS:

Only 1 trial has been submitted to determine minimum effective dose for control of *Puccinia hordei* in winter barley in the Maritime EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved full effectiveness after 2 applications. No dose response was visible and limited number of trials was available.

HORVW – PUCCHD – North-East EPPO zone

A total of five trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against PUCCHD. The trials were carried out in Poland and Latvia in 2021.
The first application took place at crop stage BBCH 32-37 and the second application was done 19-22 days later, at BBCH 39-59.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Germany is presented to justify the minimum effective dose of 1.0 L/ha CA3642 applied up to two times in winter barley against ERYSGH. CA3642 was first applied at crop stage BBCH 31 and the second application was done 21 days later, at BBCH 39.

Table 3.2-195: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against PUCCHD – valid assessments – North-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 late	POL	49	28	TL	PESSEV Efficacy	10.9 a - a	**1.4 c** **87.2** **cd**	1.0 c 90.8 d
	LVA	48	27		PESSEV Efficacy	13.8 a -	**0.0 b** **100.0**	0.0 b 100.0
	LVA	48	27		PESSEV Efficacy	19.0 a -	**0.0 b** **100.0**	0.0 b 100.0
	POL	50	31	TA	PESSEV Efficacy	5.3 a - a	**0.7 b** **86.8** **bc**	0.9 b 83.0 bc
Mean efficacy				4	*Mean* Min Max	*12.3* 5.3 19.0	***93.7*** **86.8** **100.0**	*94.2* 83.0 100.0
LEAF2 early	POL	33	14		PESSEV	5.6 a	**0.5 d**	0.8 cd

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ha PTZ**	**0.6 L/ha** **90 g/ha AZX + 90 g/ha PTZ**
				TA	Efficacy	- a	**91.1** **c**	85.7 c
	POL	35	13	TA	PESSEV Efficacy	15.6 a - a	**0.5 b** **96.8** **cd**	0.5 b 96.8 cd
Mean efficacy				2	*Mean* Min Max	*10.6* 5.6 15.6	***93.9*** **91.1** **96.8**	*91.3* 85.7 96.8
LEAF3 early	POL	35	13	TL	PESSEV Efficacy	33.5 a - a	**1.0 b** **97.0** **c-f**	1.2 b 96.4 c-f
Mean efficacy				*1*	*Mean*	33.5	***100.0***	*100.0*
Efficacy after 1 application								
LEAF3 early	POL	14	0		PESSEV Efficacy	8.0 a -	**0.4 c** **95.0**	0.4 c 95.0
Mean efficacy				*1*		8.0	***95.0***	*95.0*
LEAF3 late	POL	22	0		PESSEV Efficacy	8.6 a -	**0.7 b** **91.9**	0.5 b 94.2
Mean efficacy				*1*	*Mean*	8.6	***91.9***	*94.2*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-196: Efficacy of CA3642 (1.0 L/ha) in HORVW against PUCCHD – supporting trials from Germany

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC [b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	
					Rate		**1.0 L/ha** **150 g/ ha AZX + 150 g/ ha PTZ**	**0.6 L/ha** **90 g/ ha AZX + 90 g/ ha PTZ**
Efficacy after 2 applications								
LEAF1 late	DEU	57	36	- TL	PESSEV Efficacy	18.6 a - a	**0.0 b** **100.0** **e**	0.0 b 100.0 e
Mean efficacy				1	*Mean*	18.6	***100.0***	*100.0*
LEAF2 late	DEU	57	36	-	PESSEV Efficacy	5.9 a -	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1	*Mean*	5.9	***100.0***	*100.0*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications, no clear dose response could be observed in four assessments on leaf level 1 27-28 DA-B, in two assessments at leaf level 2 after 13-14 DA-B and at leaf level 3 after 13 DA-B. Excellent control (95 – 100 %) was achieved for the target dose rate of 1.0 L/ha and for the lowered dose rate (0.6 L/ha) in four out of six assessments.

After one application, no dose response could be observed in the assessments. Good or even excellent control of PUCCHD with an efficacy > 90 % was achieved in all assessments after application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha).

In the supporting trial from Germany, no dose response could be observed in the assessments. Excellent control of PUCCHD (100 %) was achieved in all assessments after application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha).

Comments of zRMS:

5 efficacy trials have been submitted to determine minimum effective dose for control of *Puccinia hordei* in winter barley in the North-East EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved high effectiveness after 1-2 applications. Similar effect between dose rates was observed and no clear dose response has been noted. Also 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. Full control was detected in this trial for both dose rates of 0,6 l/ha and 1 l/ha.

HORVW – PUCCHD – South-East EPPO zone

One trial from the South-East EPPO zone is available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against PUCCHD. The trial was carried out in Hungary in 2021.
The first application took place at crop stage BBCH 32 and the second application was done 19 days later, at BBCH 52.

Table 3.2-197: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against PUCCHD – valid assessments – South-East EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		1.0 L/ha	0.6 L/ha
							150 g/ha AZX + 150 g/ha PTZ	90 g/ha AZX + 90 g/ha PTZ
Efficacy after 2 applications								
LEAF1 late	HUN	57	38		PESSEV Efficacy	20.0 a -	**0.0 a 100.0**	0.0 a 100.0
Mean efficacy				1	*Mean*	*20.0*	***100.0***	*100.0*
LEAF2 late	HUN	57	38		PESSEV Efficacy	30.0 a -	**0.0 a 100.0**	0.0 a 100.0
Mean efficacy				1	*Mean*	*30.0*	***100.0***	*100.0*
LEAF3 early	HUN	34	15		PESSEV Efficacy	5.00 a -	**0.00 a 100.0**	0.00 a 100.0
Mean efficacy				1	*Mean*	*5.00*	***100.0***	*100.0*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

No dose response could be observed in the assessments. Excellent control of PUCCHD (100 %) was achieved in all assessment after application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha).

To ensure sufficient and reliable control of PUCCHD, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.0 L/ha.

Comments of zRMS:

Only 1 trial has been submitted to determine minimum effective dose for control of *Puccinia hordei* in winter barley in the South-East EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved full effectiveness after 2 applications. No differences between dose rates were observed on L1-L3, either in the early and late assessment. No dose response was visible.

Winter Barley (HORVW) – Net blotch of barley (PYRNTE - *Pyrenophora teres*)

A total of 9 field trials were established in 2021 in order to determine the minimum effective dose for the control of the PYRNTE in winter barley. The trial from the Maritime EPPO zone was carried out in Germany (1 trial), seven trials from the North-East EPPO zone were carried out in Lithuania (2 trials) and Poland (5 trials) and one trial from the South-East EPPO zone was carried out in Hungary (1 trial).
CA3642 was tested at the intended dose rates, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rates of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-198, Table 3.2-199 and Table 3.2-201.

HORVW – PYRNTE – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against PYRNTE. The trial was carried out in Germany in 2021.
The first application took place at crop stage BBCH 31 and the second application was done 21 days later, at BBCH 39.

Table 3.2-198: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against PYRNTE – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 late	DEU	57	36	-	PESSEV Efficacy	5.0 a -	**3.4 a** **32.0**	4.2 a 16.0
Meanefficacy				*1*	*Mean*	*5.0*	***32.0***	*16.0*
LEAF3 early	DEU	35	14	- TA	PESSEV Efficacy	5.5 a - a	**2.4 b** **56.4** **bc**	1.7 b 69.1 cd
Meanefficacy				*1*	*Mean*	*5.5*	***56.4***	*69.1*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

No dose response was observed after two assessments at 36 and 14 DA-B on leaf level 1 and 3, respectively, comparing the intended dose rate (1.0 L/ha) and the lowered dose rate (0.6 L/ha). After application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha), insufficient control of PYRNTE (0 % - 49.9 %) was achieved at 36 DA-B on leaf level 1 and low control (50 – 69.9 %) was achieved at 14 DA-B on leaf level 3.

Comments of zRMS:

Only 1 trial has been submitted to determine minimum effective dose for control of *Pyrenophora teres* in winter barley in the Maritime EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved insufficient effectiveness after 2 applications on L1 in the late assessment (32% and 16% respectively). Also low results were observed on L3 in the early assessment. No dose response was visible but limited number of trials was available.

HORVW – PYRNTE – North-East EPPO zone

A total of seven trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against PYRNTE. The trials were carried out in Poland and Lithuania in 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 17 – 27 days later, at BBCH 47-59.

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Germany is presented to justify the minimum effective dose of 1.0 L/ha CA3642 applied up to two times in winter barley against ERYSGH. CA3642 was first applied at crop stage BBCH 31 and the second application was done 21 days later, at BBCH 39.

Table 3.2-199: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against PYRNTE – valid assessments – North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 early	POL	45	18		PESSEV Efficacy	5.5 a -	**0.2 d 96.4**	0.4 d 92.7
	POL	39	12		PESSEV Efficacy	8.0 a -	**0.1 h 98.8**	0.5 e-h 93.8
	POL	42	17		PESSEV Efficacy	4.8 a -	**0.3 efg 93.8**	0.6 def 87.5
Mean efficacy				3	*Mean* Min Max	*6.1* 4.8 8.0	***96.3*** **93.8** **98.8**	*91.3* 87.5 93.8
LEAF1 late	POL	58	31		PESSEV Efficacy	9.0 a -	**1.1 de 87.8**	1.2 de 86.7
	POL	56	29		PESSEV Efficacy	13.0 a -	**0.7 f 94.6**	1.0 f 92.3
	POL	49	28		PESSEV Efficacy	5.0 a -	**0.4 c 92.0**	0.4 c 92.0
	POL	59	36	TA	PESSEV Efficacy	4.8 a - a	**0.5 c 89.6 cd**	0.8 c 83.3 c
	LTU	50	33		PESSEV Efficacy	10.2 a -	**4.5 b 55.9**	3.0 b 70.6
	POL	58	33	TL	PESSEV Efficacy	10.4 a - a	**1.1 de 89.4 d**	1.3 de 87.5 cd
	POL	60	37	TA	PESSEV Efficacy	5.6 a - a	**1.5 b 73.2 b**	1.2 b 78.6 bcd
Mean efficacy				7	*Mean* Min Max	*8.3* 4.8 13.0	***83.2*** **55.9** **94.6**	*84.4* 70.6 92.3
LEAF2 early	POL	45	18		PESSEV Efficacy	10.7 a -	**1.2 def 88.8**	1.9 de 82.2
	POL	39	12	TA	PESSEV Efficacy	14.9 a - a	**1.4 fg 90.6 fg**	2.3 def 84.6 ef
	POL	42	17		PESSEV Efficacy	10.7 a -	**1.2 efg 88.8**	2.0 de 81.3
	POL	33	14		PESSEV Efficacy	6.2 a -	**0.4 c 93.5**	0.6 c 90.3

Mean efficacy				4	*Mean* Min Max	*10.6* 6.2 14.9	***90.4*** **88.8** **93.5**	*84.6* 81.3 90.3
LEAF2 late	POL	58	31		PESSEV Efficacy	17.4 a -	**2.6 f** **85.1**	2.9 ef 83.3
	POL	56	29		PESSEV Efficacy	22.2 a -	**2.2 gh** **90.1**	3.3 fg 85.1
	POL	45	29		PESSEV Efficacy	7.4 a -	**0.5 d** **93.2**	0.5 d 93.2
	POL	59	36		PESSEV Efficacy	13.3 a -	**3.9 d** **70.7**	5.3 c 60.2
	LTU	50	33		PESSEV Efficacy	21.6 a -	**10.1 b** **53.2**	10.0 b 53.7
	POL	58	33	TA	PESSEV Efficacy	17.3 a - a	**2.8 e** **83.8** **e**	3.7 e 78.6 de
	POL	50	31		PESSEV Efficacy	4.8 a -	**0.6 b** **87.5**	0.7 b 85.4
	POL	60	37	TA	PESSEV Efficacy	13.9 a - a	**2.8 b** **79.9** **bc**	2.5 b 82.0 bc
	LTU	51	35		PESSEV Efficacy	7.5 a -	**3.2 b** **57.3**	2.8 b 62.7
Mean efficacy				9	*Mean* Min Max	*13.9* 4.8 22.2	***77.9*** **53.2** **93.2**	*76.0* 53.7 93.2
LEAF3 early	POL	45	18		PESSEV Efficacy	18.0 a -	**3.2 de** **82.2**	4.2 cd 76.7
	POL	39	12	TA	PESSEV Efficacy	25.4 a - a	**3.7 fg** **85.4** **gh**	5.6 def 78.0 ef
	POL	42	17		PESSEV Efficacy	18.4 a -	**2.8 efg** **84.8**	4.3 def 76.6
Mean efficacy				3	*Mean* Min Max	*20.6* 18.0 25.4	***84.1*** **82.2** **85.4**	*77.1* 76.6 78.0
Efficacy after 1 application								
LEAF2 early	POL	19	0		PESSEV Efficacy	5.4 a -	**0.4 b** **92.6**	0.4 b 92.6
Mean efficacy				*1*	*Mean*	*5.4*	***92.6***	*92.6*
LEAF3 early	POL	19	0		PESSEV Efficacy	5.7 a -	**0.4 c** **93.0**	0.7 c 87.7
Mean efficacy				*1*	*Mean*	*5.7*	***93.0***	*87.7*
LEAF3 late	POL	27	0		PESSEV Efficacy	5.3 a	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1	*Mean*	*5.3*	***100.0***	*100.0*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-200: Efficacy of CA3642 (1.0 L/ha) in HORVW against PYRNTE – supporting trials from Germany

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 late	DEU	57	36	-	PESSEV Efficacy	5.0 a -	**3.4 a** **32.0**	4.2 a 16.0
Meanefficacy				*1*	*Mean*	*5.0*	***32.0***	*16.0*

LEAF3 early	DEU	35	14	- TA	PESSEV Efficacy	5.5 a - a	**2.4 b** **56.4** **bc**	1.7 b 69.1 cd
Mean efficacy				*1*	*Mean*	*5.5*	***56.4***	*69.1*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications of CA3642, a numerically higher efficacy was observed at early assessment dates (12 – 18 DA-B) on leaf level 1, 2 and 3. In nine out of ten assessments, the intended dose rate (1.0 L/ha) showed a higher efficacy (5 – 8 %) compared to the lowered dose rate (0.6 L/ha) on each assessed leaf level.

At later assessment dates (28-37 DAB) good control was achieved when CA3642 was applied at the intended dose rate (1.0 L/ha, 88 – 94 % efficacy) and at the lower dose rate (0.6 L/ha, 83 – 92 % efficacy) on leaf level 1 in five out of seven assessments. At leaf level 2, good control was observed in five out of nine assessments; efficacy varied between 84 – 93 % and 82 – 93 %, when CA3642 was applied at the intended dose rate (1.0 L/ha) and the reduced dose rate (0.6 L/ha), respectively. On leaf 2 in trial, a statistically significant difference was observed, with the proposed rate providing higher efficacy.

After one application of CA3642, no dose response was observed after one application of CA3642 at the intended dose rate (1.0 L/ha) and the lower dose rate (0.6 L/ha) at early and late assessment dates on leaf level 2 and 3. Good to excellent control was achieved when CA3642 was applied at the intended dose rate (1.0 L/ha, 93 – 100 % efficacy) and at the lower dose rate (0.6 L/ha, 88 – 100 % efficacy).

In the supporting trial from Germany, no dose response was observed after two assessments at 36 and 14 DA-B on leaf level 1 and 3, respectively, comparing the intended dose rate (1.0 L/ha) and the lowered dose rate (0.6 L/ha). After application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha), insufficient control of PYRNTE (0 % - 49.9 %) was achieved at 36 DA-B on leaf level 1 and low control (50 – 69.9 %) was achieved at 14 DA-B on leaf level 3.

Comments of zRMS:

7 trials have been submitted to determine minimum effective dose for control of *Pyrenophora teres* in winter barley in the North-East EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved good effectiveness after 1-2 applications. The mean efficacy was 93-100% at 1 l/ha vs 88-100% at 0,6 l/ha after 1 application. Slight differences between dose rates were observed on L3 in the early assessment (84% vs 77%). No significant differences have been noted in other observations.

HORVW – PYRNTE – South-East EPPO zone

One trial from the South-East EPPO zone is available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against PYRNTE. The trial was carried out in Hungary in 2021.

The first application took place at crop stage BBCH 31 and the second application was done 26 days later, at BBCH 61.

Table 3.2-201: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against PYRNTE – valid assessments – South-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX +	**90 g/ha AZX +**

							150 g/ha PTZ	**90 g/ha PTZ**
Efficacy after 2 applications								
LEAF2 early	HUN	41	15		PESSEV Efficacy	9.4 a -	**0.0 e** **100.0**	0.2 e 97.9
Mean efficacy				1	*Mean*	*9.4*	***100.0***	*97.9*
LEAF3 early	HUN	41	15	TA	PESSEV Efficacy	30.0 a - a	**0.6 g** **98.0** g	4.1 e 86.3 e
Mean efficacy				1	*Mean*	*30.0*	***98.0***	*86.3*
Efficacy after 1 application								
LEAF4 late	HUN	26	0		PESSEV Efficacy	6.50 a -	**0.00 b** **100.0**	0.00 b 100.0
Mean				*1*	*Mean*	*6.5*	***100.0***	*100.0*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications, a statistically significant difference was observed between treatments with the intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) at leaf level 3 at 15 DA-B, with efficacy values 12 % higher, in one out of two assessments.

Excellent control of PYRNTE (100 %) was observed in the assessment after one application of the intended dose rates (1.0 L/ha) as well with the reduced dose rate (0.6 L/ha).

To ensure sufficient and reliable control of PYRNTE, under variable conditions like different disease pressures and to prevent development of resistance, the proposed minimum effective dose is 1.0 L/ha.

Comments of zRMS:

Only 1 trial has been submitted to determine minimum effective dose for control of *Pyrenophora teres* in winter barley in the South-East EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved good effectiveness after 1-2 applications. Full control was visible after 1 application. Slight difference was observed on L3 in the early assessment after 2 applications (98% vs 86%). Limited number of trials was available.

Winter Barley (HORVW) – Ramularia leaf spot of barley (RAMUCC- *Ramularia collo-cygni*)

A total of four field trials were established in 2021 in order to determine the minimum effective dose for the control of the RAMUCC in winter barley. Two trials from the Maritime EPPO zone were carried out in Czech Republic (1 trial) and Great Britain (1 trial), two trials from the North-East EPPO zone were carried out in Poland (2 trials).
CA3642 was tested at the intended dose rates, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rates of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-202 and Table 3.2-203.

HORVW – RAMUCC – Maritime EPPO zone

A total of two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against RAMUCC. The trials were carried out in Great Britain and Czech Republic in 2021.

The first application took place at crop stage BBCH 35-37 and the second application was done 16 days later, at BBCH 54-61.

Table 3.2-202: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against RAMUCC – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF1 late	CZE	48	32		PESSEV	32.6 a	**22.5 bc**	19.6 bc
					Efficacy	-	**31.0**	39.9
	GBR	47	31		PESSEV	89.4 a	**55.0 cd**	55.2 cd
					Efficacy	-	**38.5**	38.3
Mean efficacy				2	*Mean*	*61.0*	***34.7***	*39.1*
					Min	32.6	**31.0**	38.3
					Max	89.4	**38.5**	39.9
LEAF1 very late	GBR	64	48		PESSEV	94.0 a	**83.6 c**	83.2 c
					Efficacy	-	**11.1**	11.5
Mean efficacy				1	*Mean*	*94.0*	***11.1***	*11.5*
LEAF2 late	CZE	48	32		PESSEV	54.0 a	**22.1 bcd**	25.4 bcd
					Efficacy	-	**59.1**	53.0
	GBR	47	31		PESSEV	97.1 a	**73.9 cd**	73.7 cd
					Efficacy	-	**23.9**	24.1
Mean efficacy				2	*Mean*	*75.6*	***41.5***	*38.5*
					Min	54.0	**23.9**	24.1
					Max	97.1	**59.1**	53.0
LEAF2 very late	GBR	64	48		PESSEV	98.9 a	**92.5 b**	92.7 b
					Efficacy	-	**6.5**	6.3
Mean efficacy				1	*Mean*	*98.9*	***6.5***	*6.3*
LEAF3 early	CZE	31	15		PESSEV	5.4 a	**0.5 c**	1.2 bc
					Efficacy	-	**90.7**	77.8
	GBR	33	17		PESSEV	12.2 a	**7.6 c**	5.9 d
					Efficacy	-	**37.7**	51.6
Mean efficacy				2	*Mean*	*8.8*	***64.2***	*64.7*
					Min	5.4	**37.7**	51.6
					Max	12.2	**90.7**	77.8
LEAF4 early	CZE	31	15		PESSEV	19.0 a	**2.6 c**	4.7 bc
					Efficacy	-	**86.3**	75.3
	GBR	33	17		PESSEV	14.6 a	**10.7 bc**	10.8 bc
					Efficacy	-	**26.7**	26.0
Mean efficacy				2	*Mean*	*16.8*	***56.5***	*50.6*
					Min	14.6	**26.7**	26.0
					Max	19.0	**86.3**	75.3

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Early after two applications (15-17 DA-B), the efficacy of CA3642 was assessed on leaf level 3 and 4 in two trials. In one trial, a numerical dose response was observed comparing the efficacy of CA3642 when applied at the intended dose rate (1.0 L/ha) and the reduced dose rate (0.6 L/ha) with efficacy values 11 – 13 % higher. Insufficient to low control (27 – 52 % efficacy) and no clear dose response was observed in the second trial.

No statistically significant differences were observed at later assessment dates (31 – 48 DA-B) at leaf level 1 and 2. When CA3642 was applied at the intended dose rate (1.0 L/ha) and at the lower dose rate (0.6 L/ha) efficacy assessed at leaf level 1 and 2 varied between 7 – 58 % and 6 – 55 %, respectively.

Comments of zRMS:

2 trials have been submitted to determine minimum effective dose for control of *Ramularia collo-cygni* in winter barley in the Maritime EPPO climatic zone. CA3642 at 0,6-1 l/ha achieved low to moderate effectiveness after 2 applications. Insufficient control (<50%) was visible on L1 and L2 whilst the mean efficacy was 64% on L3 in the early assessment. No clear dose response was observed and limited number of trials was available.

HORVW – RAMUCC – North-East EPPO zone

A total of two trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against RAMUCC. The trials were carried out in Poland between 2020 and 2021.
The first application took place at crop stage BBCH 32 and the second application was done 23-27 days later, at BBCH 47-57.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Czech Republic is presented to justify the minimum effective dose of 1.0 L/ha CA3642 applied up to two times in winter barley against RAMUCC. CA3642 was first applied at crop stage BBCH 35 and the second application was done 16 days later, at BBCH 54.

Table 3.2-203: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against RAMUCC – valid assessments – North-East EPPO zone

Leaf level assm. timing		**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
						Rate		**1.0 L/ha**	**0.6 L/ha**
								150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy assessment after 2 applications									
LEAF2 late		POL	59	36		PESSEV Efficacy	8.2 a -	**2.1 bcd** **74.39**	2.5 bc 69.51
Mean efficacy					2	*Mean*	*8.2*	***84.85***	*69.51*
LEAF3 early		POL	39	12		PESSEV Efficacy	5.2 -	**1.2 b-f** **76.92**	2.1 bcd 59.62
Mean efficacy					*1*	*Mean*	*5.2*	***76.92***	*59.62*
LEAF4 early		POL	38	15		PESSEV Efficacy	4.4 -	**0.1 b** **97.73**	0.1 b 97.73
Mean efficacy					*1*	*Mean*	*4.4*	***97.73***	*97.73*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-204: Efficacy of CA3642 (1.0 L/ha) in HORVW against RAMUCC – supporting trials from Czech Republic

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**

							150 g/ha AZX + 150 g/ha PTZ	90 g/ha AZX + 90 g/ha PTZ
Efficacy after 2 applications								
LEAF1 late	CZE	48	32		PESSEV Efficacy	32.6 a -	**22.5 bc** **31.0**	19.6 bc 39.9
Mean efficacy				1	*Mean*	*32.6*	***31.0***	*39.9*
LEAF2 late	CZE	48	32		PESSEV Efficacy	54.0 a -	**22.1 bcd** **59.1**	25.4 bcd 53.0
Mean efficacy				1	*Mean*	*54.0*	***59.1***	*53.0*
LEAF3 early	CZE	31	15		PESSEV Efficacy	5.4 a -	**0.5 c** **90.7**	1.2 bc 77.8
Mean efficacy				1	*Mean*	*5.4*	***90.7***	*77.8*
LEAF4 early	CZE	31	15		PESSEV Efficacy	19.0 a -	**2.6 c** **86.3**	4.7 bc 75.3
Mean efficacy				1	*Mean*	*19.0*	***86.3***	*75.3*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-205: Minimum effective dose of CA3642 against RAMUCC in winter barley – summary North-East and supporting trials

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha** **150 g/ha AZX +** **150 g/ha PTZ**	**0.6 L/ha** **90 g/ha AZX +** **90 g/ha PTZ**
Efficacy after 2 applications								
LEAF2 late	CZ	48	32		PESSEV Efficacy	54.0 a -	**22.1 bcd** **59.1**	25.4 bcd 53.0
	PL	59	36		PESSEV Efficacy	8.2 a -	**2.1 bcd** **74.4**	2.5 bc 69.5
Mean efficacy		CZ		*1*	*Mean*	*54.0*	***59.1***	*53.0*
		NE and PL neighbouring countries		2	*Mean* Min Max	*31.10* 8.2 54.0	***66.8*** **59.1** **74.4**	*61.3* 53.0 69.5
		PL		1	*Mean*	*8.2*	***74.4***	*69.5*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After two applications, a clear numerical, albeit not statistically significant difference, was observed between treatments with the highest intended dose rate (1.0 L/ha) of CA3642 and the reduced dose rate (0.6 L/ha) in two out of three assessments at all assessment timings on leaf levels 2, 3 and 4, with efficacy values 16-18 % higher.

In the supporting trial from Czech Republic, numerically differences were observed between the intended dose rate (1.0 L/ha) and the reduced dose rate (0.6 L/ha) in three out of four assessments. Efficacy over all leaf level after application of CA3642 at 1.0 L/ha ranged between 31 and 91 %, and efficacy of the reduced dose rate varied between 39 and 75 %.

In the collated data, a dose rate trend can be observed whereby mean efficacy on leaf 2 at a late assessment gave efficacy values of 67 % and 61 % for the respectively reduced dose rates.

Comments of zRMS:

2 trials have been submitted to determine minimum effective dose for control of *Ramularia collo-cygni* in winter barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved significant superior efficacy compared to lower dose rate after 2 applications. Dose response was visible on L2 in the late assessment (85% vs 70%) and L3 in the early assessment (77% vs 60%). Also 1 trial conducted in the Czech Republic has been included to the overall calculation as support for the Polish registration. Dose response was observed on L3 in the early assessment (91% vs 78%) and L4 in the early assessment (86% vs 75%). Taking into account all trials, the dose rate of 1 l/ha can be determined MED for control of RAMUCC in winter barley in the NE zone.

HORVW – RAMUCC – South-East EPPO zone

No data is available in the South-East EPPO zone in support of the minimum effective dose for control of Ramularia leaf spot of barley (RAMUCC – *Ramularia collo-cygni*) in South-East EPPO Zone. However, the species *Ramularia collo-cygni* is also the pathogen agent that causes Ramularia leaf spot on spring barley. It therefore seems reasonable from an agronomic perspective to assume the same rate effects of CA3642 applied at 1.0 L/ha on winter barley from the robust dataset proposed for the closely related crop spring barley and from the dataset for winter barley in the other EPPO Zones. Furthermore, existing authorisations for prothioconazole and azoxystrobin products also indicates that performance is comparable between the pathogen/crop pairs.

The dataset presented in – **Spring barley (HORVS) / *Ramularia collo-cygni* (RAMUCC)** – showed that sufficient efficacy of the dose rates from 1.0 L/ha is achieved. For the rates of 1.0 L/ha it was often observed that the performance of the product achieved adequate control of *Ramularia collo-cygni* on spring barley.

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose for control of *Ramularia collo-cygni* in winter barley in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Winter Barley (HORVW) – Leaf blotch of cereals (RHYNSE- *Rhynchosporium secalis*)

A total of three field trials were established in 2021 in order to determine the minimum effective dose for the control of the RHYNSE in winter barley. Two trials from the Maritime EPPO zone were carried out in Germany (1 trial) and France (1 trial), one trial from the North-East EPPO zone was carried out in Poland (1 trial).
CA3642 was tested at the intended dose rates, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rates of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-206, Table 3.2-207 and Table 3.2-208.

HORVW – RHYNSE – Maritime EPPO zone

A total of two trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against RHYNSE. The trials were carried out in Germany and France in 2021.
The first application took place at crop stage BBCH 31 and the second application was done 24-39 days later, at BBCH 31-59.

Table 3.2-206: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against RHYNSE – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		1.0 L/ha	0.6 L/ha
							150 g/ha AZX + 150 g/ha PTZ	90 g/ha AZX + 90 g/ha PTZ
Efficacy after 2 treatments								
LEAF2 early	FRA	53	14		PESSEV Efficacy	7.1 a -	**0.5 d** **92.96**	0.7 d 90.14
Mean efficacy				*1*	*Mean*	*7.1*	***92.96***	*90.14*
LEAF2 late	DEU	53	29		PESSEV Efficacy	6.0 a -	**1.2 cd** **80.00**	2.2 bc 63.33
Mean efficacy				*1*	*Mean*	*6.0*	***80.00***	*63.33*
LEAF3 early	FRA	53	14		PESSEV Efficacy	9.6 a -	**1.7 d** **82.29**	1.4 d 85.42
	DEU	39	15		PESSEV Efficacy	15.3 a -	**1.1 c** **92.81**	2.0 c 86.93
Mean efficacy				2	*Mean* Min Max	*12.5* 9.6 15.3	***87.55*** **82.29** **92.81**	*86.17* 85.42 86.93

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

No clear dose response was observed in four assessments after two applications of CA3642 at the intended dose rate (1.0 L/ha) and the reduced dose rate (0.6 L/ha). Good control (80 – 93 % efficacy) was achieved after the application of CA3642 at the intended dose rate. When CA3642 was applied at the lowered dose rate (0.6 L/ha), efficacy varied between 60% and 90 %.

Comments of zRMS:

2 trials have been submitted to determine minimum effective dose for control of *Rhynchosporium secalis* in winter barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. Dose response was visible on L2 in the late assessment (80% vs 63%). Similar effect between dose rates of 0,6 l/ha and 1 l/ha was observed in other assessments. Limited number of trials was available.

HORVW – RHYNSE – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley against RHYNSE. The trial was carried out in Poland in 2021.
The first application took place at crop stage BBCH 37 and the second application was done 18 days later, at BBCH 59.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Germany is presented to justify the minimum effective dose of 1.0 L/ha CA3642 applied up to two times in winter barley against RHYNSE. CA3642 was first applied at crop stage BBCH 31 and the second application was done 24 days later, at BBCH 51.

Table 3.2-207: Minimum effective dose of CA3642 (1.0 L/ha) in HORVW against RHYNSE – valid assessments – North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF 2 late	PL	50	31		PESSEV Efficacy	7.9 a -	**0.6 b** **92.41**	0.4 b 94.94
Mean efficacy				1	*Mean*	*7.9*	***92.41***	*94.94*
LEAF3 early	PL	33	14		PESSEV Efficacy	10.9 a -	**0.2 c** **98.17**	0.4 c 96.33
Mean efficacy				1	*Mean*	*10.9*	***98.17***	*96.33*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-208: Efficacy of CA3642 (1.0 L/ha) in HORVW against RHYNSE – supporting trials from Germany

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 treatments								
LEAF2 late	DE	53	29		PESSEV Efficacy	6.0 a -	**1.2 cd** **80.00**	2.2 bc 63.33
Mean efficacy				*1*	*Mean*	*6.0*	***80.00***	*63.33*
LEAF3 early	DE	39	15		PESSEV Efficacy	15.3 a -	**1.1 c** **92.81**	2.0 c 86.93
Mean efficacy				1	*Mean*	*15.3*	***92.81***	*86.93*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-209: Minimum effective dose of CA3642 against RHYNSE in winter barley – summary North-East and supporting trials

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha**	**0.6 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**90 g/ha AZX + 90 g/ha PTZ**
Efficacy after 2 applications								
LEAF2 late	DE	53	29		PESSEV Efficacy	6.0 a -	**1.2 cd** **80.0**	2.2 bc 63.3
	POL	50	31		PESSEV Efficacy	7.9 a -	**0.6 b** **92.4**	0.4 b 94.9
Mean efficacy		DE		*1*	*Mean*	6.0	***80.0***	*63.3*
		NE and PL neighbouring countries		2	*Mean* Min Max	*7.0* 6.0 7.9	***86.2*** **80.0** **92.4**	*79.1* 63.3 94.9

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**^{b}	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ha PTZ**	**0.6 L/ha** **90 g/ha AZX + 90 g/ha PTZ**
		PL		1	*Mean*	*7.9*	***92.4***	*94.9*

^{b} UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

No dose response could be observed in the assessments. Excellent to good control of RHYNSE (92 % - 98 %) was achieved in all assessments after application of the intended dose rate (1.0 L/ha) as well of the reduced dose rate (0.6 L/ha).
Albeit statistically not significant, a numerical difference was observed two leaf levels after the application of CA3642 at the intended dose rate (1.0 L/ha) and the lowered dose rate (0.6 L/ha). The performance of the intended dose rate was 5 – 17 % higher than the lowered dose rate.
In the collated data, a dose rate trend can be observed whereby mean efficacy on leaf 2 at a late assessment gave efficacy values of 86.2 % and 79.1 % for the respectively reduced dose rate.

Comments of zRMS:

Only 1 trial has been submitted to determine minimum effective dose for control of *Rhynchosporium secalis* in winter barley in the North-East EPPO climatic zone. No significant differences between dose rates of 0,6 l/ha and 1 l/ha were observed after 2 applications. Also 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. Dose response was visible on L2 in the late assessment (80% vs 63%. Limited number of trials was available.

HORVW – RHYNSE – South-East EPPO zone

No data is available in the South-East EPPO zone in support of the minimum effective dose for control of Leaf spot of cereals (RHYNSE – *Rhynchosporium secalis*) in South-East EPPO Zone. However, the species *Rhynchosporium secalis* is also the pathogen agent that causes Leaf spot of cereals on spring barley and rye. It therefore seems reasonable from an agronomic perspective to assume the same rate effects of CA3642 applied at 1.0 L/ha on winter barley from the robust dataset proposed for the closely related crop spring barley and from the dataset for winter barley in the other EPPO Zones. Furthermore, existing authorisations for prothioconazole and azoxystrobin products also indicates that performance is comparable between the pathogen/crop pairs.

The dataset presented in – **Spring barley (HORVS) / *Rhynchosporium secalis* (RHYNSE)** – showed that sufficient efficacy of the dose rates from 1.0 L/ha is achieved. For the rates of 1.0 L/ha it was often observed that the performance of the product achieved adequate control of *Rhynchosporium secalis* on spring barley.

Comments of zRMS:

No efficacy trials have been submitted to determine minimum effective dose for control of *Rhynchosporium secalis* in winter barley in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Winter barley (HORVW) – Green leaf area

HORVW – Green leaf area – Maritime EPPO zone

In total, four trials from the Maritime EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley, assessed in terms of green leaf area. Trials were carried out in Czech Republic (1 trial), Germany (1 trial), France (1 trial), Great Britain (1 trial) in 2021.

The first application took place at crop stage BBCH 31-47 and the second application was done 14-39 days later, at BBCH 39-65.

After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 221 % compared to the untreated control. The reduced dose rate (0.6 L/ha) increased the mean green leaf area by 511 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.0 L/ha was statistically significant compared to the untreated control in in 3 out of 4 trials assessed 32-35 days after application.

Table 3.2-210: Minimum effective dose of CA3642 assessed as green leaf area (GLA) in winter barley – Maritime EPPO zone

Country	**Crop Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC***	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
				Rate		**1.0 L/ha**	**0.6 L/ha**
						150 g AZX/ha + 150 g PTZ/ha	**90 g AZX/ha + 90 g PTZ/ha**
CZE	BECKENBAUER	48	32	GRNARE cf UTC	75.0 a 100.0	**77.5 a** **103.3**	80.0 a 106.7
FRA	ORBIT	72	33	GRNARE cf UTC	2.5 f 100.0	**22.5 e** **900.0**	42.5 bcd 1700.0
GBR	KWS Orwell	57	35	GRNARE cf UTC	65.0 d 100.0	**95.0 a** **146.2**	95.5 a 146.9
DEU	Orbit	59	35	GRNARE cf UTC	13.8 h 100.0	**80.0 a** **579.7**	67.5 c 489.1
			4	*Mean* Min Max	*39.1* 0.0 75.0	***321.3*** **92.9** **1975.0**	*610.7* 106.7 1700.0

Comments of zRMS:

The mean green leaf area increased by 221,3% at 1 l/ha and 510,7% at 0,6 l/ha after 2 applications of CA3642. Significant higher increase of green leaf area has been noted in case of lower dose rate. Very positive impact on green leaf area was visible in the Maritime EPPO climatic zone.

HORVW – Green leaf area – North-East EPPO zone

In total, 14 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley, assessed in terms of green leaf area. Trials were carried out in Lithuania (3 trials), Latvia (2 trials) and Poland (9 trials) in 2021.

The first application took place at crop stage BBCH 31-47 and the second application was done 14-39 days later, at BBCH 39-65.

After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 79 % compared to the untreated control. For the reduced dose rate (0.6 L/ha), the mean green leaf area increased by 62 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.0

L/ha was statistically significant compared to the untreated control in in 10 out of 14 trials assessed.

Table 3.2-211: Minimum effective dose of CA3642 assessed as green leaf area (GLA) in winter barley – North-East EPPO zone

Country	DA-A	DA-B	No of trials ARM action code	Name Conc Type	UTC*	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
				Rate		1.0 L/ha	0.6 L/ha
						150 g AZX/ha + 150 g PTZ/ha	90 g AZX/ha + 90 g PTZ/ha
POL	65	38		GRNARE cf UTC	28.8 c 100.0	**42.5 ab 147.6**	37.5 abc 130.2
POL	61	34		GRNARE cf UTC	37.5 f 100.0	**57.5 b-e 153.3**	55.0 cde 146.7
POL	49	28		GRNARE cf UTC	41.3 c 100.0	**48.8 abc 118.2**	47.5 abc 115.0
POL	45	29		GRNARE cf UTC	25.0 c 100.0	**31.3 ab 125.2**	30.0 abc 120.0
POL	59	36		GRNARE cf UTC	55.0 b 100.0	**72.5 ab 131.8**	75.0 ab 136.4
LTU	50	33		GRNARE cf UTC	7.500 c 100.0	**20.313 ab 270.8**	13.750 abc 183.3
LTU	50	32		GRNARE cf UTC	19.6875 b 100.0	**41.5625 a 211.1**	36.2500 a 184.1
LVA	48	27		GRNARE cf UTC	12.5 c 100.0	**23.8 abc 190.4**	18.8 bc 150.4
LVA	48	27		GRNARE cf UTC	17.5 b 100.0	**31.0 a 177.1**	26.3 ab 150.3
POL	58	33		GRNARE cf UTC	20.000 e 100.0	**32.500 bcd 162.5**	40.000 a-d 200.0
POL	50	31		GRNARE cf UTC	31.3 b 100.0	**36.3 ab 116.0**	33.8 ab 108.0
POL	55	33		GRNARE cf UTC	17.500 e 100.0	**26.250 bc 150.0**	25.000 bc 142.9
POL	60	37		GRNARE cf UTC	15.0 c 100.0	**40.0 ab 266.7**	42.5 ab 283.3
LTU	51	35		GRNARE cf UTC	2.500 b 100.0	**7.000 a 280.0**	5.438 ab 217.5
			14	*Mean* Min Max	*23.6* 2.5 55	***178.6*** **116** **280**	*162.0* 108 283.3

Comments of zRMS:

The mean green leaf area increased by 78,6% at 1 l/ha and 62% at 0,6 l/ha after 2 applications of CA3642. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted.

HORVW – Green leaf area – South-East EPPO zone

In total, four trials from the South-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley, assessed in terms of green leaf area. Trials were carried out in Hungary (4 trials) in 2021.

The first application took place at crop stage BBCH 31-47 and the second application was done 14-39 days later, at BBCH 39-65.

After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 325 % compared to the untreated control. Four assessments are available testing the reduced application rate. The reduced dose rate 0.6 L/ha increased the mean green leaf area by 325 % compared to the untreated con-

trol.
The increase of green leaf area induced by CA3642 at 1.0 L/ha was statistically not significant compared to the untreated control the trials assessed 27-38 days after application.

Table 3.2-212: Minimum effective dose of CA3642 assessed as green leaf area (GLA) in winter barley – South-East EPPO zone

Country	Crop Variety	DA-A	DA-B	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
				Rate		1.0 L/ha	0.6 L/ha
						150 g AZX/ha + 150 g PTZ/ha	90 g AZX/ha + 90 g PTZ/ha
HUN	SU ELLEN	55	27	GRNARE cf UTC	5.0 a 100	**20.0 a** **400.0**	20.0 a 400.0
HUN	Antonella	55	30	GRNARE cf UTC	5.0 a 100	**40.0 a** **800.0**	40.0 a 800.0
HUN	GK JUDY	61	35	GRNARE cf UTC	5.0 a 100	**5.0 a** **100.0**	5.0 a 100.0
HUN	KWS Meridian	57	38	GRNARE cf UTC	5.0 a 100	**20.0 a** **400.0**	20.0 a 400.0
			4	*Mean* Min Max	5.0 5.0 5.0	**425.0** **100.0** **800.0**	425.0 100.0 800.0

Comments of zRMS:

The mean green leaf area increased by 325% at 0,6-1 l/ha after 2 applications of CA3642 No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Significant positive impact on green leaf area has been noted.

Winter barley - Summary and conclusions on the minimum effective dose

On winter barley, five foliar diseases were assessed in 15 trials across three EPPO zones to support the minimum effective dose of 1.0 L/ha. Disease severity was assessed and analysed on the main foliar levels 1, 2 and 3. In some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved. However supportive data is also provided in the section on spring barley.

Overall, across the three EPPO zones and all diseases, a dose rate response was generally observed for higher disease control with the higher dose rate; the rate of 1.0 L/ha generally gave better control compared to the rate of 0.6 L/ha with some statistically significant differences. The higher rate is needed particularly for the useful control of RAMUCC.

A slight dose response in terms of Green Leaf Area (GLA) was observed in the three zones, most clearly in the North-East EPPO zone. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

In this dossier data presented for minimum effective dose is primarily from assessments where 2 applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved with 1.0 L/ha depending on the disease pressure.

Therefore, a minimum effective dose rate of 1.0 L/ha is proposed for CA3642 on winter barley in each of the relevant EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.0 L/ha is the minimum effective dose to control a range of foliar diseases on winter barley.

Spring barley (HORVS)

A total of 16 efficacy trials are available on spring barley in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.0 L/ha CA3642 for the control of ERYSGH, PUCCHD, PYRNTE, RAMUCC and RHYNSE.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Comments of zRMS:

No evaluation of minimum effective dose was provided for the South-East EPPO climatic zone. The cMSs are kindly asked to extrapolate conclusions from other zones and consider the claimed uses on national level. Moreover, a limited number of trials was available for MED assessment in the MAR and NE zones. In opinion of zRMS, an extrapolation from winter barley is possible in this case.

Spring Barley (HORVS) – Powdery mildew of barley (ERYSGH - *Blumeria graminis f. sp. hordei*)

Three field trials were established in 2021 in order to determine the minimum effective dose for the control of the ERYSGH in spring barley. Trials from the Maritime EPPO zone were carried out in Great Britain (1 trial), the trials from the North-East EPPO zone were carried out in Poland (2 trials).
No trials are available from the South-East EPPO zone in HORVS, however some data is provided in the dossier for winter barley (HORVW), which can be supportive of the use against the same pathogen in spring-sown barley.
CA3642 was tested at the intended dose rate, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Tables 3.2-213 and 3.2-214.

HORVS – ERYSGH – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of one or two applications of 1.0 L/ha of CA3642 against ERYSGH in spring barley. The trial was carried out in Great Britain in 2021.
The first application took place at crop stage BBCH 43 and the second application was done 23 days later, at BBCH 66.

Table 3.2-213: Minimum effective dose of CA3642 against ERYSGH in spring barley – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM code*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha

Efficacy after 2 applications								
LEAF2 early	GBR	40.0	17.0		PESSEV Efficacy	21.3 a 21.3	**0.6 c** ~~97.2~~ **97.4**	0.6 c 97.2
Mean efficacy				*1*	*Mean*	*21.3*	~~*97.2*~~ ***97.4***	*97.2*
LEAF3 early	GBR	40.0	17.0	TA	PESSEV Efficacy	39.5 a 39.5 a	**9.2 c** **76.7** **c**	10.4 c 73.7 c
Mean efficacy				*1*	*Mean*	*39.5*	***76.7***	*73.7*
Efficacy after 1 application								
LEAF3 late	GBR	23.0	-		PESSEV Efficacy	5.1 a 5.1	**0.0 e** **100.0**	1.1 d ~~78.4~~ 78.0
Mean efficacy				*1*	*Mean*	*5.1*	***100.0***	~~*78.4*~~ *78.0*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

At an early assessment date (17 DA-B), a numerical, but not statistically significant, difference between two applications of CA3642 at the highest intended dose rate (1.0 L/ha, 77 % efficacy) and the reduced dose rate (0.6 L/ha, 74 %) was observed on leaf level 3 in one trial. There was no difference in efficacy between the dose rates on leaf level 2 at the same timing (~~97.2~~ 97.4% for both 1.0 L and 0.6 L/ha).

In the assessment after the first application also a clear numerical, and statistically significant difference was observed between the highest intended dose rate (1.0 L/ha, 100 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, 78 %) on leaf level 3 at 23 DA-A in the one trial.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Blumeria graminis* f.sp. *hordei* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness (76,7-97,4%) after 2 applications in the early assessment. No significant differences between dose rate of 1 and 0,6 l/ha were observed. Full control has been noted after 1 application. Dose response was visible by results of 78% (0,6 l/ha) vs 100%. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

HORVS – ERYSGH – North-East EPPO zone

A total of two trials from the North-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0 L/ha of CA3642 against ERYSGH in spring barley. Both trials were carried out in Poland in 2021.
The first application took place at crop stage BBCH 32-33 and the second application was done 14 or 21 days later, at BBCH 51-59.

Table 3.2-214: Minimum effective dose of CA3642 against ERYSGH in spring barley – North-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha** **150 g AZX/ha** **+** **150 g PTZ/ha**	**0.6 L/ha** **90 g AZX/ha** **+** **90 g PTZ/ha**
Efficacy after 2 applications								

LEAF4 early	POL	36.0	15.0		PESSEV Efficacy	5.9 a 5.9	**0.4 b** ~~93.2~~ **93.7**	0.9 b ~~84.7~~ 85.3
Mean efficacy				*1*	*Mean*	*5.9*	~~*93.2*~~ ***93.7***	~~*84.7*~~ *85.3*
Efficacy after 1 application								
LEAF4 early	POL	15.0	-		PESSEV Efficacy	4.8 a 4.8	**0.8 b** ~~83.3~~ **84.2**	1.0 b ~~79.2~~ 79.0
	POL	14.0	-		PESSEV Efficacy	4.1 a 4.1	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				2	*Mean* Min Max	*4.5* 4.1 4.8	~~*91.7*~~ ***92.1*** ~~83.3~~ **84.2** **100.0**	~~*89.6*~~ *89.5* ~~79.2~~ 79.0 100.0
LEAF4 late	POL	21.0	-		PESSEV Efficacy	5.6 a 5.6	**0.5 b** **91.1**	1.0 b ~~82.1~~ 82.2
Mean efficacy				1	*Mean*	*5.6*	***91.1***	~~*82.1*~~ *82.2*

[b] UTC: % infestation in untreated control at assessment date

At an early assessment date (15 DA-B), a numerical, but not statistically significant, difference between two applications of CA3642 at the highest intended dose rate (1.0 L/ha, 93.7 % efficacy) and the reduced dose rate (0.6 L/ha, 85.3 %) was observed on leaf level 4 in one trial.

In an assessment after the first application, a slight numerical, but not statistically significant difference was observed between the highest intended dose rate (1.0 L/ha, 92.1 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, ~~90~~ 89.5 %) on leaf level 4 at 14 or 15 DA-A across 2 trials.
At a later assessment (21 DA-A), a clear, but not statistically significant, difference between the highest intended dose rate (1.0 L/ha, 91.1 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, 82.2 %) was observed on leaf level 4 in one trial.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose to control of *Blumeria graminis* f.sp. *hordei* in spring barley. CA3642 at 1 l/ha achieved high effectiveness (93,7%) after 2 applications in early assessment. Also good results have been noted after 1 application with the mean efficacy of 91,1-92,1% on L4. The lower dose rate of 0,6 l/ha presented slight inferior effectiveness. Limited number of trials was available but an extrapolation from winter barley is possible. Taking into account all trials, the dose rate of 1 l/ha can be determined MED for control of ERYSGH in spring barley in the NE zone.

Spring Barley (HORVS) – Brown rust of barley (PUCCHD - *Puccinia hordei*)

Four field trials were established in 2021 in order to determine the minimum effective dose for the control of PUCCHD in spring barley. Trials from the Maritime EPPO zone were carried out in Great Britain (1 trial) and Germany (1 trial), the trials from the North-East EPPO zone were carried out in Poland (1 trial) and Lithuania (1 trial).
No trials are available from the South-East EPPO zone in HORVS, however some data is provided in the dossier for winter barley (HORVW), which can be supportive of the use against the same pathogen in spring-sown barley.

CA3642 was tested at the intended dose rate, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Tables 3.2-215 to Table 3.2-218.

HORVS – PUCCHD – Maritime EPPO zone

A total of 2 trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0 L/ha of CA3642 against PUCCHD in spring barley. The trials were carried out in Great Britain or Germany in 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 20 days later, at BBCH 53-59.

Table 3.2-215: Minimum effective dose of CA3642 against PUCCHD in spring barley – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM code***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 early	GBR	35.0	15.0		PESSEV Efficacy	5.7 a 5.7	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				1	*Mean*	*5.7*	***100.0***	*100.0*
LEAF1 late	GBR	44.0	24.0	TA	PESSEV Efficacy	8.4 a 8.4 a	**0.2 c** **97.9** **c**	0.3 c 96.2 c
Mean efficacy				1	*Mean*	*8.4*	***97.9***	*96.2*
LEAF2 early	GBR	35.0	15.0		PESSEV Efficacy	4.1 a 4.1	**0.0 b** **100.0**	0.0 b 99.4
Mean efficacy				1	*Mean*	*4.1*	***100.0***	*99.4*
LEAF2 late	GBR	44.0	24.0	TL	PESSEV Efficacy	9.0 a 9.0 a	**0.6 c** ~~93.7~~ **93.8** **d**	0.6 c ~~93.6~~ 93.7 d
	DEU	50.0	29.0		PESSEV Efficacy	5.3 a 5.3	**0.2 d** ~~96.2~~ **97.0**	0.1 d ~~98.1~~ 98.4
Mean efficacy				2	*Mean* Min Max	*7.1* 5.3 9.0	~~*95.0*~~ ***95.4*** ~~93.7~~ **93.8** ~~96.2~~ **97.0**	~~*95.9*~~ *96.1* ~~93.6~~ 93.7 ~~98.1~~ 98.4
LEAF3 early	GBR	35.0	15.0		PESSEV Efficacy	5.8 a 5.8	**0.0 b** **100.0**	0.6 b 90.6
Mean efficacy				1	*Mean*	*5.8*	***100.0***	*90.6*

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

At an early assessment date (15 DA-B), a numerical, but not statistically significant, difference between two applications of CA3642 at the highest intended dose rate (1.0 L/ha, 100 % efficacy) and the reduced dose rate (0.6 L/ha, 91 %) was observed on leaf level 3 in one trial. There was no difference between rates on leaf 1 and less than 1% difference between rates on leaf 2 in the same trial.
At a later assessment (24-29 DA-B), there was no dose response with an average 95.4% at 1.0 L/ha and 96.1% at 0.6 L/ha on leaf 2 across two trials.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia hordei* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved high results after 2 applications, either in the early and late assessments. Full effectiveness was observed in the early observations. The mean efficacy of 95,4-97,9% has been noted in the late assessments. No significant differences between 0,6 and 1 l/ha were visible. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

HORVS – PUCCHD – North-East EPPO zone

A total of 2 trials from the North-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0 L/ha of CA3642 against PUCCHD in spring barley. The trials were carried out in Poland or Lithuania in 2021.
The first application took place at crop stage BBCH 33-37 and the second application was done 13 days later, at BBCH 59-61.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, one additional trial from Germany is presented to justify the minimum effective dose of 1.0 L/ha CA3642 applied up to two times in spring barley against PUCCHD. CA3642 was first applied at crop stage BBCH 31 and the second application was done 20 days later, at BBCH 53.

Table 3.2-216: Minimum effective dose of CA3642 against PUCCHD in spring barley – trials from North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 early	LTU	28.0	15.0		PESSEV Efficacy	5.7 a 5.7	**0.7 b** ~~87.7~~ **87.9**	0.7 b ~~87.7~~ 88.4
Mean efficacy				1	*Mean*	*5.7*	*~~87.7~~* ***87.9***	*~~87.7~~ 88.4*
LEAF2 late	POL	38.0	24.0		PESSEV Efficacy	6.0 a 6.0	**0.6 b** **90.0**	0.7 b ~~88.3~~ 87.7
Mean efficacy				1	*Mean*	*6.0*	***90.0***	*~~88.3~~ 87.7*
Efficacy after 1 application								
LEAF3 early	LTU	13.0	-		PESSEV Efficacy	6.7 a 6.7	**0.3 b** ~~95.5~~ **95.3**	0.6 b ~~91.0~~ 91.6
Mean efficacy				1	*Mean*	*6.7*	*~~95.5~~* ***95.3***	*~~91.0~~ 91.6*

[b] UTC: % infestation in untreated control at assessment date

Table 3.2-217: Minimum effective dose of CA3642 against PUCCHD in spring barley – supporting trials from Germany

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								

LEAF2 late	DEU	50.0	29.0		PESSEV Efficacy	5.3 a 5.3	**0.2 d** ~~96.2~~ **97.0**	0.1 d ~~98.1~~ 98.4
Mean efficacy				1	*Mean*	*5.3*	~~*96.2*~~ ***97.0***	~~*98.1*~~ *98.4*

[b] UTC: % infestation in untreated control at assessment date

Table 3.2-218: Minimum effective dose of CA3642 against PUCCHD in spring barley – summary North-East and supporting trials

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF2 late	POL	38.0	24.0		PESSEV Efficacy	6.0 a 6.0	**0.6 b** **90.0**	0.7 b ~~88.3~~ 87.7
	DEU	50.0	29.0		PESSEV Efficacy	5.3 a 5.3	**0.2 d** ~~96.2~~ **97.0**	0.1 d ~~98.1~~ 98.4
Mean efficacy		NE and PL neighbouring countries		2	*Mean* Min Max	*5.7* 5.3 6.0	***93.1*** **90.0** ~~96.2~~ **97.0**	~~*93.2*~~ *93.1* ~~88.3~~ 87.7 ~~98.1~~ 98.4

[b] UTC: % infestation in untreated control at assessment date

At an early assessment date (15 DA-B) in North-East zone trials, there was no difference between rates on leaf 1 in 1 trial, and less than a 2% difference between rates at a later assessment (24 DA-B) on leaf 2 in another trial.
In an assessment after the first application, a slight numerical, but not statistically significant difference was observed between the highest intended dose rate (1.0 L/ha, ~~96~~ 95.3 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, 91.6 %) on leaf level 3 at 13 DA-A in 1 trial.

In the collated data summarised across 1 trial from Germany and 1 trial from Poland, there is no dose response, with an average 93% efficacy at 1.0 L/ha and 93.2% at 0.6 L/ha on leaf 2 at 24-29 DA-B.

Comments of zRMS:

2 efficacy trials have been submitted to determine minimum effective dose to control of *Puccinia hordei* in spring barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved good results (87,9-90%) after 2 applications, either in the early and late assessments. The mean efficacy after 1 application was 95,3%. No significant differences between 0,6 and 1 l/ha were observed. Also 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha presented results of 93,1% on L2 in the late assessment. Taking into account all trials, the dose rate of 1 l/ha can be determined MED for control of PUCCHD in spring barley in the NE zone.

Spring Barley (HORVS) – Net blotch of barley (PYRNTE - *Pyrenophora teres*)

Nine field trials were established in 2021 in order to determine the minimum effective dose for the control of PYRNTE in spring barley. Trials from the Maritime EPPO zone were carried out in Germany (1 trial), and trials from the North-East EPPO zone were carried out in Poland (7 trials) and Lithuania (1 trial).
No trials are available from the South-East EPPO zone in HORVS, however some data is provided in the dossier for winter barley (HORVW), which can be supportive of the use against the same pathogen in spring-sown barley.

CA3642 was tested at the intended dose rate, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-219 and Table 3.2-220.

HORVS – PYRNTE – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to justify the minimum effective dose of two applications of 1.0 L/ha of CA3642 against PYRNTE in spring barley. The trial was carried out in Germany in 2021.
The first application took place at crop stage BBCH 31 and the second application was done 20 days later, at BBCH 53.

Table 3.2-219: Minimum effective dose of CA3642 against PYRNTE in spring barley – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF2 late	DEU	50.0	29.0		PESSEV Efficacy	5.2 a 5.2	**1.2 bc** ~~76.9~~ **76.3**	1.5 bc ~~71.2~~ 71.7
Mean efficacy				1	*Mean*	*5.2*	~~*76.9*~~ ***76.3***	~~*71.2*~~ *71.7*

[b] UTC: % infestation in untreated control at assessment date

At a later assessment (29 DA-B), a numerical, but not statistically significant, difference between the highest intended dose rate (1.0 L/ha, ~~77~~ 76.3 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, 71.7 %) was observed on leaf level 2 in one trial.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Pyrenophora teres* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate effectiveness (76,3%) after 2 applications in the late assessment. Similar effect was observed in case of lower dose. No results after 1 application was available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

HORVS – PYRNTE – North-East EPPO zone

A total of eight trials from the North-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0 L/ha of CA3642 against PYRNTE in spring barley. Of these trials, 7 were carried out in Poland and 1 was carried out in Lithuania, all in 2021.
The first application took place at crop stage BBCH 31-33 and the second application was done 14-21 days later, at BBCH 45-59.

Table 3.2-220: Minimum effective dose of CA3642 against PYRNTE in spring barley – trials from North-East EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM code*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha
Efficacy after 2 applications								
LEAF1 early	POL	34.0	15.0		PESSEV Efficacy	4.8 a 4.8	**0.0 b** ~~100.0~~ **99.5**	0.2 b ~~95.8~~ 95.5
	LTU	29.0	14.0	TA	PESSEV Efficacy	20.1 a 20.1 a	**3.3 e** ~~83.6~~ **83.4** **ef**	10.7 bc ~~46.8~~ 46.5 bc
Mean efficacy				2	*Mean* Min Max	*12.5* 4.8 20.1	~~*91.8*~~ ***91.5*** ~~83.6~~ **83.4** ~~100.0~~ **99.5**	~~*71.3*~~ *71.0* ~~46.8~~ 46.5 ~~95.8~~ 95.5
LEAF1 late	POL	47.0	26.0		PESSEV Efficacy	16.6 a 16.6	**0.0 b** **100.0**	0.0 b 100.0
	POL	38.0	24.0	TA	PESSEV Efficacy	7.2 a 7.2 a	**0.4 d** **94.4** **cd**	0.5 d 93.1 cd
	POL	41.0	27.0		PESSEV Efficacy	4.1 a 4.1	**0.2 bc** **95.1**	0.3 b ~~92.7~~ 92.4
Mean efficacy				3	*Mean* Min Max	*9.3* 4.1 16.6	***96.5*** **94.4** **100.0**	*95.2* ~~92.7~~ 92.4 100.0
LEAF2 early	POL	31.0	15.0		PESSEV Efficacy	6.4 a 6.4	**0.1 0.6 e** ~~98.4~~ **99.0**	0.7 d ~~89.1~~ 89.3
	POL	34.0	15.0		PESSEV Efficacy	13.4 a 13.4	**1.4 bc** ~~89.6~~ **89.9**	2.0 b ~~85.1~~ 85.4
	LTU	29.0	14.0		PESSEV Efficacy	28.9 a 28.9	**8.4 d** ~~70.9~~ **70.8**	19.0 b 34.3
Mean efficacy				3	*Mean* Min Max	*16.2* 6.4 28.9	~~*86.3*~~ ***86.6*** ~~70.9~~ **70.8** ~~98.4~~ **99.0**	~~*69.5*~~ *69.7* 34.3 ~~89.1~~ 89.3
LEAF2 late	POL	43.0	29.0		PESSEV Efficacy	11.2 a 11.2	**1.7 c** ~~84.8~~ **84.9**	2.2 bc ~~80.4~~ 80.3
	POL	45.0	24.0	TL	PESSEV Efficacy	6.9 a 6.9 a	**0.5 b** ~~92.8~~ **92.7** **bc**	0.8 b ~~88.4~~ 88.9 bc
	POL	47.0	26.0		PESSEV Efficacy	30.0 a 30.0	**0.5 b** ~~98.3~~ **98.4**	1.3 b ~~95.7~~ 95.8
	POL	38.0	24.0	TA	PESSEV Efficacy	4.3 a 4.3 a	**0.8 cde** ~~81.4~~ **81.6** **cde**	0.7 cde ~~83.7~~ 84.3 c-f
	POL	41.0	27.0		PESSEV Efficacy	13.9 a 13.9	**1.8 bcd** ~~87.1~~ **86.8**	2.3 b ~~83.5~~ 82.2
Mean efficacy				5	*Mean* Min Max	*13.3* 4.3 30.0	***88.9*** ~~81.4~~ **81.6** ~~98.3~~ **98.4**	*86.3* ~~80.4~~ 80.3 ~~95.7~~ 95.8
LEAF3 early	LTU	29.0	14.0		PESSEV Efficacy	57.0 a 57.0	**21.3 c** ~~62.6~~ **62.7**	41.1 b ~~27.9~~ 28.0
	POL	36.0	15.0		PESSEV Efficacy	7.0 a 7.0	**0.8 b** ~~88.6~~ **88.4**	0.9 b ~~87.1~~ 86.6
	POL	30.0	16.0		PESSEV Efficacy	7.5 a 7.5	**1.2 bc** ~~84.0~~ **84.4**	1.3 bc ~~82.7~~ 82.1

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM code***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Mean efficacy				3	*Mean* Min Max	*23.8* 7.0 57.0	~~*78.4*~~ ***78.5*** ~~62.6~~ **62.7** ~~88.6~~ **88.4**	~~*65.9*~~ *65.6* ~~27.9~~ 28.0 ~~87.1~~ 86.6
LEAF4 early	POL	29.0	15.0		PESSEV Efficacy	6.2 a 6.2	**0.1 c** ~~98.4~~ **98.8**	0.4 bc ~~93.5~~ 93.6
	POL	36.0	15.0		PESSEV Efficacy	7.4 a 7.4	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				2	*Mean* Min Max	*6.8* 6.2 7.4	~~*99.2*~~ ***99.4*** ~~98.4~~ **98.8** **100.0**	*96.8* ~~93.5~~ 93.6 100.0
Efficacy after 1 application								
LEAF2 early	POL	19.0	-		PESSEV Efficacy	6.3 a 6.3	**0.2 c** ~~96.8~~ **96.3**	0.5 c ~~92.1~~ 92.7
	LTU	15.0	-		PESSEV Efficacy	5.1 a 5.1	**0.9 cd** ~~82.4~~ **82.7**	1.0 cd ~~80.4~~ 80.0
Mean efficacy				2	*Mean* Min Max	*5.7* 5.1 6.3	~~*89.6*~~ ***89.5*** ~~82.4~~ **82.7** ~~96.8~~ **96.3**	~~*86.2*~~ *86.4* ~~80.4~~ 80.0 ~~92.1~~ 92.7
LEAF3 early	POL	16.0	-		PESSEV Efficacy	4.0 a 4.0	**0.0 c** **100.0**	0.4 c ~~90.0~~ 90.6
	POL	19.0	-		PESSEV Efficacy	21.0 a 21.0	**5.7 c** ~~72.9~~ **73.1**	6.5 bc ~~69.0~~ 68.9
	LTU	15.0	-		PESSEV Efficacy	11.3 a 11.3	**2.3 de** ~~79.6~~ **79.2**	3.4 cde ~~69.9~~ 70.0
Mean efficacy				3	*Mean* Min Max	*12.1* 4.0 21.0	~~*84.2*~~ ***84.1*** ~~72.9~~ **73.1** **100.0**	~~*76.3*~~ *76.5* ~~69.0~~ 68.9 ~~90.0~~ 90.6
LEAF4 early	LTU	15.0	-		PESSEV Efficacy	21.5 a 21.5	**3.5 efg** **83.7**	4.8 def ~~77.7~~ 77.6
Mean efficacy				1	*Mean*	*21.5*	***83.7***	~~*77.7*~~ *77.6*

b UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

At the early assessment dates (14-15 DA-B), there was a numerical difference observed between the highest intended dose rate and the reduced rate of CA3642 on:

- leaf level 1 across 2 trials (1.0 L/ha, 92 % efficacy, 0.6 L/ha, 71 % efficacy) with a statistically significant difference in 1 of the trials,
- leaf level 2 across 3 trials (1.0 L/ha, 86.6 % efficacy, 0.6 L/ha, 70 % efficacy) with a statistically significant difference in 2 of the trials,
- leaf level 3 across 3 trials (1.0 L/ha, 78.5 % efficacy, 0.6 L/ha, 66 % efficacy) with a statistically significant difference in 1 of the trials.
- leaf level 4 across 2 trials (1.0 L/ha, 99 % efficacy, 0.6 L/ha, 97 % efficacy) with no significant differences

At later assessment dates (24-29 DA-B), there was a slight numerical difference observed between the highest intended dose rate and the reduced rate of CA3642 on:

- leaf level 1 across 3 trials (1.0 L/ha, 97 % efficacy, 0.6 L/ha, 95 % efficacy) with no significant differences in any of the trials,
- leaf level 2 across 5 trials (1.0 L/ha, 89 % efficacy, 0.6 L/ha, 86 % efficacy) with no significant differences in any of the trials.

Overall, two applications of CA3642 at 1.0 L/ha gives more effective control than the lower rate of 0.6 L/ha with a statistically significant difference in 4 out of 18 cases.

In an assessment after the first application, numerical, but not statistically significant differences were observed between the highest intended dose rate and the reduced dose rate of CA3642 on:

- leaf level 2 across 2 trials (1.0 L/ha, 90 % efficacy, 0.6 L/ha, 86 % efficacy),
- leaf level 3 across 3 trials (1.0 L/ha, 84 % efficacy, 0.6 L/ha, 76 % efficacy),
- leaf level 4 in 1 trial (1.0 L/ha, 84 % efficacy, 0.6 L/ha, 78 % efficacy).

Comments of zRMS:

8 efficacy trials have been submitted to determine minimum effective dose to control of *Pyrenophora teres* in spring barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 78,5-99,4% in early observations and 88,9-96,5% in the late assessments. Significant differences between 0,6 and 1 l/ha were observed in the early observations. Dose response was visible on L1 (71% vs 91,5%), L2 (69,7% vs 86,6%) and L3 (65,6% vs 78,5%). Good control has been noted also after 1 application with results of 83,7-89,5% on L2-L4 in the early assessments. Slight inferior effectiveness was observed at lower dose rate. Taking into account all trials, the dose rate of 1 l/ha can be determined MED for control of PYRNTE in spring barley in the NE zone.

Spring Barley (HORVS) – Ramularia leaf spot of barley (RAMUCC - *Ramularia collo-cygni*)

Four field trials were established in 2021 in order to determine the minimum effective dose for the control of RAMUCC in spring barley. Trials from the Maritime EPPO zone were carried out in Great Britain (1 trial) and Germany (2 trials), and one trial from the North-East EPPO zone was carried out in Poland.
CA3642 was tested at the intended dose rate, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.
No trials are available from the South-East EPPO zone in barley, however the data from the presented EPPO zones show comparable data on the same leaf levels at the same timing, therefore it is expected that similar efficacy would be obtained in the 3rd EPPO zone.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-221, Table 3.2-222, Table 3.2-223 and Table 3.2-224.

HORVS – RAMUCC – Maritime EPPO zone

A total of 3 trials from the Maritime EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0 L/ha of CA3642 against RAMUCC in spring barley. The trials were carried out in Great Britain or Germany in 2021.
The first application took place at crop stage BBCH 30-33 and the second application was done 12-19 days later, at BBCH 52-61.

Table 3.2-221: Minimum effective dose of CA3642 against RAMUCC in spring barley – Maritime EPPO zone

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM code*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha
Efficacy after 2 applications								

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM code***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
LEAF1 early	DEU	27.0	15.0		PESSEV Efficacy	16.3 a 16.3	**6.4 c** ~~60.4~~ **60.5**	15.0 ab ~~7.4~~ 7.5
	DEU	36.0	16.0	TL	PESSEV Efficacy	39.8 a 39.8 a	**5.7 b** **85.7** **bc**	5.9 b ~~85.2~~ 85.1 b
Mean efficacy				2	*Mean* Min Max	*28.0* 16.3 39.8	***73.1*** ~~60.4~~ **60.5** **85.7**	*46.3* ~~7.4~~ 7.5 ~~85.2~~ 85.1
LEAF1 late	GBR	52.0	33.0		PESSEV Efficacy	24.2 a 24.2	**13.1 b** ~~45.9~~ **46.0**	12.5 b ~~48.3~~ 48.2
	DEU	39.0	27.0		PESSEV Efficacy	60.4 a 60.4	**41.4 bc** ~~31.5~~ **31.4**	40.3 bc ~~33.3~~ 33.2
Mean efficacy				2	*Mean* Min Max	*42.3* 24.2 60.4	***38.7*** ~~31.5~~ **31.4** ~~45.9~~ **46.0**	~~*40.8*~~ *40.7* ~~33.3~~ 33.2 ~~48.3~~ 48.2
LEAF2 early	DEU	36.0	16.0		PESSEV Efficacy	16.7 a 16.7	**4.5 b** ~~73.1~~ **73.4**	4.3 b 74.3
	DEU	27.0	15.0		PESSEV Efficacy	18.6 b 18.6	**8.9 cd** **52.0**	17.5 b ~~6.1~~ 6.0
Mean efficacy				2	*Mean* Min Max	*17.7* 16.7 18.6	~~***62.5***~~ ***62.7*** **52.0** ~~73.1~~ **73.4**	*40.2* ~~6.1~~ 6.0 74.3
LEAF2 late	GBR	52.0	33.0		PESSEV Efficacy	35.1 a 35.1	**19.3 b** ~~45.0~~ **45.2**	20.3 b 42.2
	DEU	39.0	27.0		PESSEV Efficacy	60.5 a 60.5	**38.8 bc** **35.9**	44.1 bc ~~27.1~~ 27.2
Mean efficacy				2	*Mean* Min Max	*47.8* 35.1 60.5	~~***40.4***~~ ***40.6*** **35.9** ~~45.0~~ **45.2**	~~*34.6*~~ *34.7* ~~27.1~~ 27.2 42.2
LEAF3 early	DEU	27.0	15.0		PESSEV Efficacy	21.38 a 21.4	**9.1 bc** **57.3**	10.5 bc ~~50.7~~ 50.8
Mean efficacy				1	*Mean*	*21.4*	***57.3***	~~*50.7*~~ *50.8*
LEAF3 late	GBR	52.0	33.0		PESSEV Efficacy	51.3 a 51.3	**28.4 b** ~~44.6~~ **44.7**	27.8 b ~~45.8~~ 45.9
	DEU	39.0	27.0		PESSEV Efficacy	68.2 a 68.2	**45.8 b** **32.8**	42.2 b 38.1
Mean efficacy				2	*Mean* Min Max	*59.8* 51.3 68.2	~~***38.7***~~ ***38.8*** **32.8** ~~44.6~~ **44.7**	*42.0* 38.1 ~~45.8~~ 45.9
Efficacy after 1 application								
LEAF2 early	DEU	15.0	-	TA	PESSEV Efficacy	5.8 a 5.8 a	**2.4 d** ~~58.6~~ **59.7** **cd**	2.2 d ~~62.1~~ 61.7 cd
Mean efficacy				1	*Mean*	*5.8*	***58.6***	*62.1*
LEAF3 early	DEU	15.0	-	TA	PESSEV Efficacy	8.4 a 8.4 a	**4.0 c** **52.4** **d**	4.0 c ~~52.4~~ 52.2 d
Mean efficacy				1	*Mean*	*8.4*	***52.4***	*52.4*

UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) □ transformed data are not considered for mean

At the early assessment dates (15-16 DA-B), there was a numerical difference observed between the highest intended dose rate and the reduced rate of CA3642 on:

- leaf level 1 across 2 trials (1.0 L/ha, 73 % efficacy, 0.6 L/ha, 46 % efficacy) with a statistically significant difference in 1 of the trials,
- leaf level 2 across 2 trials (1.0 L/ha, 63 % efficacy, 0.6 L/ha, 40 % efficacy) with a statistically significant difference in 1 of the trials,
- leaf level 3 in 1 trial (1.0 L/ha, 57 % efficacy, 0.6 L/ha, 51 % efficacy) with no significant difference.

At later assessment dates (27-33 DA-B), there was no dose response on leaf levels 1 and 3 across 2 trials in both cases. There was a numerical difference between the 1.0 L/ha rate (40%) and the reduced 0.6 L/ha rate (35%) across 2 trials on leaf level 2 that is not a statistically significant in either of the trials.

Comments of zRMS:

3 efficacy trials have been submitted to determine minimum effective dose to control of *Ramularia collo-cygni* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved low to moderate effectiveness after 2 applications. The mean efficacy was 57,3-73,1% in the early assessments and 38,7-40,6% in the late observations. Also low control was observed after 1 application with results of 52,4-58,6% on L2 and L3 in the early assessments. Similar on slight inferior effect has been noted at dose rate of 0,6 l/ha. Limited number of trials was available and cMSs are kindly asked to consider this use on national level.

HORVS – RAMUCC – North-East EPPO zone

One trial from Lithuania in the North-East EPPO zone in 2021 is available to justify the minimum effective dose of two applications of 1.0 L/ha of CA3642 against RAMUCC in spring barley.
The first application took place at crop stage BBCH 31 and the second application was done 28 days later, at BBCH 49.

Table 3.2-222: Minimum effective dose of CA3642 against RAMUCC in spring barley – trials from North-East EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 early	LTU	27.0	15.0	TA	PESSEV Efficacy	6.9 a 6.9 a	**1.5 b** ~~78.3~~ **78.0** **b**	1.4 b ~~79.7~~ 79.3 b
Mean efficacy				1	*Mean*	*6.9*	*~~78.3~~ **78.0***	*~~79.7~~ 79.3*
LEAF2 early	LTU	27.0	15.0	TA	PESSEV Efficacy	10.1 a 10.1 a	**2.3 bc** ~~77.2~~ **77.3** **bc**	1.6 bc ~~84.2~~ 84.4 bc
Mean efficacy				1	*Mean*	*10.1*	*~~77.2~~ **77.3***	*~~84.2~~ 84.4*
Efficacy after 1 application								
LEAF3 early	LTU	12.0	-	TL	PESSEV Efficacy	5.5 a 5.5 a	**1.2 b** ~~78.2~~ **79.1** **b**	1.6 b ~~70.9~~ 71.4 b
Mean efficacy				1	*Mean*	*5.5*	*~~78.2~~ **79.1***	*~~70.9~~ 71.4*

b UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-223: Minimum effective dose of CA3642 against RAMUCC in spring barley – supporting trials from Germany

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM code*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 early	DEU	27	15		PESSEV Efficacy	16.3 a 16.3	**6.4 c** ~~60.4~~ **60.5**	15.0 ab ~~7.4~~ 7.5
	DEU	36	16	TL	PESSEV Efficacy	39.8 a 39.8 a	**5.7 b** **85.7** **bc**	5.9 b ~~85.2~~ 85.1 b
Mean efficacy				2	*Mean* Min Max	*28* 16.3 39.8	***73.1*** ~~60.4~~ **60.5** **85.7**	*46.3* ~~7.4~~ 7.5 ~~85.2~~ 85.1
LEAF1 late	DEU	39	27		PESSEV Efficacy	60.4 a 60.4	**41.4 bc** ~~31.5~~ **31.4**	40.3 bc ~~33.3~~ 33.2
Mean efficacy				1	*Mean*	*60.4*	~~*31.5*~~ ***31.4***	~~*33.3*~~ *33.2*
LEAF2 early	DEU	36	16		PESSEV Efficacy	16.7 a 16.7	**4.5 b** ~~73.1~~ **73.4**	4.3 b 74.3
	DEU	27	15		PESSEV Efficacy	18.6 b 18.6	**8.9 cd** **52**	17.5 b ~~6.1~~ 6.0
Mean efficacy				2	*Mean* Min Max	*17.7* 16.7 18.6	~~*62.5*~~ ***62.7*** **52** ~~73.1~~ **73.4**	*40.2* ~~6.1~~ 6.0 74.3
LEAF2 late	DEU	39	27		PESSEV Efficacy	60.5 a 60.5	**38.8 bc** **35.9**	44.1 bc ~~27.1~~ 27.2
Mean efficacy				1	*Mean*	60.5	**35.9**	~~27.1~~ 27.2
LEAF3 early	DEU	27	15		PESSEV Efficacy	21.38 a 21.4	**9.1 bc** **57.3**	10.5 bc ~~50.7~~ 50.8
Mean efficacy				1	*Mean*	*21.4*	***57.3***	~~*50.7*~~ *50.8*
LEAF3 late	DEU	39	27		PESSEV Efficacy	68.2 a 68.2	**45.8 b** **32.8**	42.2 b 38.1
Mean efficacy				1	*Mean*	68.2	**32.8**	38.1
Efficacy after 1 application								
LEAF2 early	DEU	15	-	TA	PESSEV Efficacy	5.8 a 5.8 a	**2.4 d** **58.6 59.7** **cd**	2.2 d ~~62.1~~ 61.7 cd
Mean efficacy				1	*Mean*	*5.8*	***58.6 59.7***	~~*62.1*~~ *61.7*
LEAF3 early	DEU	15	-	TA	PESSEV Efficacy	8.4 a 8.4 a	**4.0 c** **52.4** **d**	4.0 c ~~52.4~~ 52.2 d
Mean efficacy				1	*Mean*	*8.4*	***52.4***	~~*52.4*~~ *52.2*

[b] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) □ transformed data are not considered for mean calculation but for description of statistically significant differences

Table 3.2-224: Minimum effective dose of CA3642 against RAMUCC in spring barley – summary North-East and supporting trials

Leaf level assm. timing	Country	DA-A	DA-B	No. of trials & ARM code*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 early	DEU	27	15		PESSEV Efficacy	16.3 a 16.3	**6.4 c** ~~60.4~~ **60.5**	15.0 ab ~~7.4~~ 7.5

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM code***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
	DEU	36	16	TL	PESSEV Efficacy	39.8 a 39.8 a	**5.7 b** **85.7** **bc**	5.9 b ~~85.2~~ 85.1 b
	LTU	27	15	TA	PESSEV Efficacy	6.9 a 6.9 a	**1.5 b** **78.3** **b**	1.4 b 79.7 b
Mean efficacy		NE and PL neighbouring countries		3	Mean Min Max	21.0 6.9 39.8	**74.8** ~~60.4~~ **60.5** **85.7**	57.4 ~~7.4~~ 7.5 ~~85.2~~ 85.1
LEAF2 early	DEU	36	16		PESSEV Efficacy	16.7 a 16.7	**4.5 b** ~~73.1~~ **73.4**	4.3 b 74.3
	DEU	27	15		PESSEV Efficacy	18.6 b 18.6	**8.9 cd** **52**	17.5 b ~~6.1~~ 6.0
	LTU	27	15	TA	PESSEV Efficacy	10.1 a 10.1 a	**2.3 bc** **77.2** **bc**	1.6 bc 84.2 bc
Mean efficacy		NE and PL neighbouring countries		3	Mean Min Max	15.1 10.1 18.6	~~67.4~~ **67.5** **52.0** **77.2**	54.9 ~~6.1~~ 6.0 84.2
Efficacy after 1 application								
LEAF3 early	DEU	15	-	TA	PESSEV Efficacy	8.4 a 8.4 a	**4.0 c** **52.4** **d**	4.0 c ~~52.4~~ 52.2 d
	LTU	12	-	TL	PESSEV Efficacy	5.5 a 5.5 a	**1.2 b** ~~78.2~~ **79.1** **b**	1.6 b ~~70.9~~ 71.4 b
Mean efficacy		NE and PL neighbouring countries		2	Mean Min Max	7.0 5.5 8.4	~~65.3~~ **65.8** **52.4** ~~78.2~~ **79.1**	~~61.7~~ 61.8 ~~52.4~~ 52.2 ~~70.9~~ 71.4

[b] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

At an early assessment date (15 DA-B) in one North-East zone trial, there was no dose response after two applications of CA3642 on leaf 1 or leaf 2.
In an assessment after the first application, a numerical, but not statistically significant difference was observed between the highest intended dose rate (1.0 L/ha, 78 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, 71 %) on leaf level 3 at 12 DA-A in 1 trial.

In the collated data summarised across early assessments (15-16 DA-B) in 2 trials from Germany and 1 trial from Lithuania, there is a dose response following two applications, with an average 75% efficacy at 1.0 L/ha and 57% at 0.6 L/ha across 3 trials on leaf 1 and an average 67% efficacy at 1.0 L/ha and 55% at 0.6 L/ha across 3 trials on leaf 2.
After one application, a slight numerical, but not statistically significant difference was observed between the highest intended dose rate (1.0 L/ha, ~~78~~ 79.1 % efficacy) of CA3642 and the reduced dose rate (0.6 L/ha, 71 %) on leaf level 3 at 12-15 DA-A across 2 trials.

Comments of zRMS:

Only 1 efficacy trial has been submitted to determine minimum effective dose to control of *Ramularia collo-cygni* in spring barley in the North-East EPPO climatic zone. Also 2 trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications in the early assessments. The mean efficacy was 67,4 and 74,8% on L1 and L2 respectively. Dose response was visible on L1 with results of 74,8% (1 l/ha) vs 57,4% (0,6 l/ha). Moderate control has been noted also after 1 application (65.3%). No differences between doses were observed in this case. Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of RAMUCC in spring barley.

Spring Barley (HORVS) – Leaf blotch of cereals (RHYNSE- *Rhynchosporium secalis*)

Two field trials were established in 2021 in order to determine the minimum effective dose for the control of RHYNSE in spring barley. These trials were carried out in Great Britain (1 trial) and Germany (1 trial) in the Maritime EPPO zone.
No trials are available from the South-East or North-East EPPO zones in HORVS, however some data is provided in the dossier for winter barley (HORVW), which can be supportive of the use against the same pathogen in spring-sown barley.

CA3642 was tested at the intended dose rate, 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole) compared to the reduced dose rate of 0.6 L/ha (90 g azoxystrobin and 90 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose’*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-225.

HORVS – RHYNSE – Maritime EPPO zone

A total of 2 trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0 L/ha of CA3642 against RHYNSE in spring barley. The trials were carried out in Great Britain or Germany in 2021.
The first application took place at crop stage BBCH 31-33 and the second application was done 12-19 days later, at BBCH 52-55.

Table 3.2-225: Minimum effective dose of CA3642 against RHYNSE in spring barley – Maritime EPPO zone

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Efficacy after 2 applications								
LEAF1 late	GBR	52.0	33.0		PESSEV Efficacy	4.7 a 4.7	~~2.1~~ **2.5 b** ~~55.3~~ **56.3**	2.1 b ~~55.3~~ 55.7
Mean efficacy				1	*Mean*	*4.7*	~~*55.3*~~ ***56.3***	~~*55.3*~~ *55.7*
LEAF2 early	DEU	27.0	15.0		PESSEV Efficacy	10.3 a 10.3	**2.2 b** ~~78.6~~ **79.2**	4.5 b ~~56.3~~ 56.2
	GBR	34.0	15.0		PESSEV Efficacy	5.6 a 5.6	**3.1 b** **44.6**	3.1 b ~~44.6~~ 45.1
Mean efficacy				2	*Mean* Min Max	*8.0* 5.6 10.3	~~*61.6*~~ ***61.9*** **44.6** ~~78.6~~ **79.2**	~~*50.5*~~ *50.7* ~~44.6~~ 45.1 ~~56.3~~ 56.2
LEAF2 late	GBR	52.0	33.0		PESSEV Efficacy	12.3 a 12.3	**5.0 cd** **59.3**	5.0 cd ~~59.3~~ 59.2
Mean efficacy				1	*Mean*	*12.3*	***59.3***	~~*59.3*~~ *59.2*
LEAF3 early	GBR	34.0	15.0		PESSEV Efficacy	32.7 a 32.7	**24.3 b** ~~25.7~~ **25.8**	24.3 b ~~25.7~~ 25.6
	DEU	27.0	15.0		PESSEV Efficacy	14.2 a 14.2	**4.3 bc** ~~69.7~~ **70.0**	8.0 abc ~~43.7~~ 43.9

Leaf level assm. timing	**Country**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
Mean efficacy				2	*Mean* Min Max	*23.5* 14.2 32.7	~~*47.7*~~ ***47.9*** ~~25.7~~ **25.8** ~~69.7~~ **70.0**	~~*34.7*~~ *34.8* ~~25.7~~ 25.6 ~~43.7~~ 43.9
LEAF3 late	GBR	52.0	33.0		PESSEV Efficacy	45.3 a 45.3	**30.4 b** ~~32.9~~ **32.8**	30.1 b ~~33.6~~ 33.7
Mean efficacy				1	*Mean*	*45.3*	~~*32.9*~~ ***32.8***	~~*33.6*~~ *33.7*
LEAF4 early	GBR	34.0	15.0		PESSEV Efficacy	63.2 a 63.2	**35.0 b** **44.6**	34.5 b 45.4
Mean efficacy				1	*Mean*	*63.2*	***44.6***	*45.4*
Efficacy after 1 application								
LEAF3 early	GBR	19.0	-		PESSEV Efficacy	21.4 a 21.4	**12.3 b** **42.5 42.7**	12.0 b 43.9
Mean efficacy				1	*Mean*	*21.4*	~~*42.5*~~ ***42.7***	*43.9*
LEAF4 early	GBR	19.0	-		PESSEV Efficacy	58.7 a 58.7	**31.6 b** **46.2 46.1**	31.7 b 46.0
Mean efficacy				1	*Mean*	*58.7*	~~*46.2*~~ ***46.1***	*46.0*

[b] UTC: % infestation in untreated control at assessment date

At the early assessment dates (15 DA-B), there was no dose response on leaf level 4 in 1 trial, and there was a numerical difference observed between the highest intended dose rate and the reduced rate of CA3642 on:

- leaf level 2 across 2 trials (1.0 L/ha, 62 % efficacy, 0.6 L/ha, 51 % efficacy) with no significant differences,
- leaf level 3 across 2 trials (1.0 L/ha, 48 % efficacy, 0.6 L/ha, 35 % efficacy) with no significant differences.

At later assessment dates (33 DA-B), there was no dose response on leaf levels 1, 2 or 3 in 1 trial.

In an assessment after the first application, there was no dose response on leaf levels 3 or 4 at 19 DA-A in 1 trial.

Comments of zRMS:

2 efficacy trial have been submitted to control of *Rhynchosporium secalis* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved low to moderate effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 56,3% on L1 and 59,3-61,9% on L2. The results on L3 and L4 were insufficient. The dose rate of 0,6 l/ha presented significant inferior effectiveness compared to the higher dose. Insufficient control was observed after 1 application with results of 42,7% on L3 and 46,1% on L4 at 1 l/ha in the early assessments. Similar effect was visible for the lower dose. Limited number of trials was available and cMSs are kindly asked to consider this use on national level.

Spring Barley (HORVS) – Green leaf area

A total of 15 trials are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in spring barley, assessed in terms of green leaf area. Trials were carried out in the Maritime EPPO zone in Great Britain (3 trials) and Germany (3 trials) and in the North-East EPPO zone in Lithuania (2 trials) and Poland (7 trials), all in 2021.
No trials are available from the South-East EPPO zone in HORVS, however some data is provided in

the dossier for winter barley (HORVW), which can be supportive of the use against the same pathogens in spring-sown barley.

HORVS – Green leaf area – Maritime EPPO zone

A total of 6 Maritime EPPO zone trials (3 trials in Great Britain and 3 trials in Germany) have generated data on green leaf area following 2 applications of CA3642 in spring barley.

Table 3.2-226: Minimum effective dose of CA3642 assessed as green leaf area in spring barley – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
PLANT late	DEU	39	27			4.0 g 4.0	**13.5 cd** **337.5**	15.8 bc 395.0
	DEU	50	30			50.0 b 50.0	**75.0 a** **150.0**	75.0 a 150.0
	GBR	44	24			27.5 b 27.5	**61.3 a** **222.9**	61.3 a 222.9
	GBR	65	42			14.3 b 14.3	**26.3 a** **183.9**	27.5 a 192.3
Mean Efficacy				*4*	*Mean* Min Max	*24.0* 4.0 50.0	***223.6*** **150.0** **337.5**	*240.1* 150.0 395.0
LEAF1 late	GBR	52	33			55.0 b 55.0	**77.5 a** **140.9**	77.5 a 140.9
				1		183.9	**337.5**	395.0
LEAF2 late	DEU	50	29			7.5 c 7.5	**35.0 a** **466.7**	32.5 ab 433.3
	GBR	52	33			46.3 c 46.3	**67.5 ab** **145.8**	67.5 ab 145.8
Mean Efficacy				2	Mean Min Max	26.9 7.5 46.3	**306.3** **145.8** **466.7**	289.6 145.8 433.3
LEAF3 late	GBR	52	33			3.8 d 3.8	**37.5 bc** **986.8**	37.5 bc 986.8
Mean Efficacy				1		3.8	**986.8**	986.8

UTC: % green leaf area in untreated control at assessment date

Efficacy in terms of green leaf area was assessed on the whole plant (4 trials) or on individual leaf levels (2 trials) at 24-42 DA-B. There were two pathogens present in 3 of the trials, and one pathogen present in 3 trials.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area on the plant increased by 224% compared to the untreated control across 4 trials. The reduced dose rate 0.6 L/ha increased the mean green leaf area by 240 %. On leaf level 1, the mean green leaf area increased by 338% and 395% at the 1.0 L and 0.6 L/ha rates, respectively, in one trial. On leaf level 2, the mean green leaf area increased by 306% and 290% at the 1.0 L and 0.6 L/ha rates, respectively, across 2 trials. On leaf level 3, the mean green leaf area increased by 987% at both the 1.0 L and 0.6 L/ha rates, in 1 trial.
Overall, there was evidence of a dose response in 1 of the data sets for green leaf area.

The increase of green leaf area induced by CA3642 at 1.0 L/ha as well as by the reduced dose rate (0.6 L/ha) was statistically significant compared to the untreated control in all 8 data sets.

Comments of zRMS:

The mean green leaf area of whole plant increased by 123,6% after 2 applications of CA3642 at 1 l/ha and 140,1% at 0,6 l/ha. If we take leaves, an increase was significant higher with results of 237,5% and 295% on L1, 206,3% and 189,6% on L2, 868,8% and 886,8% on L3. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

HORVS – Green leaf area – North-East EPPO zone

A total of 9 North-East EPPO zone trials (2 trials in Lithuania and 7 trials in Poland) have generated data on green leaf area following 2 applications of CA3642 in spring barley.

Table 3.2-227: Minimum effective dose of CA3642 assessed as green leaf area in spring barley – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
					Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha
PLANT	LTU	27	15			40.0 a 40.0	60.0 a 150.0	50.0 a 125.0
	LTU	28	15			60.0 a 60.0	52.5 a 87.5	52.5 a 87.5
	POL	34	15			20.0 c 20.0	37.5 a 187.5	30.0 b 150.0
	POL	38	24			31.3 a 31.3	41.3 a 132.0	40.0 a 128.0
	POL	41	27			20.0 a 20.0	40.0 a 200.0	40.0 a 200.0
	POL	43	29			25.0 f 25.0	31.3 bcd 125.2	31.3 bcd 125.2
	POL	45	24			30.0 a 30.0	33.8 a 112.5	33.8 a 112.5
	POL	47	26			40.0 a 40.0	60.0 a 150.0	60.0 a 150.0
	POL	47	31			27.5 a 27.5	26.3 a 95.6	26.3 a 95.6
Mean efficacy				**9**	***Mean*** **Min** **Max**	***32.6*** **20.0** **60.0**	***137.8*** **87.5** **200.0**	***130.4*** **87.5** **200.0**

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed on the whole plant in all 9 trials at 15-31 DA-B. There were two pathogens present in 3 of the trials, and one pathogen present in 6 trials.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area on the plant increased by 138% compared to the untreated control across 9 trials. The reduced dose rate 0.6 L/ha increased the mean green leaf area by 130 %.
Overall, there was evidence of a dose response in 3 of the data sets for green leaf area with a significant difference between rates in 1 trial.

The increase of green leaf area induced by CA3642 at 1.0 L/ha as well as by the reduced dose rate (0.6 L/ha) was statistically significant compared to the untreated control in 2 trials.

Comments of zRMS:

The mean green leaf area of whole plant increased by 37,8% after 2 applications of CA3642 at 1 l/ha and 30,4% at 0,6 l/ha. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted.

Summary and conclusions on the minimum effective dose

On spring barley, five foliar diseases were assessed in 16 trials across two EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2 and 3. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

An overall summary of the efficacy data used to support minimum effective dose is presented for 2 applications in Table 3.2-228. Overall, across the two EPPO zones and all diseases, a dose rate response was generally observed for higher disease control with the higher dose rate; the rate of 1.0 L/ha generally gave better control compared to the rate of 0.6 L/ha with statistically significant differences in many cases, and differences between rates were generally more apparent at the earlier assessment timings. The higher rate is needed particularly for the useful control of RAMUCC at early timings.

While there was a slight dose response in terms of Green Leaf Area (GLA) in the North-East EPPO zone trials, there was no similar trend in the Maritime climatic zone trials. This may be due to the extended length of time that leaves remain green for spring barley compared to wheat, and also that the overall differences between the two dose rates in terms of efficacy across trials at early or late timings were generally less than 5%, with the exception of PYRNTE (early timings, North-East zone trials) and RAMUCC (early timings, Maritime zone trials).
Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

In this dossier data presented for minimum effective dose is primarily from assessments where 2 applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved with 1.0 L/ha depending on the disease pressure. According to disease development conditions, a single application may provide sufficient disease control (e.g., ERYSGH, PUCCHD, PYRNTE, based on data presented here), therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications.

While no data are presented from trials conducted in the South-East climatic zone, it is possible to use the Maritime climatic zone data for CA3642 at 1.0 L product/ha as the worst-case, most challenging conditions for product performance, with relatively warm, damp conditions that are often optimal for phytopathogenic fungal disease development in cereals. The Applicant therefore considers the Maritime climatic zone data as representative of the product performance under the most challenging conditions and these data demonstrate optimum efficacy at the minimum effective dose. In addition, some supportive data is available in the dossier on winter-sown barley (HORVW) on the same pathogens from the South-East EPPO zone.

Therefore, a minimum effective dose rate of 1.0 L/ha is proposed for CA3642 on spring barley in each of the relevant EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.0 L/ha is the minimum effective dose to control a range of foliar diseases on spring barley.

Table 3.2-228: Overall summary – Efficacy of CA3642 after 2 applications at different dose rates in in spring barley

Disease	EPPO zone	Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
						Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha
ERYSGH	Maritime	LEAF2 early	40.0	17.0	1	-	*21.3*	97.2	97.2
		LEAF3 early	40.0	17.0	1	-	*39.5*	76.7	73.7
	North-East	LEAF4 early	36.0	15.0	1	-	*5.9*	93.2	84.7
	Average against ERYSGH across Maritime and North-East zones, across leaf levels at early timings, 3 data sets						***22.2***	**89.0**	**85.2**
PUCCHD	Maritime	LEAF1 early	35.0	15.0	1	-	*5.7*	100.0	100.0
		LEAF2 early	35.0	15.0	1	-	*4.1*	100.0	99.4
		LEAF3 early	35.0	15.0	1	-	*5.8*	100.0	90.6
		LEAF1 late	44.0	24.0	1	-	*8.4*	97.9	96.2
		LEAF2 late	44-50	24-29	2	Mean Min Max	*7.1* 5.3 9.0	95.0 93.7 96.2	95.9 93.6 98.1
	North-East	LEAF1 early	28.0	15.0	1	-	*5.7*	87.7	87.7
		LEAF2 late	38.0	24.0	1	-	*6.0*	90.0	88.3
	Average against PUCCHD across Maritime and North-East zones, across leaf levels at early timings, 4 data sets						***5.3***	**96.9**	**94.4**
	Average against PUCCHD across Maritime and North-East zones, across leaf levels at late timings, 3 data sets						***7.2***	**94.3**	**93.5**
	NE and PL neighbouring countries	LEAF2 late	38-50	24-29	2	Mean Min Max	*5.7* 5.3 6.0	93.1 90.0 96.2	93.2 88.3 98.1

Disease	**EPPO zone**	**Leaf level assm. Timing**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha**
PYRNTE	Maritime	LEAF2 late	50.0	29.0	1	-	*5.2*	76.9	71.2
	North-East	LEAF1 early	29-34	14-15	2	*Mean* Min Max	*12.5* 4.8 20.1	91.8 83.6 100.0	71.3 46.8 95.8
		LEAF2 early	29-34	14-15	3	*Mean* Min Max	*16.2* 6.4 28.9	86.3 70.9 98.4	69.5 34.3 89.1
		LEAF3 early	29-36	14-16	3	*Mean* Min Max	*23.8* 7.0 57.0	78.4 62.6 88.6	65.9 27.9 87.1
		LEAF4 early	29-36	15	2	*Mean* Min Max	*6.8* 6.2 7.4	**99.2** **98.4** **100.0**	96.8 93.5 100.0
		Average across NE zone, early timings 10 data sets					***14.8***	**88.9**	**75.9**
		LEAF1 late	38-47	24-27	3	*Mean* Min Max	*9.3* 4.1 16.6	**96.5** **94.4** **100.0**	95.2 92.7 100.0
		LEAF2 late	38-47	24-29	5	*Mean* Min Max	*13.3* 4.3 30.0	**88.9** **81.4** **98.3**	86.3 80.4 95.7
		Average across NE zone, late timings 8 data sets					***11.3***	**92.7**	**90.8**
	Average against PYRNTE across Maritime and North-East zones, across leaf levels at late timings, 9 data sets						***9.3***	**87.4**	**84.2**
RAMUCC	Maritime	LEAF1 early	27-36	15-16	2	*Mean* Min Max	*28.0* 16.3 39.8	73.1 60.4 85.7	46.3 7.4 85.2
		LEAF2 early	27-36	15-16	2	*Mean* Min Max	*17.7* 16.7 18.6	62.5 52.0 73.1	40.2 6.1 74.3
		LEAF3 early	27	15	1	-	*21.4*	57.3	50.7
		Average across Maritime zone, early timings 5 data sets					***22.4***	**64.3**	**45.7**
		LEAF1 late	39-52	27-33	2	*Mean* Min Max	*42.3* 24.2 60.4	38.7 31.5 45.9	40.8 33.3 48.3
		LEAF2 late	39-52	27-33	2	*Mean* Min Max	*47.8* 35.1 60.5	40.4 35.9 45.0	34.6 27.1 42.2
		LEAF3 late	39-52	27-33	2	*Mean* Min Max	*59.8* 51.3 68.2	38.7 32.8 44.6	42.0 38.1 45.8
		Average across Maritime zone, late timings 6 data sets					***50.0***	**39.3**	**39.1**

Disease	EPPO zone	Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	
						Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.6 L/ha 90 g AZX/ha + 90 g PTZ/ha
RAMUCC	North-East	LEAF1 early	27	15	1	-	*6.9*	78.3	79.7
		LEAF2 early	27	15	1	-	*10.1*	77.2	84.2
		Average across NE zone, early timings 6 data sets					***8.5***	**77.8**	**82.0**
RHYNSE	Maritime	LEAF2 early	27-34	15	2	*Mean* Min Max	*8.0* 5.6 10.3	61.6 44.6 78.6	50.5 44.6 56.3
		LEAF3 early	27-34	15	2	*Mean* Min Max	*23.5* 14.2 32.7	47.7 25.7 69.7	34.7 25.7 43.7
		LEAF4 early	34	15	1	-	*63.2*	44.6	45.4
		Average across Maritime zone, early timings 5 data sets					***31.6***	**51.3**	**43.5**
		LEAF1 late	52	33	1	-	*4.7*	55.3	55.3
		LEAF2 late	52	33	1	-	*12.3*	59.3	59.3
		LEAF3 late	52	33	1	-	*45.3*	32.9	33.6
		Average across Maritime zone, late timings 3 data sets					***20.8***	**49.2**	**49.4**

Oilseed rape (BRSNW)

A total of 98 efficacy trials are available on BRSNW in order to fulfil the EPPO requirements for the justification of the minimum effective dose of 1.2-1.0 L/ha CA3642 for the control of ALTEBA, BOTRCI, ERYSCR, LEPTMA, PYRPBR and SCLESC.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Winter oilseed rape (BRSNW) – Black spot (ALTEBA - *Alternaria brassicae*)

A total of 25 field trials were established between 2019 and 2021 in order to determine the minimum effective dose for the control of ALTEBA in winter oilseed rape.
Trials from the Maritime EPPO zone were carried out in the Czech Republic (1 trial), Germany (5 trials) and Great Britain (1 trial).
Trials from the North-East EPPO zone were carried out in Latvia (3 trials) or Poland (7 trials).
Trials from the South-East EPPO zone were carried out in Hungary (4 trials), Romania (2 trials) or Slovakia (2 trials).

CA3642 was tested at the intended dose rates, 1.0 L/ha and 1.2 L/ha (150 g or 180 g azoxystrobin and 150 g or 180 g prothioconazole) compared to the reduced dose rate of 0.8 L/ha (120 g azoxystrobin and 120 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-229, and Table 3.2-231.

BRSNW – ALTEBA – Maritime EPPO zone

Seven trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in the Czech Republic (1 trial), Germany (5 trials) and Great Britain (1 trial) between 2019 and 2021.
In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 50-55 and the second application was done 19-41 days later, at BBCH 65.

Table 3.2-229: Minimum effective dose of CA3642 against ALTEBA in winter oilseed rape – Maritime EPPO zone

Part Rated	Coun-try	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha
Efficacy after 2 applications									
LEALOW	GBR	97	72		PESSEV Efficacy	53.08 a 53.08	**37.40 b** **29.5**	**37.13 b** **30.0**	36.58 b 31.1
LEAMID	GBR	97	72		PESSEV Efficacy	24.52 a 24.52	**21.45 a** **12.5**	**21.25 a** **13.3**	22.84 a 6.9
LEAUPP	GBR	97	72		PESSEV Efficacy	23.60 a 23.6	**13.19 b** **44.1**	**13.10 b** **44.5**	13.17 b 44.2
LEAUPP	GBR	97	72	TL[32]		22.71 a 22.71	12.88 b 43.3	12.84 b 43.5	12.86 b 43.4
LEAF mean across levels					*Mean*	*33.7*	***28.7***	***29.3***	*27.4*
LEAF	DEU	95	76		PESSEV Efficacy	6.59 a 6.59	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
LEAF	DEU	102	76		PESSEV Efficacy	10.03 a 10.03	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
Mean efficacy				3	*Mean* Min Max	*16.8* 6.6 33.7	***76.2*** **28.7** **100.0**	***76.4*** **29.3** **100.0**	*75.8* 27.4 100.0
POD	CZE	94	73	+	PESSEV Efficacy	39.78 a 39.8	**9.53 c** **76.0**	**9.93 c** **75.0**	19.55 b 50.9
POD	DEU	95	76		PESSEV Efficacy	15.42 a 15.4	**0.00 b** **100.0**	**0.00 b** **100.0**	0.17 b 98.9
POD	DEU	95	76	TA[25]	PESSEV Efficacy	14.95 a 15.0	0.00 d 100.0	0.00 d 100.0	0.01 bcd 99.9
POD	DEU	102	76		PESSEV Efficacy	22.90 a 22.9	**0.00 c** **100.0**	**0.00 c** **100.0**	0.00 c 100.0
POD	DEU	96	55		PESSEV Efficacy	66.14 66.1	**8.17 e** **87.6**	**10.42 d** **84.2**	
Mean efficacy				4	*Mean* Min	*36.1* 15.4	***90.9*** **76.0**	***89.8*** **75.0**	

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
					Max	66.1	**100.0**	**100.0**	
Orthogonal comparison				3	*Mean* Min Max	*26.0* 15.4 39.8	***92.0*** **76.0** **100.0**	***91.7*** **75.0** **100.0**	*83.3* 50.9 100.0
STEM	DEU	109	73	T4		**18.76 a 18.8**	**4.13 cd 78.0**	**4.25 cd 77.3**	5.44 bcd 71.0
STEM	DEU	109	73	TA[42]		**18.60 a 18.6**	**4.11 c 77.9**	**4.23 c 77.3**	5.34 c 71.3
STEM	DEU	112	73	T6		**17.44 a 17.4**	**1.94 c 88.9**	**3.69 bc 78.8**	2.06 c 88.2
STEM	DEU	112	73	TA[59]		**17.32 a 17.3**	**1.91 c 89.0**	**3.60 bc 79.2**	2.04 c 88.2
Mean efficacy Orthogonal comparison				2	*Mean* Min Max	*18.1* 17.4 18.8	***83.4*** **78.0** **88.9**	***78.1*** **77.3** **78.8**	*79.6* 71.0 88.2

[a] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

<u>After two spring applications</u>

At assessment timings of 72-76 DA-B, two applications of CA3642 achieved the same level of efficacy on the leaves at all three dose rates with 76% control at 1.2 L, 1.0 L and 0.8 L/ha across 3 data sets with no significant differences between dose rates.

On the pods, two applications of CA3642 at 1.2 L and 1.0 L/ha achieved the same level of efficacy (92% efficacy) that was higher than the 0.8 L/ha rate (83% efficacy) across 3 trials at assessment timings of 55-76 DA-B. There was a significant difference between the two higher rates and the 0.8 L/ha rate in 1 of the trials. Across 4 trials, two applications of CA3642 at 1.2 L/ha achieved a slightly higher level of efficacy (91%) compared to the 1.0 L/ha rate (90%) with a statistically significant difference in 1 trial.

On the stems, two applications of CA3642 at 1.2 L/ha achieved a level of efficacy (83 % efficacy) that was slightly higher than that of the 1.0 L and 0.8 L/ha rates (78 % and 80% efficacy, respectively) across 2 trials at 73 DA-B. There were no significant differences between the three rates in either trial.

Comments of zRMS:

7 trials have been submitted to determine minimum effective dose for control of *Alternaria brassicae* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 2 spring applications. No differences between dose rates were visible on leaves and stems. Significant dose response was observed on pods in 3 out of 7 trials. The claimed dose rates of 1-1,2 l/ha had result of 92% whilst the lower dose rate of 0,8 l/ha presented effectiveness of 83%. Taking into account 2 applications, the dose rate of 1 l/ha can be determined MED for control of ALTEBA in winter oilseed rape in the MAR zone. However, no results after 1 application were available. Due to that, cMSs are kindly asked to consider this use on national level.

BRSNW – ALTEBA – North-East EPPO zone

A total of 10 trials from the North-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in Latvia (3 trials) or Poland (7 trials) between 2019 and 2021.
In trials where both applications were conducted in the spring, the first application took place at crop stage BBCH 33-55 and the second application was done 22-46 days later, at BBCH 65-69.
In 1 trial where the first application was conducted in the autumn and the second application was conducted in the spring, the first application took place at crop stage BBCH 15 and the second application was done 206 days later, at BBCH 69.

Table 3.2-230: Minimum effective dose of CA3642 against ALTEBA in winter oilseed rape – North-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[a]	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
Efficacy after 1 application									
LEAF	POL	22	22		PESSEV Efficacy	10.7 a 10.7	**0.5 b** **95.3**	**0.4 b** **96.3**	1.0 b 90.7
LEAF	POL	22	22	TL[6]		2.6 a 2.6	0.1 b 94.5	0.1 b 95.8	0.2 b 92.2
Mean efficacy				1	*Mean*	*10.7*	***95.3***	***96.3***	*90.7*
Efficacy after 2 applications									
LEAF	POL	43	21		PESSEV Efficacy	14.7 a 14.7	**0.5 b** **96.6**	**0.7 b** **95.2**	1.3 b 91.2
LEAF	POL	43	21	TL[17]		3.5 a 3.5	0.2 b 95.6	0.2 b 95.1	0.3 b 90.9
LEAF	POL	44	21		PESSEV Efficacy	7.5 a 7.5	**0.5 b** **93.3**	**0.4 b** **94.7**	
LEAF	POL	44	21	TA[12]		3.5 a 3.5	0.0 b 98.9	0.0 b 99.4	
Mean efficacy				2	*Mean* Min Max	*11.1* 7.5 14.7	***95.0*** **93.3** **96.6**	***95.0*** **94.7** **95.2**	
Orthogonal comparison				1	*Mean*	*14.7*	***96.6***	***95.2***	*91.2*
LEAF	POL	58	36		PESSEV Efficacy	20.3 a 20.3	**0.6 b** **97.0**	**1.0 b** **95.1**	4.8 b 76.4
LEAF	POL	65	42		PESSEV Efficacy	5.4 a 5.4	**0.3 b** **94.4**	**0.7 b** **87.0**	
LEAF	POL	65	42	TA[22]		2.3 a 2.3	0.0 b 99.2	0.0 b 97.3	
LEAF	POL	81	48		PESSEV Efficacy	7.6 a 7.6	**0.3 c** **96.1**	**0.6 c** **92.1**	2.0 b 73.7
LEAF	POL	72	50		PESSEV Efficacy	5.4 a 5.4	**2.7 cd** **50.0**	**2.7 cd** **50.0**	2.3 d 57.4
Mean efficacy				4	*Mean* Min Max	*9.7* 5.4 20.3	***84.4*** **50.0** **97.0**	***81.1*** **50.0** **95.1**	
Orthogonal comparison				3	*Mean* Min Max	*11.1* 5.4 20.3	***81.0*** **50.0** **97.0**	***79.1*** **50.0** **95.1**	*69.1* 57.4 76.4
POD	POL	58	36		PESSEV Efficacy	21.3 a 21.3	**0.5 b** **97.7**	**1.1 b** **94.8**	2.0 b 90.6
POD	POL	84	38		PESSEV Efficacy	5.2 a 5.2	**1.0 cd** **80.8**	**1.3 bcd** **75.0**	0.8 d 84.6
POD	POL	256	50		PESSEV Efficacy	6.8 a 6.8	**0.8 bc** **88.2**	**1.7 bc** **75.0**	1.9 bc 72.1

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
POD	POL	83	54		PESSEV Efficacy	5.6 a 5.6	**0.3 b** **94.6**	**0.4 b** **92.9**	2.0 b 64.3
Mean efficacy				4	*Mean* Min Max	*9.7* 5.2 21.3	***90.3*** **80.8** **97.7**	***84.4*** **75.0** **94.8**	*77.9* 64.3 90.6
				3***	*Mean* Min Max	*10.7* 5.2 21.3	***91.0*** **80.8** **97.7**	***87.6*** **75.0** **94.8**	*79.8* 64.3 90.6
STEM	POL	81	48		PESSEV Efficacy	7.1 a 7.1	**0.4 b** **94.4**	**1.3 b** **81.7**	1.9 b 73.2
STEM	LVA	85	49		PESSEV Efficacy	8.6 a 8.6	**0.9 b** **89.5**	**0.5 b** **94.2**	0.6 b 93.0
STEM	LVA	85	49	TL[31]		7.1 a 7.1	**0.6 b** **91.0**	**0.3 b** **95.3**	0.4 b 94.5
STEM	POL	256	50		PESSEV Efficacy	5.0 a 5.0	**0.6 b** **88.0**	**0.9 b** **82.0**	1.9 b 62.0
STEM	LVA	82	56		PESSEV Efficacy	4.2 a 4.2	**0.3 b** **92.9**	**0.2 b** **95.2**	0.6 b 85.7
STEM	LVA	83	54		PESSEV Efficacy	10.8 a 10.8	**0.3 b** **97.2**	**0.3 b** **97.2**	0.6 b 94.4
Mean efficacy				5	*Mean* Min Max	*7.1* 4.2 10.8	***92.4*** **88.0** **97.2**	***90.1*** **81.7** **97.2**	*81.7* 62.0 94.4
Orthogonal comparison				4***	*Mean* Min Max	*7.7* 4.2 10.8	***93.5*** **89.5** **97.2**	***92.1*** **81.7** **97.2**	*86.6* 73.2 94.4

[a] UTC: % infestation in untreated control at assessment date
**In one trial, the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding one trial where the first application was conducted in autumn and the second application was conducted in spring

<u>After one spring application</u>
On the leaves, one application of CA3642 at 1.2 L and 1.0 L/ha achieved similar levels of efficacy (95% and 96% efficacy, respectively) that was numerically higher than the 0.8 L/ha rate (91% efficacy) in 1 trial at 22 DA-A. There were no statistically significant differences between the three applied rates.

<u>After two spring applications</u>
At an early assessment timing (21 DA-B), two applications of CA3642 at 1.2 L and 1.0 L/ha achieved the same level of efficacy on the leaves (95% control) across 2 trials. In one of these trials, two applications of CA3642 at 1.2 L and 1.0 L/ha achieved a higher level of efficacy (97% and 95% efficacy, respectively) than that of the 0.8 L/ha rate (91% efficacy), although there were no significant differences between any of the applied rates.
At later timings (36-50 DA-B), two applications of CA3642 at 1.2 L and 1.0 L/ha achieved a similar level of efficacy on the leaves (84% and 81% efficacy, respectively) across 4 trials. Across 3 of these trials, two applications of CA3642 at 1.2 L and 1.0 L/ha achieved a considerably higher level of efficacy (81% and 79% efficacy, respectively) on the leaves than that of the 0.8 L/ha rate (69% efficacy), with significant differences between the two higher rates and the 0.8 L/ha rate in 1 of the trials.

On the pods, there was a clear dose response where two applications of CA3642 achieved 91% efficacy at 1.2 L/ha, 88% efficacy at 1.0 L/ha and 80% efficacy at 0.8 L/ha across 3 trials at assessment timings of 36-54 DA-B. There were no significant differences between any of the three applied rates in any of the trials.

At 48-56 DA-B, two applications of CA3642 achieved a similar level of efficacy on the stems at the higher dose rates of 1.2 L and 1.0 L/ha (93.5% and 92% efficacy, respectively) that was higher than that of the 0.8 L/ha rate (87% efficacy) across 4 trials. There were no significant differences between any of the three applied rates in any of the trials.

After two applications, autumn and spring

In one trial where the applications were split between autumn and spring, a dose response was apparent on the pods and the stems after two applications of CA3642, with mean levels of efficacy that were slightly lower than the overall average across trials where both applications were conducted in spring. The rates of 1.2 L, 1.0 L and 0.8 L/ha gave efficacy of 88%, 75% and 72%, respectively, on the pods and 88%, 82% and 62%, respectively, on the stems, at 50 DA-B in the one trial.

Comments of zRMS:

10 trials have been submitted to determine minimum effective dose for control of *Alternaria brassicae* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good effectiveness after 1-2 applications. The mean efficacy was 95-96% after 1 application. The lower dose rate of 0,8 l/ha presented comparable effect with result of 91%. Significant dose response was visible after 2 applications. The higher dose rates achieved effectiveness of 79-81% whilst the lower dose rate had 69%. Also slight differences were observed on pods (88-91% vs 80%) and stems (90-92% vs 82%). Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of ALTEBA in winter oilseed rape in the NE zone.

BRSNW – ALTEBA – South-East EPPO zone

A total of 8 trials from the South-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in Hungary (4 trials), Romania (2 trials) or Slovakia (2 trials) between 2019 and 2021.

In trials where both applications were conducted in the spring, the first application took place at crop stage BBCH 35-55 and the second application was done 21-35 days later, at BBCH 65-67.

In 2 trials where the first application was conducted in the autumn and the second application was conducted in the spring, the first application took place at crop stage BBCH 16-17 and the second application was done 185-197 days later, at BBCH 65.

Table 3.2-231: Minimum effective dose of CA3642 against ALTEBA in winter oilseed rape – South-East EPPO zone

Part Rated	**Trial Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
Efficacy after 1 application									
LEAF	ROU	35	35		PESSEV Effica-cy	11.05 a 11.1	**0.22 b** **98.0**	**0.16 b** **98.6**	0.38 b 96.6
LEAF	ROU	21	21		PESSEV Effica-cy	6.03 a 6.0	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
Mean efficacy				2	*Mean* Min Max	*8.5* 6.0 11.1	***99.0*** **98.0** **100.0**	***99.3*** **98.6** **100.0**	*98.3* 96.6 100.0
Efficacy after 2 applications									
LEAF	ROU	56	21		PESSEV Effica-cy	14.81 a 14.8	**0.67 c** **95.5**	**1.40 c** **90.5**	2.32 bc 84.3
LEAF	ROU	56	21	TL[20]		2.5 a 2.5	0.2 efg 93.5	0.3 cd 88.7	0.4 c 85.9
LEAF	SVK	49	28		PESSEV Effica-cy	9.0 a 9.0	**0.8 b** **91.1**	**1.9 b** **78.9**	2.5 b 72.2
LEAF	ROU	35	14		PESSEV Effica-cy	9.5 a 9.5	**1.7 d** **82.1**	**2.3 c** **75.8**	2.8 bc 70.5
Mean efficacy Orthogonal com-parison				3	*Mean* Min Max	*11.1* 9.0 14.8	***89.6*** **82.1** **95.5**	***81.7*** **75.8** **90.5**	*75.7* 70.5 84.3
LEAF	ROU	74	39		PESSEV Effica-cy	10.36 a 10.4	**0.71 bc** **93.1**	**1.15 bc** **88.9**	1.75 bc 83.1
LEAF	SVK	75	54		PESSEV Effica-cy	15.5 a 15.5	**1.9 c** **87.7**	**4.0 bc** **74.2**	5.1 bc 67.1
LEAF	ROU	60	39		PESSEV Effica-cy	21.90 a 21.9	**2.88 d** **86.8**	**2.98 d** **86.4**	3.74 c 82.9
LEAF	SVK	77	56		PESSEV Effica-cy	11.9 a 11.9	**0.4 e** **96.6**	**0.7 e** **94.1**	2.1 cd 82.4
LEAF	SVK	77	56	TL[15]		6.1 a 6.1	0.2 d 97.2	0.3 d 95.2	0.6 c 89.6
Mean efficacy Orthogonal com-parison				4	*Mean* Min Max	*14.9* 10.4 21.9	***91.1*** **86.8** **96.6**	***85.9*** **74.2** **94.1**	*78.9* 67.1 83.1

Part Rated		**Trial Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
						Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
Efficacy after 2 applications										
POD		HUN	62	37	.	PESSEV Efficacy	32.0 a 32.0	**7.6 bc** **76.3**	**9.4 bc** **70.6**	5.5 bc 82.8
POD		ROU	81	46		PESSEV Efficacy	6.28 a 6.3	**0.05 b** **99.2**	**0.06 b** **99.0**	0.10 b 98.4
POD		SVK	75	54		PESSEV Efficacy	6.3 a 6.3	**0.5 c** **92.1**	**1.3 bc** **79.4**	1.8 bc 71.4
POD		HUN	264	79		PESSEV Efficacy	10.4 a 10.4	**4.4 abc** **57.7**	**3.6 abc** **65.4**	3.1 abc 70.2
POD		HUN	264	79	TL[23]		2.6 ab 2.6	1.5 ab 43.0	1.3 ab 51.2	1.2 ab 53.4
POD		HUN	251	54		PESSEV Efficacy	30.0 a 30.0	**3.5 d** **88.3**	**10.0 c** **66.7**	12.5 c 58.3
POD		ROU	60	39		PESSEV Efficacy	5.84 a 5.8	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
POD		SVK	77	56		PESSEV Efficacy	14.7 a 14.7	**0.9 e** **93.9**	**2.2 de** **85.0**	5.6 bc 61.9
POD		SVK	77	56	TL[25]		10.9 a 10.9	0.3 f 97.5	0.6 ef 94.8	1.6 cd 85.7
POD		HUN	79	56	.	PESSEV Efficacy	19.8 a 19.8	**3.5 cd** **82.3**	**1.6 d** **91.9**	
POD		HUN	79	56	TL[30]		17.6 a 17.6	2.1 de 87.9	1.2 fg 93.4	
Mean efficacy					8	*Mean* Min Max	*15.7* 5.8 32.0	***86.2*** **57.7** **100.0**	***82.3*** **65.4** **100.0**	
					6***	*Mean* Min Max	*14.2* 5.8 32.0	***90.6*** **76.3** **100.0**	***87.7*** **70.6** **100.0**	
Orthogonal comparison					7	*Mean* Min Max	*15.1* 5.8 32.0	***86.8*** **57.7** **100.0**	***80.9*** **65.4** **100.0**	*77.6* 58.3 100.0
					5***	*Mean* Min Max	*13.0* 5.8 32.0	***92.3*** **76.3** **100.0**	***86.8*** **70.6** **100.0**	*82.9* 61.9 100.0
					2**	*Mean* Min	*20.2* 10.4	***73.0*** **57.7**	***66.0*** **65.4**	*64.3* 58.3

Part Rated		**Trial Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type** / **Rate**	**UTC[a]**	**CA3642 300 g/L SC** **1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
						Max	30.0	**88.3**	**66.7**	70.2
Efficacy after 2 applications										
STEM		ROU	56	21		PESSEV Effica-cy	7.15 a 7.2	**0.42 bc** **94.1**	**0.66 bc** **90.8**	1.08 b 84.9
STEM		ROU	56	21	TL[24]		1.6 a 1.6	0.1 de 92.5	0.2 cd 88.4	0.2 bc 85.4
Mean efficacy					1	*Mean*	*7.2*	***94.1***	***90.8***	*84.9*
STEM		ROU	60	39		PESSEV Effica-cy	10.73 a 10.7	**1.11 c** **89.7**	**1.80 c** **83.2**	2.67 b 75.1
STEM		SVK	77	56		PESSEV Effica-cy	6.5 a 6.5	**0.2 f** **96.9**	**0.4 f** **93.8**	2.2 cd 66.2
STEM		SVK	77	56	TL[20]		2.0 a 2.0	0.0 e 97.8	0.1 e 94.3	0.6 bc 71.4
Mean efficacy					2	*Mean* Min Max	*8.6* 6.5 10.7	***93.3*** **89.7** **96.9**	***88.5*** **83.2** **93.8**	*70.6* 66.2 75.1

[a] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

**In trials where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy across trials, with 2 applications in spring

After one spring application

On the leaves, one application of CA3642 at 1.2 L and 1.0 L/ha achieved the same level of efficacy (99% efficacy) that was slightly higher than the 0.8 L/ha rate (98% efficacy) across 2 trials at 21-35 DA-A. There were no statistically significant differences between the three applied rates in either of the trials.

After two spring applications

At an early assessment timing (14-28 DA-B), there was a dose response where two applications of CA3642 achieved 90% efficacy at 1.2 L/ha, 82% efficacy at 1.0 L/ha and 76% efficacy at 0.8 L/ha on the leaves across 3 trials. There were no statistically significant differences between any of the three applied rates in 2 of the trials, while the 1.2 L/ha rate gave significantly higher efficacy compared to the 1.0 L and 0.8 L/ha rates in 1 trial.

At later timings (36-56 DA-B) across 4 trials, there was also a dose response on the leaves where two applications of CA3642 achieved 91% efficacy at 1.2 L/ha, 86% efficacy at 1.0 L/ha and 79% efficacy at 0.8 L/ha. There were no statistically significant differences between any of the three applied rates in 2 of the trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate in 2 trials.

On the pods, there was a clear dose response where two applications of CA3642 achieved 92% efficacy at 1.2 L/ha, 87% efficacy at 1.0 L/ha and 83% efficacy at 0.8 L/ha across 5 trials at assessment timings of 37-56 DA-B. There were no significant differences between any of the three applied rates in 4 of the 5 trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the

0.8 L/ha rate in 1 trial.
Across 6 trials, two applications of CA3642 at 1.2 L/ha achieved a slightly higher level of efficacy (91%) compared to the 1.0 L/ha rate (88%) on the pods at 37-56 DA-B, with no statistically significant differences between the two rates in any of the 6 trials.

At an early assessment timing (21 DA-B) in 1 trial, there was a dose response where two applications of CA3642 achieved 94% efficacy at 1.2 L/ha, 91% efficacy at 1.0 L/ha and 85% efficacy at 0.8 L/ha on the stems. There were no statistically significant differences between any of the three applied rates.
At 39-56 DA-B, there was also a dose response where two applications of CA3642 achieved 93% efficacy at 1.2 L/ha, 89% efficacy at 1.0 L/ha and 71% efficacy at 0.8 L/ha on the stems across 2 trials. In both trials, the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate.

<u>After two applications, autumn and spring</u>
In two trials, the applications were split between autumn and spring. The average efficacy across two trials demonstrated a dose response on the pods after two applications of CA3642, with mean levels of efficacy that were lower than the overall average across trials where both applications were conducted in spring. The rates of 1.2 L, 1.0 L and 0.8 L/ha gave efficacy of 73%, 66% and 64%, respectively, on the pods at 54-79 DA-B across the two trials.

Comments of zRMS:

8 trials have been submitted to determine minimum effective dose for control of *Alternaria brassicae* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved high effectiveness after 1-2 applications. The mean efficacy was 99% after 1 spring application. The lower dose rate of 0,8 l/ha had comparable result (98%). Significant dose response was visible on leaves and stems after 2 applications. In case of leaves, the higher dose rates presented results of 82-90% whilst the lower dose had 76%. In case of stems the corelation was 89-93% vs 71%. Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of ALTEBA in winter oilseed rape in the SE zone.

Winter oilseed rape (BRSNW) – Grey mould (BOTRCI – *Botrytis cinerea*)

A total of 9 field trials were established between 2019 and 2021 in order to determine the minimum effective dose for the control of BOTRCI in winter oilseed rape.
Trials from the Maritime EPPO zone were carried out in Germany (1 trial) and Great Britain (2 trials).
Trials from the North-East EPPO zone were carried out in Latvia (4 trials).
Trials from the South-East EPPO zone were carried out in Romania (2 trials).

CA3642 was tested at the intended dose rates, 1.0 L/ha and 1.2 L/ha (150 g or 180 g azoxystrobin and 150 g or 180 g prothioconazole) compared to the reduced dose rate of 0.8 L/ha (120 g azoxystrobin and 120 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-232, Table 3.2-233 and Table 3.2-234.

BRSNW – BOTRCI – Maritime EPPO zone

Three trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against BOTRCI in winter oilseed rape. The trials were carried out in Germany (1 trial) and Great Britain (2 trials) between 2019 and 2021.
In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 25-36 days later, at BBCH 65-69.

Table 3.2-232: Minimum effective dose of CA3642 against BOTRCI in winter oilseed rape – Maritime EPPO zone

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
Efficacy after 2 applications									
LEAF	GBR	80	44		PESSEV Effica-cy	8.88 a 8.9	**5.20 b** **41.4**	**5.34 b** **39.9**	5.64 b 36.5
Mean efficacy				1	*Mean*	*8.9*	***41.4***	***39.9***	*36.5*
POD	GBR	97	72		PESSEV Effica-cy	9.13 a 9.1	**5.93 a** **35.0**	**5.90 a** **35.4**	5.85 a 35.9
Mean efficacy				1	*Mean*	*9.1*	***35.0***	***35.4***	*35.9*
STEM	DEU	93	58		PESSEV Effica-cy	21.74 a 21.7	**8.75 ef** **59.8**	**11.64 de** **46.5**	
STEM	DEU	93	58	TL[43]		21.10 a 21.1	8.37 c 60.3	12.69 b 39.9	
Mean efficacy				1	*Mean*	*21.7*	***59.8***	***46.5***	

[a] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After two spring applications

At an assessment timing 44 DA-B in 1 trial, two applications of CA3642 achieved a similar level of efficacy on the leaves at 1.2 L and 1.0 L/ha (41% and 40% efficacy, respectively) that was higher than that of the 0.8 L/ha rate (37%) with no significant differences between the three dose rates.

On the pods, there was no dose response with two applications of CA3642 giving 35% efficacy at 1.2 L and 1.0 L/ha and 36% at 0.8 L/ha at 72 DA-B in 1 trial.

At 58 DA-B in 1 trial, there was a dose response with two applications of CA3642 achieved 60% efficacy at 1.2 L/ha and 47% efficacy at 1.0 L/ha on the stems, although there was no significant difference between dose rates.

Comments of zRMS:

3 trials have been submitted to determine minimum effective dose for control of *Botrytis cinerea* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved low effectiveness after 2 applications (40-41% on leaves and 35% on pods). The lower dose rate of 0,8 l/ha has not been tested on stems and limited control was observed for the higher dose rates. Moreover no results after 1 application were available. The cMSs are kindly asked to consider this use on national level.

BRSNW – BOTRCI – North-East EPPO zone

Four trials from the North-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0-1.2 L/ha of CA3642 against BOTRCI in winter oilseed rape. All four trials

were carried out in Latvia in 2019 or 2020.
In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 21-30 days later, at BBCH 65-69.

Table 3.2-233: Minimum effective dose of CA3642 against BOTRCI in winter oilseed rape – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha
Efficacy after 2 applications									
PLANT	LVA	55	25		PESSEV	11.1 a	**1.7 b**	**2.2 b**	5.0 b
					Efficacy	11.1	**84.7**	**80.2**	55.0
Mean efficacy				1	*Mean*	*11.1*	***84.7***	***80.2***	*55.0*
Efficacy after 2 applications									
POD	LVA	84	54		PESSEV	13.5 a	**1.6 b**	**1.7 b**	2.1 b
					Efficacy	13.5	**88.1**	**87.4**	84.4
Mean efficacy				1	*Mean*	*13.5*	***88.1***	***87.4***	*84.4*
Efficacy after 1 application									
STEM	LVA	30	-		PESSEV	8.8 a	**0.7 b**	**2.0 b**	2.6 b
					Efficacy	8.8	**92.0**	**77.3**	70.5
Mean efficacy				1	*Mean*	*8.8*	***92.0***	***77.3***	*70.5*
Efficacy after 2 applications									
STEM	LVA	73	52		PESSEV	8.4 a	**0.6 c**	**1.5 bc**	1.3 bc
					Efficacy	8.4	**92.9**	**82.1**	84.5
STEM	LVA	84	54		PESSEV	14.9 a	**2.9 b**	**3.2 b**	3.8 b
					Efficacy	14.9	**80.5**	**78.5**	74.5
STEM	LVA	83	54		PESSEV	29.4 a	**3.5 b**	**4.8 b**	3.2 b
					Efficacy	29.4	**88.1**	**83.7**	89.1
STEM	LVA	82	56		PESSEV	30.4 a	**4.7 b**	**1.4 b**	3.3 b
					Efficacy	30.4	**84.5**	**95.4**	89.1
Mean efficacy				4	*Mean*	*20.8*	***86.5***	***84.9***	*84.3*
					Min	8.4	**80.5**	**78.5**	74.5
					Max	30.4	**92.9**	**95.4**	89.1

[a] UTC: % infestation in untreated control at assessment date
* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

<u>After one spring application</u>
On the stems, there was a dose response after one application of CA3642 where 1.2 L/ha gave 92% efficacy, 1.0 L/ha achieved 77% efficacy and 0.8 L/ha gave 71% efficacy at 30 DA-A in 1 trial, although there were no statistically significant differences between the three applied rates.

<u>After two spring applications</u>
At an early assessment timing (25 DA-B) in 1 trial, two applications of CA3642 at 1.2 L and 1.0 L/ha achieved a similar level of efficacy on the plants (85% and 80%, respectively) that was considerably more effective than that achieved by the lower rate of 0.8 L/ha (55% efficacy), although there were no statistically significant differences between the three applied rates.

At a later timing (54 DA-B) on the pods, two applications of CA3642 at 1.2 L and 1.0 L/ha achieved a similar level of efficacy (88% and 87%, respectively) that was slightly more effective than that achieved by the lower rate of 0.8 L/ha (84% efficacy), in 1 trial. There were no significant differences between any of the three applied rates.

At 52-56 DA-B, two applications of CA3642 achieved a similar level of efficacy on the stems at all applied rates with 87%, 85% and 84% efficacy at 1.2 L, 1.0 L and 0.8 L/ha, respectively, across 4 trials. There were no significant differences between any of the three applied rates in any of the 4 trials.

Comments of zRMS:

4 trials have been submitted to determine minimum effective dose for control of *Botrytis cinerea* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good effectiveness after 1-2 applications. Dose response was visible on stems after 1 application. The claimed dose rates presented results of 77 and 92% whilst the lower dose rate of 0,8 l/ha had 71%. Significant differences were observed also after 2 applications. In case of whole plant, the dose rates of 1-1,2 l/ha achieved 80-85% and the lower dose had result of 55%. Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of BOTRCI in winter oilseed rape in the NE zone.

BRSNW – BOTRCI – South-East EPPO zone

Two trials from the South-East EPPO zone are available to justify the minimum effective dose of one or two applications of 1.0-1.2 L/ha of CA3642 against BOTRCI in winter oilseed rape. Both trials were carried out in Romania in 2021.
In these two trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 50-51 and the second application was done 22 or 29 days later, at BBCH 67.

Table 3.2-234: Minimum effective dose of CA3642 against BOTRCI in winter oilseed rape – South-East EPPO zone

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM *	Name Conc Type	UT-C[a]	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	1 l/ha 150 g AZX/ha+ 150 g PTZ/ha	0.7 l/ha 120 g AZX/ha+ 120 g PTZ/ha
Efficacy after 1 application									
LEAF	ROU	22	-	.	PESSEV Efficacy	7.6 a 7.6	**3.9 cd** **48.7**	**4.3 bcd** **43.4**	4.9 bc 35.5
LEAF	ROU	22	-	.	PESSEV Efficacy	7.1 a 7.1	**3.3 b** **53.5**	**3.4 b** **52.1**	3.3 b 53.5
LEAF	ROU	29	-	.	PESSEV Efficacy	8.0 a 8.0	**4.4 b** **45.0**	**4.3 b** **46.3**	4.5 b 43.8
Mean efficacy				3	*Mean* Min Max	*7.6* 7.1 8.0	***49.1*** **45.0** **53.5**	***47.3*** **43.4** **52.1**	*44.3* 35.5 53.5
Efficacy after 2 applications									
LEAF	ROU	43	21	.	PESSEV Efficacy	8.1 a 8.1	**3.4 de** **58.0**	**3.7 de** **54.3**	4.4 bcd 45.7
LEAF	ROU	50	21	.	PESSEV Efficacy	12.0 a 12.0	**7.3 bc** **39.2**	**7.5 bc** **37.5**	7.5 bc 37.5
Mean efficacy				2	*Mean* Min Max	*10.1* 8.1 12.0	***48.6*** **39.2** **58.0**	***45.9*** **37.5** **54.3**	*41.6* 37.5 45.7
Efficacy after 2 applications									
POD	ROU	66	37	.	PESSEV	8.3 a	**4.9 bc**	**4.9 bc**	5.0 bc

					Efficacy	8.3	**41.0**	**41.0**	39.8
Mean efficacy				1	*Mean*	*8.3*	***41.0***	***41.0***	*39.8*

[a] UTC: % infestation in untreated control at assessment date

* ARM Action codes: TA[n] Arcsine square root % transformation (n=column); TL[n] Log transformation of X+1 (n=column) transformed data are not considered for mean calculation but for description of statistically significant differences

After one spring application

At assessment timings of 22-29 DA-A, there was a shallow dose response on the leaves after one application of CA3642 where 1.2 L/ha gave 49% efficacy, 1.0 L/ha achieved 47% efficacy and 0.8 L/ha gave 44% efficacy across 3 trials. There were no statistically significant differences between the three applied rates in any of the 3 trials.

After two spring applications

At 21 DA-B, there was a shallow dose response on the leaves after one application of CA3642 where 1.2 L/ha gave 49% efficacy, 1.0 L/ha achieved 46% efficacy and 0.8 L/ha gave 42% efficacy across 2 trials. There were no statistically significant differences between the three applied rates in either of the trials.

At 37 DA-B on the pods, two applications of CA3642 at 1.2 L, 1.0 L and 0.8 L/ha all achieved a similar level of efficacy (41%, 41% and 40%%, respectively) in 1 trial. There were no significant differences between any of the three applied rates.

Comments of zRMS:

Only 2 trials have been submitted to determine minimum effective dose for control of *Botrytis cinerea* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved low effectiveness after 1-2 applications. The mean efficacy was 47-49% after 1 spring applications. The comparable result was observed at 0,8 l/ha. No significant differences between dose rates were visible also after 2 applications. Due to limited number of trials, cMss are kindly asked to consider this use on national level.

Winter oilseed rape (BRSNW) – Powdery mildew (ERYSCR – *Erysiphe cruciferarum*)

A total of 17 field trials were established 2019 or 2020 in order to determine the minimum effective dose for the control of ERYSCR in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in France (1 trial) and Great Britain (1 trial).
No data are available from the North-East EPPO zone. However, for this pathogen the Maritime climatic conditions are more conducive to disease development therefore provide more challenging conditions.
Trials from the South-East EPPO zone were carried out in Hungary (6 trials), Romania (6 trials) and Slovakia (3 trials).

CA3642 was tested at the intended dose rates, 1.0 L/ha and 1.2 L/ha (150 g or 180 g azoxystrobin and 150 g or 180 g prothioconazole) compared to the reduced dose rate of 0.8 L/ha (120 g azoxystrobin and 120 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-235 and Table 3.2-236.

BRSNW – ERYSCR – Maritime EPPO zone

Two trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against ERYSCR in winter oilseed rape. The trials were car-

ried out in France (1 trial) and Great Britain (1 trial) in 2019 or 2020.
In one trial, both applications were conducted in the spring. The first application took place at crop stage BBCH 50 and the second application was done 21 days later, at BBCH 65.
In the other trial, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 19 and the second application was done 135 days later, at BBCH 67.

Table 3.2-235: Minimum effective dose of CA3642 against ERYSCR in winter oilseed rape – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
Efficacy after 2 applications									
LEAF	CZE	80	59			30.13 a 30.1	**10.13 c** **66.4**	**10.38 c** **65.5**	20.08 b 33.4
LEAF	FRA	177	42			26.70 a 26.7	**17.28 cd** **35.3**	**17.37 cd** **34.9**	18.83 bcd 29.5
Mean efficacy				2	*Mean* Min Max	*28.4* 26.7 30.1	***50.8*** **35.3** **66.4**	***50.2*** **34.9** **65.5**	*31.4* 29.5 33.4
POD	FRA	195	60			17.01 a 17.0	**17.64 a** **0.0**	**16.17 a** **4.9**	18.53 a 0.0
Mean efficacy				1	*Mean*	*17.0*	***0.0***	***4.9***	*0.0*
STEM	FRA	195	60			14.00 a 14.0	**11.82 a** **15.6**	**12.45 a** **11.1**	12.67 a 9.5
Mean efficacy				1	*Mean*	*14.0*	***15.6***	***11.1***	*9.5*

[a] UTC: % infestation in untreated control at assessment date
**In Trial EU20-014-19, the first application was conducted in autumn and the second application was conducted in spring.

<u>After two spring applications</u>
At an assessment timing 59 DA-B in 1 trial, two applications of CA3642 gave 66% efficacy on the leaves at both 1.2 L and 1.0 L/ha, which was significantly higher than that of the 0.8 L/ha rate (33% efficacy).

<u>After two applications, autumn and spring</u>
Levels of control were relatively low on the leaves, pods and stems in one trial; however, there was a dose response on the leaves and stems. Two applications of CA3642 gave 35% efficacy on the leaves at both 1.2 L and 1.0 L/ha, which was slightly, but not significantly higher than that of the 0.8 L/ha rate (30% efficacy). On the stems, two applications of CA3642 gave 16% efficacy at 1.2 L/ha, 11% efficacy at 1.0 L/ha and 9.5% efficacy at 0.8 L/ha. There was no dose response on the pods where there was only 0-5% control of pest severity in this trial.

Comments of zRMS:

Only 2 trials have been submitted to determine minimum effective dose for control of *Erysiphe cruciferarum* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved low effectiveness after 2 applications. Furthermore, no results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

BRSNW – ERYSCR – North-East EPPO zone

No data are presented - ERYSCR disease did not develop in any of the trials carried out in the North-East EPPO zone.

Comments of zRMS:

No trials have been submitted to determine minimum effective dose for control of *Erysiphe cruciferarum* in winter oilseed rape in the North-East EPPO climatic zone. An extrapolation is not possible. This use cannot be accepted in Poland.

BRSNW – ERYSCR – South-East EPPO zone

A total of 15 trials from the South-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against ERYSCR in winter oilseed rape. The trials were carried out in Hungary (6 trials), Romania (6 trials) and Slovakia (3 trials) in 2019 or 2020.
In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 37-55 and the second application was done 20-38 days later, at BBCH 65-69.
In the other 4 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-16 and the second application was done 155-197 days later, at BBCH 65-66.

Table 3.2-236: Minimum effective dose of CA3642 against ERYSCR in winter oilseed rape – South-East EPPO zone

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type Rate	UTC[a]	CA3642 300 g/L SC 1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	 1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha	 0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha
Efficacy after 1 application									
LEAF	ROU	38	38			19.38 a 19.4	**2.03 cde** **89.5**	**2.85 cd** **85.3**	5.35 b 72.4
LEAF	ROU	38	38	TL[11]		2.5 a 2.5	0.3cd 88.0	0.4 cd 85.5	0.6 b 75.0
LEAF	ROU	21	21			5.68 a 5.7	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
LEAF	ROU	21	21			5.17 a 5.2	**0.00 b** **100.0**	**0.00 b** **100.0**	0.00 b 100.0
Mean efficacy				3	*Mean* Min Max	*10.1* 5.2 19.4	***96.5*** **89.5** **100.0**	***95.1*** **85.3** **100.0**	*90.8* 72.4 100.0
Efficacy after 2 applications									
LEAF	ROU	35	14			10.9 a 10.9	**1.4 cd** **87.2**	**1.9 bc** **82.6**	2.0 bc 81.7
LEAF	ROU	40	19			9.8 a 9.8	**1.4 b** **85.7**	**1.9 b** **80.6**	2.0 b 79.6
LEAF	ROU	56	21			12.39 a 12.4	**0.00 b** **100.0**	**0.01 b** **99.9**	0.05 b 99.6
LEAF	ROU	59	21			28.88 a 28.9	**3.00 c** **89.6**	**3.58 bc** **87.6**	5.98 b 79.3
LEAF	HUN	48	21			50.00 a 50.0	**0.00 c** **100.0**	**0.00 c** **100.0**	0.00 c 100.0
LEAF	SVK	49	28			5.1 a 5.1	**0.1 d** **98.0**	**0.4 bcd** **92.2**	1.0 bc 80.4
Mean efficacy				6	*Mean* Min Max	*19.5* 5.1 50.0	***93.4*** **85.7** **100.0**	***90.5*** **80.6** **100.0**	*86.8* 79.3 100.0
LEAF	HUN	51	30			37.5 a 37.5	**0.0 c** **100.0**	**0.0 c** **100.0**	0.0 c 100.0
LEAF	HUN	228	31			55.0 a 55.0	**28.8 c** **47.6**	**26.3 c** **52.2**	27.5 c 50.0
LEAF	ROU	71	36			95.5 a 95.5	**1.6 b** **98.3**	**1.7 b** **98.2**	2.2 b 97.7
LEAF	HUN	191	36			30.0 a 30.0	**1.9 e** **93.7**	**4.0 d** **86.7**	15.0 c 50.0
LEAF	HUN	231	36			30.0 a 30.0	**4.3 cd** **85.7**	**4.6 c** **84.7**	20.0 b 33.3
LEAF	ROU	64	38			25.04 a 25.0	**1.92 c** **92.3**	**2.34 c** **90.7**	6.57 b 73.8
LEAF	ROU	59	38			21.37 a 21.4	**2.87 d** **86.6**	**3.01 d** **85.9**	3.92 c 81.7
LEAF	ROU	77	39			23.93 a 23.9	**1.76 cd** **92.6**	**3.26 bcd** **86.4**	5.55 b 76.8
LEAF	ROU	60	39			19.80 a 19.8	**1.85 e** **90.7**	**2.84 d** **85.7**	3.84 c 80.6
Mean efficacy				9	*Mean* Min Max	*37.6* 19.8 95.5	***87.5*** **47.6** **100.0**	***85.6*** **52.2** **100.0**	*71.5* 33.3 100.0
Orthogonal comparison				6***	*Mean* Min Max	*37.2* 19.8 95.5	***93.4*** **86.6** **100.0**	***91.1*** **85.7** **100.0**	*85.1* 73.8 100.0
				3**	*Mean* Min Max	*38.3* 30.0 55.0	***75.7*** **47.6** **93.7**	***74.5*** **52.2** **86.7**	*44.4* 33.3 50.0
LEAF	HUN	67	46			38.75 a 38.8	**5.00 c** **87.1**	**5.00 c** **87.1**	5.00 c 87.1

Part Rated	**Trial Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
LEAF	HUN	202	47			50.0 a 50.0	**23.8 d 52.4**	**40.0 c 20.0**	40.0 c 20.0
LEAF	ROU	231	48			11.8 a 11.8	**5.8 b 50.8**	**4.7 b 60.2**	7.0 b 40.7
LEAF	SVK	71	50			24.5 a 24.5	**1.4 e 94.3**	**3.3 de 86.5**	7.1 bc 71.0
LEAF	SVK	70	50			45.0 a 45.0	**2.0 d 95.6**	**4.4 cd 90.2**	7.6 c 83.1
LEAF	SVK	70	50	TL[13]		35.0 a 35.0	0.4 f 98.8	0.7 def 97.9	1.43 c 95.9
LEAF	HUN	77	50			70.0 a 70.0	**10.0 a 85.7**	**10.0 a 85.7**	40.0 a 42.9
LEAF	SVK	74	53			47.5 a 47.5	**3.3 e 93.1**	**5.6 de 88.2**	13.3 c 72.0
LEAF	SVK	74	53	TL[13]		39.9 a 39.9	0.7 e 98.3	1.0 e 97.4	2.8 c 92.9
LEAF	HUN	77	54			60.0 a 60.0	**5.0 a 91.7**	**5.0 a 91.7**	5.0 a 91.7
LEAF	HUN	257	62			50.0 a 50.0	**40.0 a 20.0**	**40.0 a 20.0**	50.0 a 0.0
Mean efficacy				9	*Mean* Min Max	*44.2* 11.8 70.0	***74.5*** **20.0** **95.6**	***70.0*** **20.0** **91.7**	*56.5* 0.0 91.7
Orthogonal comparisons				6***	*Mean* Min Max	*47.6* 24.5 70.0	***91.2*** **85.7** **95.6**	***88.2*** **85.7** **91.7**	*74.6* 42.9 91.7
				3**	*Mean* Min Max	*37.3* 11.8 50.0	***41.1*** **20.0** **52.4**	***33.4*** **20.0** **60.2**	*20.2* 0.0 40.7
Efficacy after 2 applications									
POD	ROU	75	40			1.73 a 1.7	**0.06 d 96.5**	**0.09 cd 94.8**	0.18 b 89.6
POD	ROU	75	40	TA[36]		1.7 a 1.7	0.0 d 99.6	0.0 cd 99.1	0.0 b 97.7
POD	ROU	84	46			3.08 a 3.1	**0.13 b 95.8**	**0.14 b 95.5**	0.43 b 86.0
POD	SVK	71	50			9.9 a 9.9	**1.3 c 86.9**	**2.4 bc 75.8**	3.4 b 65.7
POD	HUN	217	62			50.0 a 50.0	**25.0 b 50.0**	**50.0 a 0.0**	50.0 a 0.0
POD	HUN	257	62			50.0 a 50.0	**40.0 a 20.0**	**40.0 a 20.0**	50.0 a 0.0
POD	ROU	231	48			9.7 a 9.7	**2.7 d 72.2**	**4.8 bc 50.5**	6.3 b 35.1
POD	HUN	77	54			60.0 a 60.0	**50.0 a 16.7**	**50.0 a 16.7**	50.0 a 16.7
POD	HUN	78	57			30.0 a 30.0	**20.0 a 33.3**	**20.0 a 33.3**	20.0 a 33.3
POD	ROU	64	38			1.75 a 1.8	**0.06 c 96.6**	**0.07 c 96.0**	0.18 bc 89.7
POD	ROU	59	38			7.24 a 7.2	**0.24 d 96.7**	**0.75 c 89.6**	1.20 b 83.4
POD	ROU	60	39			5.60 a 5.6	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
POD	SVK	74	53			12.6 a 12.6	**0.7 d 94.4**	**1.3 d 89.7**	2.8 c 77.8
POD	SVK	74	53	TL[22]		6.7 a 6.7	0.2 d 96.8	0.4 d 94.2	0.8 c 88.2
POD	SVK	70	50			11.0 a	**0.7 e**	**1.4 cde**	3.0 c

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type / Rate	UTC[a]	CA3642 300 g/L SC 1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha
						11.0	**93.6**	**87.3**	72.7
POD	SVK	70	50	TL[23]		5.2 a 5.2	0.2 d 95.6	0.4 d 92.0	0.9 c 83.2
POD	HUN	77	50			50.0 a 50.0	**10.0 a** **80.0**	**10.0 a** **80.0**	30.0 a 40.0
Mean efficacy				14	*Mean* Min Max	*21.6* 1.7 60.0	***73.8*** **16.7** **100.0**	***66.4*** **0.0** **100.0**	*56.4* 0.0 100.0
Orthogonal comparisons				11***	*Mean* Min Max	*17.5* 1.7 60.0	***81.0*** **16.7** **100.0**	***78.1*** **16.7** **100.0**	*68.6* 16.7 100.0
				3**	*Mean* Min Max	*36.6* 9.7 50.0	***47.4*** **20.0** **72.2**	***23.5*** **0.0** **50.5**	*11.7* 0.0 35.1
Efficacy after 1 application									
STEM	ROU	38	38			12.19 a 12.2	**1.14 bc** **90.6**	**1.91 bc** **84.3**	0.45 bc 96.3
Mean efficacy				1	*Mean*	*12.2*	***90.6***	***84.3***	*96.3*
Efficacy after 2 applications									
STEM	ROU	59	21			11.16 a 11.2	**0.80 b** **92.8**	**1.42 b** **87.3**	2.06 b 81.5
STEM	ROU	59	21	TS[24]		5.2 a 5.2	0.3 c 93.7	0.5 bc 90.6	0.7 b 87.2
Mean efficacy				1	*Mean*	*11.2*	***92.8***	***87.3***	*81.5*
STEM	ROU	71	36			88.8 a 88.8	**0.8 c** **99.1**	**1.2 c** **98.6**	1.6 c 98.2
STEM	ROU	71	36	TL[30]		88.4 a 88.4	0.7 f 99.2	1.2 d 98.7	1.5 c 98.3
STEM	ROU	77	39			12.28 a 12.3	**0.50 d** **95.9**	**1.44 cd** **88.3**	2.61 b 78.7
STEM	SVK	71	50			26.0 a 26.0	**4.0 d** **84.6**	**7.0 c** **73.1**	10.8 b 58.5
STEM	HUN	217	62			50.0 a 50.0	**40.0 a** **20.0**	**50.0 a** **0.0**	50.0 a 0.0
STEM	HUN	257	62			50.0 a 50.0	**40.0 a** **20.0**	**40.0 a** **20.0**	50.0 a 0.0
STEM	ROU	231	48			10.3 a 10.3	**1.8 e** **82.5**	**3.3 cde** **68.0**	4.3 bcd 58.3
STEM	HUN	77	54			30.0 a 30.0	**5.0 a** **83.3**	**5.0 a** **83.3**	5.0 a 83.3
STEM	HUN	78	57			50.0 a 50.0	**30.0 a** **40.0**	**30.0 a** **40.0**	30.0 a 40.0
STEM	ROU	64	38			21.35 a 21.4	**1.14 d** **94.7**	**1.45 d** **93.2**	2.86 c 86.6
STEM	ROU	59	38			10.18 a 10.2	**1.19 c** **88.3**	**1.39 c** **86.3**	1.74 bc 82.9
STEM	ROU	60	39			8.43 a 8.4	**0.97 e** **88.5**	**1.71 d** **79.7**	2.64 c 68.7
STEM	SVK	74	53			16.0 a 16.0	**1.4 de** **91.3**	**2.2 cde** **86.3**	4.8 c 70.0
STEM	SVK	70	50			13.4 a 13.4	**0.6 d** **95.5**	**1.2 d** **91.0**	3.1 c 76.9
STEM	SVK	70	50	TL[18]		5.1 a 5.1	0.2 d 96.3	0.3 d 93.6	0.7 c 85.7
STEM	HUN	77	50			50.0 a 50.0	**10.0 a** **80.0**	**10.0 a** **80.0**	30.0 a 40.0
Mean efficacy				14	*Mean* Min Max	*31.2* 8.4 88.8	***76.0*** **20.0** **99.1**	***70.6*** **0.0** **98.6**	*60.1* 0.0 98.2

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
Orthogonal comparisons				11***	*Mean* Min Max	*29.7* 8.4 88.8	***85.6*** **40.0** **99.1**	***81.8*** **40.0** **98.6**	*71.3* 40.0 98.2
				3**	*Mean* Min Max	*36.8* 10.3 50.0	***40.8*** **20.0** **82.5**	***29.3*** **0.0** **68.0**	*19.4* 0.0 58.3

[a] UTC: % infestation in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***In trials with 2 applications in spring

<u>After one application in the spring</u>
On the leaves, one application of CA3642 at 1.2 L and 1.0 L/ha achieved a similar level of efficacy (96.5% and 95% efficacy, respectively) that was slightly higher than the 0.8 L/ha rate (91% efficacy) across 3 trials at 21-38 DA-A. There were no statistically significant differences between the three applied rates in 2 of the trials, while the two higher rates were significantly more effective compared to the 0.8 L/ha rate.

On the stems, there was no clear dose response in one trial with 91%, 84% and 96% efficacy following one application of CA3642 at 1.2 L, 1.0 L and 0.8 L/ha, respectively.

<u>After two applications in the spring</u>
At early assessment timings (14-28 DA-B), there was a dose response where two applications of CA3642 achieved 93% efficacy at 1.2 L/ha, 91% efficacy at 1.0 L/ha and 87% efficacy at 0.8 L/ha on the leaves across 6 trials. There were no statistically significant differences between any of the three applied rates in 5 of the 6 of the trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate in 1 trial.
At later timings (30-39 DA-B) across 6 trials, there was also a dose response on the leaves where two applications of CA3642 achieved 93% efficacy at 1.2 L/ha, 91% efficacy at 1.0 L/ha and 85% efficacy at 0.8 L/ha. There were no statistically significant differences between any of the three applied rates in 2 of the trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate in 2 trials, the 1.2 L/ha rate gave significantly higher efficacy compared to the 0.8 L/ha rate in 1 trial and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 1 trial.
At even later timings (46-53 DA-B) across 6 trials, there was still a dose response on the leaves where two applications of CA3642 achieved 91% efficacy at 1.2 L/ha, 88% efficacy at 1.0 L/ha and 75% efficacy at 0.8 L/ha. There were no statistically significant differences between any of the three applied rates in 3 of the trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate in 2 trials and the 1.2 L/ha rate gave significantly higher efficacy compared to the 0.8 L/ha rate in 1 trial.

On the pods, there was a dose response where two applications of CA3642 achieved 81% efficacy at 1.2 L/ha, 78% efficacy at 1.0 L/ha and 69% efficacy at 0.8 L/ha across 11 trials at assessment timings of 40-57 DA-B. There were no significant differences between any of the three applied rates in 6 of the 11 trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate in 2 trials, the 1.2 L/ha rate gave significantly higher efficacy compared to the 0.8 L/ha rate in 2 trials and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 1 trial.

At an early assessment timing (21 DA-B) in 1 trial, there was a dose response where two applications of CA3642 achieved 93% efficacy at 1.2 L/ha, 87% efficacy at 1.0 L/ha and 82% efficacy at 0.8 L/ha on the stems. There were no statistically significant differences between any of the three applied rates.
At 39-57 DA-B, there was also a dose response where two applications of CA3642 achieved 86% efficacy at 1.2 L/ha, 82% efficacy at 1.0 L/ha and 71% efficacy at 0.8 L/ha on the stems across 11

trials. There were no significant differences between any of the three applied rates in 5 of the 11 trials, while the 1.2 L and 1.0 L/ha rates gave significantly higher efficacy compared to the 0.8 L/ha rate in 3 trials, the 1.2 L/ha rate gave significantly higher efficacy compared to the 0.8 L/ha rate in 1 trial and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 2 trials.

After two applications, autumn and spring

In four trials, the applications were split between autumn and spring. The average efficacy across two trials demonstrated a dose response on the leaves, pods and stems after two applications of CA3642, with mean levels of efficacy that were lower than the overall average across trials where both applications were conducted in spring.

The rates of 1.2 L, 1.0 L and 0.8 L/ha gave efficacy of 76%, 75% and 44%, respectively, on the leaves at 31-36 DA-B across 3 trials, and 41%, 33% and 20%, respectively, at later timings of 47-62 DA-B on the leaves.

Across 3 trials, the rates of 1.2 L, 1.0 L and 0.8 L/ha gave efficacy of 41%, 29% and 19%, respectively, on the stems at 48-62 DA-B and in 1 of these trials the dose response was significant between 1.2 and 0.8 L/ha dose rates.

Across 3 trials, the rates of 1.2 L, 1.0 L and 0.8 L/ha gave efficacy of 47%, 24% and 12%, respectively, on the pods, and 1.2 L/ha gave significantly higher efficacy compared to 0.8 L/ha in 2 of these trials and was significantly higher compared to 1.0 L/ha in 1 trial.

Comments of zRMS:

15 trials have been submitted to determine minimum effective dose for control of *Erysiphe cruciferarum* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved high effectiveness after 1-2 applications. The mean efficacy was 95-97% on leaves and 84-91% on stems after 1 spring application. The comparable results were observed at lower dose rate of 0,8 l/ha. Significant differences between dose rates were visible after 2 applications. Dose response has been noted on leaves in autumn and spring applications (75-76% vs 44%) and spring applications (88-91% vs 75%). Also the correlation was observed on pods (78-81% vs 69%) and stems (82-86% vs 71%) after spring applications. Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of ERYSCR in winter oilseed rape in the SE zone.

Winter oilseed rape (BRSNW) – Phoma leaf spot / stem canker (LEPTMA – *Leptosphaeria maculans*)

A total of 22 field trials were established 2019 or 2020 in order to determine the minimum effective dose for the control of LEPTMA in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in France (1 trial), the Czech Republic (2 trials), Germany (3 trials) and Great Britain (2 trials).

Trials from the North-East EPPO zone were carried out in Latvia (1 trial), Lithuania (1 trial) and Poland (3 trials).

Trials from the South-East EPPO zone were carried out in Hungary (6 trials) and Romania (3 trials).

CA3642 was tested at the intended dose rates, 1.0 L/ha and 1.2 L/ha (150 g or 180 g azoxystrobin and 150 g or 180 g prothioconazole) compared to the reduced dose rate of 0.8 L/ha (120 g azoxystrobin and 120 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-237, Table 3.2-238 and Table 3.2-239.

BRSNW – LEPTMA – Maritime EPPO zone

A total of 8 trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against LEPTMA in winter oilseed rape. The trials were carried out in France (1 trial), the Czech Republic (2 trials), Germany (3 trials) and Great Britain (2 trials) between

2019 and 2021.
In 3 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 39-55 and the second application was done 27-35 days later, at BBCH 65-69.
In the other 5 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-19 and the second application was done 91-191 days later, at BBCH 65

Table 3.2-237: Minimum effective dose of CA3642 against LEPTMA in winter oilseed rape – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[a]	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
Efficacy after 1 application									
LEAF	GBR	16	-		PESSEV Efficacy	4.47 a 4.5	**2.70 b 39.6**	**2.85 b 36.2**	2.94 b 34.2
LEAF	GBR	15	-		PESSEV Efficacy	4.19 a 4.2	**1.38 b 67.1**	**1.17 b 72.1**	1.22 b 70.9
LEAF	DEU	15	-		PESSEV Efficacy	13.13 a 13.1	**1.76 h 86.6**	**2.33 g 82.3**	4.16 f 68.3
LEAF	DEU	15	-		PESSEV Efficacy	20.57 a 20.6	**3.89 i 81.1**	**5.20 g 74.7**	8.49 f 58.7
LEAF	GBR	149	-		PESSEV Efficacy	5.70 a 5.7	**1.42 b 75.1**	**2.32 b 59.3**	2.39 b 58.1
Mean efficacy rthogonal comparison				5**	*Mean* Min Max	*9.6* 4.2 20.6	***69.9*** **39.6 86.6**	***64.9*** **36.2 82.3**	*58.0* 34.2 70.9
Efficacy after 2 applications									
LEAF	DEU	49	21		PESSEV Efficacy	4.50 a 4.5	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
LEAF	GBR	167	18		PESSEV Efficacy	5.00 a 5.0	**0.61 d 87.8**	**1.25 bcd 75.0**	1.33 bcd 73.4
LEAF	GBR	167	18	TA[14]		2.94 a 2.9	**0.10 d 96.6**	**0.48 bc 83.7**	0.47 bc 84.0
Mean efficacy				2	*Mean* Min Max	*4.8* 4.5 5.0	***93.9*** **87.8 100.0**	***87.5*** **75.0 100.0**	*86.7* 73.4 100.0
LEAF	DEU	67	39		PESSEV Efficacy	5.83 a 5.8	**0.00 c 100.0**	**0.00 c 100.0**	0.00 c 100.0
Mean efficacy				1	*Mean*	*5.8*	***100.0***	***100.0***	*100.0*
Efficacy after 2 applications									
STEM	GBR	167	18		PESSEV Efficacy	4.22 a 4.2	**1.10 cd 73.9**	**1.23 cd 70.9**	1.48 cd 64.9
STEM	CZE	52	21		PESSEV Efficacy	4.54 a 4.5	**1.77 b 61.0**	**1.63 b 64.1**	1.62 b 64.3
Mean efficacy				2	*Mean* Min Max	*4.4* 4.2 4.5	***67.5*** **61.0 73.9**	***67.5*** **64.1 70.9**	*64.6* 64.3 64.9
STEM	CZE	69	42		PESSEV Efficacy	5.71 a 5.7	**2.36 a 58.7**	**2.55 a 55.3**	4.44 a 22.2
STEM	FRA	209	71		PESSEV Efficacy	17.52 a 17.5	**6.45 d 63.2**	**5.34 d 69.5**	7.19 cd 59.0
STEM	CZE	82	51		PESSEV Efficacy	24.70 a 24.7	**7.73 b 68.7**	**7.10 b 71.3**	8.88 b 64.0
Mean efficacy all trials				3	*Mean* Min Max	*16.0* 5.7 24.7	***63.5*** **58.7 68.7**	***65.4*** **55.3 71.3**	*48.4* 22.2 64.0
Mean efficacy 2 x spring				2***	*Mean* Min Max	*15.2* 5.7 24.7	***63.7*** **58.7 68.7**	***63.3*** **55.3 71.3**	*43.1* 22.2 64.0
Mean efficacy -autumn/spring				1	Mean	17.5	**63.2**	**69.5**	59.0

[a] UTC: % infestation in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, with 2 applications in spring

<u>After two applications in the spring</u>
At two assessment timings (21 and 39 DA-B) in 1 trial, there was total (100%) disease control on the leaves by all three applied dose rates of CA3642.

At an early assessment (21 DA-B) on the stems, there was no dose response following two spring applications of CA3642, with 61%, 64% and 64% efficacy for the 1.2 L, 1.0 L and 0.8 L/ha rates, respectively.
At later timings (42-58 DA-B) on the stems across 2 trials, two spring applications of CA3642 at 1.2 L and 1.0 L/ha achieved a similar level of efficacy (64% and 63%, respectively) that was considerably higher than that of the 0.8 L/ha rate (48% efficacy) although there were no significant differences between any of the rates in either trial.

<u>After one application in the autumn</u>
At assessments of 15-16 DA-A across 4 trials or 149 DA-A in 1 trial, there was a dose response on the leaves where one application of CA3642 in the autumn achieved 70% efficacy at 1.2 L/ha, 65% efficacy at 1.0 L/ha and 58% efficacy at 0.8 L/ha. A statistically significant difference was observed between all 3 rates in 2 trials.

<u>After two applications, autumn and spring</u>
At an early assessment 18 DA-B in 1 trial, there was a dose response on the leaves and the stems following two applications of CA3642 with 88% efficacy at 1.2 L/ha, 75% efficacy at 1.0 L/ha and 73% efficacy at 0.8 L/ha on the leaves and 74% efficacy at 1.2 L/ha, 71% efficacy at 1.0 L/ha and 65% efficacy at 0.8 L/ha on the stems. There were no statistically significant differences between the rates on leaves or stems in this trial.

At a later timing 71 DA-B in 1 trial, there was no clear dose response on the stems with 63%, 69.5% and 59% efficacy following two applications of CA3642 at 1.2 L, 1.0 L and 0.8 L/ha.

Comments of zRMS:

8 trials have been submitted to determine minimum effective dose for control of *Leptosphaeria maculans* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 65-70% after 1 autumn application. Dose response was visible because the lower dose rate of 0,8 l/ha presented result of 58%. Also significant differences between dose rates were observed on stems after 2 applications. The claimed dose rates achieved moderate control (>63%) whilst the dose rate of 0,8 l/ha presented insufficient result (43% after spring applications and 59% after autumn and spring applications). Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of LEPTMA in winter oilseed rape in the MAR zone.

BRSNW – LEPTMA – North-East EPPO zone

Five trials from the North-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against LEPTMA in winter oilseed rape. The trials were carried out in Latvia (1 trial), Lithuania (1 trial) and Poland (3 trials) between 2019 and 2021.
In 3 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 36-55 and the second application was done 22-44 days later, at BBCH 65-69.
In the other 2 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-15 and the second application was done 206 days later, at BBCH 65-69.

Table 3.2-238: Minimum effective dose of CA3642 against LEPTMA in winter oilseed rape – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials & ARM *	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
Efficacy after 1 application									
LEAF	LTU	14	-		PESSEV Efficacy	5.0 a 5.0	**2.0 a** **60.0**	**1.0 a** **80.0**	1.0 a 80.0
Mean efficacy				1	*Mean*	*5.0*	***60.0***	***80.0***	*80.0*
Efficacy after 1 application									
LEAF	LTU	206	-		PESSEV Efficacy	5.950 a 6.0	**3.580 b** **39.8**	**3.300 b** **44.5**	3.400 b 42.9
Mean efficacy				1	*Mean*	*6.0*	***39.8***	***44.5***	*42.9*
Efficacy after 2 applications									
LEAF	POL	43	21		PESSEV Efficacy	8.40 a 8.4	**0.13 b** **98.5**	**0.15 b** **98.2**	0.48 b 94.3
Mean efficacy				1	*Mean*	*8.4*	***98.5***	***98.2***	*94.3*
Efficacy after 2 applications									
LEAF	POL	58	36		PESSEV Efficacy	8.0 a 8.0	**0.1 b** **98.8**	**0.3 b** **96.3**	0.8 b 90.0
Mean efficacy				1	*Mean*	*8.0*	***98.8***	***96.3***	*90.0*
Efficacy after 2 applications									
POD	POL	58	36		PESSEV Efficacy	10.7 a 10.7	**0.3 b** **97.2**	**0.5 b** **95.3**	1.2 b 88.8
POD	POL	256	50		PESSEV Efficacy	9.4 a 9.4	**0.8 b** **91.5**	**1.0 b** **89.4**	1.6 b 83.0
Mean efficacy Orthogonal comparison				2	*Mean* Min Max	*10.1* 9.4 10.7	***94.3*** **91.5** **97.2**	***92.3*** **89.4** **95.3**	*85.9* 83.0 88.8
Efficacy after 2 applications									
STEM	POL	68	24		PESSEV Efficacy	8.9 a 8.9	**0.3 c** **96.6**	**1.4 bc** **84.3**	1.3 bc 85.4
STEM	POL	256	50		PESSEV Efficacy	6.8 a 6.8	**0.6 b** **91.2**	**1.9 b** **72.1**	2.2 b 67.6
STEM	LVA	84	54		PESSEV Efficacy	9.4 a 9.4	**1.3 b** **86.2**	**1.6 b** **83.0**	1.9 b 79.8
Mean efficacy				3	*Mean* Min Max	*8.4* 6.8 9.4	***91.3*** **86.2** **96.6**	***79.8*** **72.1** **84.3**	*77.6* 67.6 85.4
Orthogonal comparison				2***	*Mean* Min Max	*9.2* 8.9 9.4	***91.4*** **86.2** **96.6**	***83.6*** **83.0** **84.3**	*82.6* 79.8 85.4

[a] UTC: % infestation in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials with 2 applications in spring

<u>After one autumn application</u>
At an early assessment 14 DA-A and also at a later assessment 206 DA-A on the leaves in 1 trial, there

was no dose response following an application of CA3642 at different dose rates, with 60%, 80% and 80% at 1.2 L, 1.0 L and 0.8 L/ha, respectively, at the first assessment and 40%, 44.5% and 43% at the later assessment.

After two spring applications
At an early assessment (21 DA-B) on the leaves, two spring applications of CA3642 at 1.2 L and 1.0 L/ha achieved similar efficacy (98.5% and 98%, respectively) that was slightly higher than that of the 0.8 L/ha rate (94% efficacy) across 1 trial. There were no significant differences between any of the rates in this trial.
Similarly, at later timings 36-42 DA-B, two spring applications of CA3642 at 1.2 L and 1.0 L/ha achieved similar efficacy (99% and 96%, respectively) that was higher than that of the 0.8 L/ha rate (90% efficacy) across 1 trial. There were no significant differences between any of the rates in this trial.

On the pods at 36 DA-B in 1 trial, two spring applications of CA3642 at 1.2 L and 1.0 L/ha achieved a similar level of efficacy (97% and 95%, respectively) that was higher than that of the 0.8 L/ha rate (89% efficacy). There were no significant differences between any of the rates in either trial.

On the stems at 24-54 DA-B, the highest rate of 1.2 L/ha was more effective compared to the other lower rates of 1.0 L and 0.8 L/ha with efficacy of 91%, 84% and 83%, respectively, across 2 trials.

After two applications, autumn and spring
At 50 DA-B in 1 trial, there was a dose response on the pods and the stems following two applications of CA3642 with 91.5% efficacy at 1.2 L/ha, 89% efficacy at 1.0 L/ha and 83% efficacy at 0.8 L/ha on the pods and 91% efficacy at 1.2 L/ha, 72% efficacy at 1.0 L/ha and 68% efficacy at 0.8 L/ha on the stems. There were no statistically significant differences between the rates on pods or stems in this trial.

Comments of zRMS:

5 trials have been submitted to determine minimum effective dose for control of *Leptosphaeria maculans* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 60-80% after 1 autumn application in early assessment. Similar effect was visible at lower dose rate of 0,8 l/ha. Slight dose response was observed after 2 applications. The claimed dose rates presented results of 92-94% on pods whilst the lower dose rate of 0,8 l/ha had 86%. Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of LEPTMA in winter oilseed rape in the NE zone.

BRSNW – LEPTMA – South-East EPPO zone

A total of 9 trials from the South-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against LEPTMA in winter oilseed rape. The trials were carried out in Hungary (6 trials) and Romania (3 trials) between 2019 and 2021.
In 3 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 55-59 and the second application was done 21-25 days later, at BBCH 65-67.
In the other 6 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-18 and the second application was done 185-197 days later, at BBCH 65-66.

Table 3.2-239: Minimum effective dose of CA3642 against LEPTMA in winter oilseed rape – South-East EPPO zone

Part Rated	Trial Country	DA-A	DA-B	No. of trials &	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		1.2 l/ha	1.0 l/ha	0.8 l/ha

				ARM *			**180 g AZX/ha + 180 g PTZ/ha**	**150 g AZX/ha + 150 g PTZ/ha**	**120 g AZX/ha + 120 g PTZ/ha**
Efficacy after 1 application									
LEAF	ROU	185	-		PESSEV Efficacy	7.75 a 7.8	**0.68 b** **91.2**	**0.89 b** **88.5**	1.39 b 82.1
LEAF	ROU	185	-		PESSEV Efficacy	7.93 a 7.9	**1.10 cd** **86.1**	**1.65 bcd** **79.2**	1.68 bcd 78.8
Mean efficacy				2	*Mean* Min Max	*7.8* 7.8 7.9	***88.7*** **86.1** **91.2**	***83.9*** **79.2** **88.5**	*80.4* 78.8 82.1
Efficacy after 2 applications									
LEAF	HUN	200	15		PESSEV Efficacy	8.70 a 8.7	**1.70 b** **80.5**	**0.50 b** **94.3**	1.30 b 85.1
LEAF	ROU	200	15		PESSEV Efficacy	12.02 a 12.0	**1.54 bc** **87.2**	**1.87 bc** **84.4**	1.92 bc 84.0
LEAF	ROU	200	15		PESSEV Efficacy	12.82 a 12.8	**1.33 d** **89.6**	**1.31 d** **89.8**	1.96 cd 84.7
Mean efficacy Orthogonal comparison				3	*Mean* Min Max	*11.2* 8.7 12.8	***85.8*** **80.5** **89.6**	***89.5*** **84.4** **94.3**	*84.6* 84.0 85.1
LEAF	HUN	46	21	.	PESSEV Efficacy	24.2 a 24.2	**0.1 b** **99.5**	**0.3 b** **99.0**	0.1 b 99.4
LEAF	HUN	57	32	.	PESSEV Efficacy	37.0 a 37.0	**1.0 b** **97.3**	**1.2 b** **96.8**	1.2 b 96.8
LEAF	ROU	236	49		PESSEV Efficacy	5.62 a 5.6	**0.54 cd** **90.4**	**0.72 cd** **87.2**	1.09 bc 80.6
LEAF	HUN	67	46		PESSEV Efficacy	28.4 a 28.4	**4.4 fg** **84.5**	**5.7 ef** **79.9**	9.5 d 66.5
Mean efficacy Orthogonal comparison				3	*Mean* Min Max	*23.7* 5.6 37.0	***90.7*** **84.5** **97.3**	***88.0*** **79.9** **96.8**	*81.3* 66.5 96.8
				2***	*Mean* Min Max	*32.7* 28.4 37.0	***90.9*** **84.5** **97.3**	***88.3*** **79.9** **96.8**	*81.7* 66.5 96.8
Efficacy after 2 applications									
POD	ROU	226	41		PESSEV Efficacy	6.2 a 6.2	**0.4 e** **93.5**	**0.4 e** **93.5**	0.6 de 90.3
POD	ROU	226	41		PESSEV Efficacy	6.3 a 6.3	**0.4 de** **93.7**	**0.5 cde** **92.1**	0.6 cde 90.5
Mean efficacy				2**	*Mean* Min	*6.3* 6.2	***93.6*** **93.5**	***92.8*** **92.1**	*90.4* 90.3

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM *	Name Conc Type / Rate	UTC[a]	CA3642 300 g/L SC 1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha
					Max	6.3	**93.7**	**93.5**	90.5
Efficacy after 2 applications									
STEM	ROU	200	15		PESSEV Efficacy	6.29 a 6.3	**0.33 b** **94.8**	**0.38 b** **94.0**	0.56 b 91.1
STEM	ROU	200	15		PESSEV Efficacy	6.02 a 6.0	**0.53 de** **91.2**	**0.72 cde** **88.0**	0.94 cd 84.4
Mean efficacy				2**	*Mean* Min Max	*6.2* 6.0 6.3	***93.0*** **91.2** **94.8**	***91.0*** **88.0** **94.0**	*87.7* 84.4 91.1
STEM	ROU	226	41		PESSEV Efficacy	7.5 a 7.5	**0.9 d** **88.0**	**1.0 d** **86.7**	1.1 d 85.3
STEM	ROU	226	41		PESSEV Efficacy	9.4 a 9.4	**0.8 efg** **91.5**	**1.1 c-g** **88.3**	1.3 b-f 86.2
Mean efficacy				2**	*Mean* Min Max	*8.5* 7.5 9.4	***89.7*** **88.0** **91.5**	***87.5*** **86.7** **88.3**	*85.8* 85.3 86.2
STEM	HUN	81	56	.	PESSEV Efficacy	26.3 a 26.3	**8.8 b** **66.5**	**9.9 b** **62.4**	7.0 b 73.4
STEM	HUN	79	55	.	PESSEV Efficacy	36.2 a 36.2	**1.3 b** **96.4**	**3.0 b** **91.7**	1.6 b 95.6
STEM	HUN	264	79		PESSEV Efficacy	43.6 a 43.6	**22.3 a** **48.9**	**35.0 a** **19.7**	28.3 a 35.1
STEM	HUN	257	62		PESSEV Efficacy	53.6 a 53.6	**22.6 de** **57.8**	**23.2 de** **56.7**	37.4 bc 30.2
STEM	HUN	251	54		PESSEV Efficacy	76.4 a 76.4	**12.5 g** **83.6**	**22.7 ef** **70.3**	32.3 d 57.7
Mean efficacy all trials				5	*Mean* Min Max	*47.2* 26.3 76.4	***70.7*** **48.9** **96.4**	***60.2*** **19.7** **91.7**	*58.4* 30.2 95.6
Mean efficacy 2 x spring				2***	*Mean* Min Max	*31.3* 26.3 36.2	***81.5*** **66.5** **96.4**	***77.0*** **62.4** **91.7**	*84.5* 73.4 95.6
Mean efficacy autumn + spring				3**	*Mean* Min Max	*57.9* 43.6 76.4	***63.4*** **48.9** **83.6**	***48.9*** **19.7** **70.3**	*41.0* 30.2 57.7

[a] UTC: % infestation in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials with 2 applications in spring

<u>After one autumn application</u>

At an assessment on the leaves 185 DA-A across 2 trials, there was a dose response following an application of CA3642 at different dose rates, with 89%, 84% and 80% at 1.2 L, 1.0 L and 0.8 L/ha, respectively. There were no significant differences between any of the rates in either trial.

After two applications, autumn and spring

At an early assessment (15 DA-B) on the leaves, there was no dose response following two applications of CA2642 at different rates, with 86%, 89.5% and 85% at 1.2 L, 1.0 L and 0.8 L/ha, respectively, across 3 trials. There were no significant differences between any of the rates in either trial.

At the same timing on the stems, there was a shallow dose response following two applications of CA3642 with 93% efficacy at 1.2 L/ha, 91% efficacy at 1.0 L/ha and 88% efficacy at 0.8 L/ha in the same two trials.

At 41 DA-B across 2 trials, there was a shallow dose response on the pods and the stems following two applications of CA3642 with 94% efficacy at 1.2 L/ha, 93% efficacy at 1.0 L/ha and 90% efficacy at 0.8 L/ha on the pods and 90% efficacy at 1.2 L/ha, 88% efficacy at 1.0 L/ha and 86% efficacy at 0.8 L/ha on the stems. There were no statistically significant differences between the rates on pods or the stems in these two trials.

On the stems at 54-79 DA-B, the highest rate of 1.2 L/ha was more effective compared to the other lower rates of 1.0 L and 0.8 L/ha with efficacy of 63% compared to 49% and 41%, respectively, across 3 trials. The 1.2 L and 1.0 L/ha rates were statistically significantly more effective than the lowest rate of 0.8 L/ha in 2 of the 3 trials.

After two spring applications

At an early assessment (21 DA-B) on the leaves, two spring applications of CA3642 achieved 99.5%, 99% and 99% efficacy for 1.2 L, 1.0 L and 0.8 L/ha, respectively.
At later timings 36-46 DA-B on the leaves, there was a dose response following an application of CA3642 at different dose rates, with 91%, 88% and 82% at 1.2 L, 1.0 L and 0.8 L/ha, respectively, across 2 trials. There were no significant differences between any of the rates in one of these trials while the two higher rates were statistically more effective than the 0.8 L/ha rate in the other trial.

On the stems at 50-56 DA-B, there was no dose response with 81.5%, 77% and 84.5% at 1.2 L, 1.0 L and 0.8 L/ha, respectively.

Comments of zRMS:

9 trials have been submitted to determine minimum effective dose for control of *Leptosphaeria maculans* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good effectiveness after 1-2 applications. The mean efficacy was 84-89% after 1 autumn application. The lower dose rate of 0,8 l/ha presented the comparable result (80%). Significant dose response was visible after 2 applications. The mean efficacy all trials at 1,2 l/ha was 71% whilst the lower dose rate of 0,8 l/ha achieved 58%. Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of LEPTMA in winter oilseed rape in the SE zone.

Winter oilseed rape (BRSNW) – Light leaf spot (PYRPBR – *Pyrenopeziza brassicae*)

A total of 9 field trials were established 2020 or 2020 in order to determine the minimum effective dose for the control of PYRPBR in winter oilseed rape.
Trials from the Maritime EPPO zone were carried out in France (4 trials), Germany (1 trial) and Great Britain (2 trials)
No data was generated in the North-East EPPO zone.
Trials from the South-East EPPO zone were carried out in Romania (2 trials).

CA3642 was tested at the intended dose rates, 1.0 L/ha and 1.2 L/ha (150 g or 180 g azoxystrobin and

150 g or 180 g prothioconazole) in all trials and compared to the reduced dose rate of 0.8 L/ha (120 g azoxystrobin and 120 g prothioconazole) in the Maritime EPPO zone trials. The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-240 and Table 3.2-241.

BRSNW – PYRPBR – Maritime EPPO zone

Seven trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against PYRPBR in winter oilseed rape. The trials were carried out in France (4 trials), Germany (1 trial) and Great Britain (2 trials) in 2020 or 2021.
In 5 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 38-55 and the second application was done 35-46 days later, at BBCH 65-69.
In the other 2 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 18-19 and the second application was done 135-146 days later, at BBCH 65-67.

Table 3.2-240: Minimum effective dose of CA3642 against PYRPBR in winter oilseed rape – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
Efficacy after 1 application									
LEAF	FRA	21	-		PESSEV Efficacy	19.40 a 19.4	**14.20 a** **26.8**	**14.00 a** **27.8**	18.51 a 4.6
LEAF	DEU	21	-	S05	PESSEV Efficacy	3.97 a 4.0	**3.15 a** **20.7**	**3.07 a** **22.7**	
LEAF	FRA	22	-		PESSEV Efficacy	7.72 a 7.7	**7.22 a** **6.5**	**7.36 a** **4.7**	
LEAMID	GBR	22	-		PESSEV Efficacy	18.34 a 18.3	**14.38 bc** **21.6**	**13.85 bc** **24.5**	
LEAF	FRA	37	-		PESSEV Efficacy	23.79 a 23.8	**16.46 bc** **30.8**	**17.40 bc** **26.9**	18.61 b 21.8
LEAMID	GBR	22	-		PESSEV Efficacy	20.45 a 20.5	**15.75 b** **23.0**	**14.24 b** **30.4**	
Mean efficacy				5	*Mean* Min Max	*17.9* 7.7 23.8	***21.7*** **6.5** **30.8**	***22.8*** **4.7** **30.4**	
Orthogonal comparison				2	*Mean* Min Max	*21.6* 19.4 23.8	***28.8*** **26.8** **30.8**	***27.3*** **26.9** **27.8**	*13.2* 4.6 21.8
LEAMID	GBR	45	-		PESSEV	17.07 a	**10.07 b**	**10.00 b**	

Part Rated	Coun-try	DA-A	DA-B	No. of trials & ARM *	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha
					Effica-cy	17.1	**41.0**	**41.4**	
LEAMID	GBR	46	-		PESSE V Effica-cy	14.23 a 14.2	**9.14 bc** **35.8**	**8.20 bc** **42.4**	
LEAF	FRA	37	-		PESSE V Effica-cy	4.72 a 4.7	**2.58 ab** **45.3**	**1.99 ab** **57.8**	
Mean efficacy				3	*Mean* Min Max	*12.0* 4.7 17.1	***40.7*** **35.8** **45.3**	***47.2*** **41.4** **57.8**	
LEAF	FRA	135	-		PESSE V Effica-cy	11.21 a 11.2	**8.35 a** **25.5**	**8.91 a** **20.5**	8.72 a 22.2
LEAF	FRA	146	-		PESSE V Effica-cy	17.10 a 17.1	**6.68 de** **60.9**	**8.90 cde** **48.0**	10.65 bcd 37.7
Mean efficacy				2**	*Mean* Min Max	*14.2* 11.2 17.1	***43.2*** **25.5** **60.9**	***34.2*** **20.5** **48.0**	*30.0* 22.2 37.7
Efficacy after 2 applications									
LEAF	FRA	149	14		PESSE V Effica-cy	14.27 a 14.3	**9.85 a** **31.0**	**11.91 a** **16.5**	10.57 a 25.9
LEAF	FRA	160	14		PESSE V Effica-cy	12.45 a 12.5	**6.36 ab** **48.9**	**5.75 ab** **53.8**	7.60 ab 39.0
LEAF	FRA	59	21		PESSE V Effica-cy	18.39 a 18.4	**14.25 abc** **22.5**	**12.67 a-d** **31.1**	14.99 abc 18.5
LEAF	FRA	58	20		PESSE V Effica-cy	7.51 a 7.5	**2.93 bc** **61.0**	**2.63 c** **65.0**	
LEAMID	GBR	69	23		PESSE V Effica-cy	12.55 a 12.6	**7.44 b** **40.7**	**7.79 b** **37.9**	
LEAMID	GBR	67	22		PESSE V Effica-cy	15.82 a 15.8	**8.15 b** **48.5**	**9.75 b** **38.4**	
Mean efficacy				6	*Mean* Min Max	*13.5* 7.5 18.4	***42.1*** **22.5** **61.0**	***40.5*** **16.5** **65.0**	
Orthogonal comparisons				4***	*Mean* Min Max	*13.6* 7.5 18.4	***43.2*** **22.5** **61.0**	***43.1*** **31.1** **65.0**	
				3	*Mean* Min Max	*12.5* 12.5 18.4	***22.5*** **22.5** **48.9**	***16.5*** **16.5** **53.8**	*18.5* 18.5 39.0

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
				2**	*Mean* Min Max	13.4 12.5 14.3	**39.9** **31.0** **48.9**	**35.2** **16.5** **53.8**	32.4 25.9 39.0
LEAF	FRA	177	42		PESSEV Effica-cy	16.86 a 16.9	**10.55 b** **37.4**	**12.38 b** **26.6**	11.51 b 31.7
LEAF	FRA	88	50		PESSEV Effica-cy	11.74 a 11.7	**3.52 b** **70.0**	**4.59 b** **60.9**	
Mean efficacy				2	*Mean* Min Max	*14.3* 11.7 16.9	***53.7*** **37.4** **70.0**	***43.7*** **26.6** **60.9**	
Orthogonal comparison				1	Mean	16.9	**37.4**	**26.6**	31.7
POD	FRA	220	74		PESSEV Effica-cy	9.87 a 9.9	**9.66 a** **2.1**	**8.82 a** **10.6**	8.38 a 15.1
POD	FRA	88	50		PESSEV Effica-cy	13.88 a 13.9	**6.08 b** **56.2**	**6.25 b** **55.0**	7.55 b 45.6
Mean efficacy				2	*Mean* Min Max	*11.9* 9.9 13.9	***29.2*** **2.1** **56.2**	***32.8*** **10.6** **55.0**	*30.4* 15.1 45.6
Orthogonal comparison				1	*Mean*	*9.9*	***2.1***	***10.6***	*15.1*
STEM	FRA	160	14		PESSEV Effica-cy	6.15 a 6.2	**2.24 c** **63.6**	**2.35 c** **61.8**	3.25 bc 47.2
Mean efficacy				1**	*Mean*	*6.2*	***63.6***	***61.8***	*47.2*
STEM	FRA	195	60		PESSEV Effica-cy	6.48 a 6.5	**1.41 b** **78.2**	**2.40 b** **63.0**	1.27 b 80.4
STEM	FRA	229	83		PESSEV Effica-cy	15.33 a 15.3	**5.48 cd** **64.3**	**6.84 bcd** **55.4**	8.19 a-d 46.6
STEM	FRA	95	57		PESSEV Effica-cy	27.90 a 27.9	**13.88 b** **50.3**	**13.80 b** **50.5**	18.02 b 35.4
STEM	FRA	88	50		PESSEV Effica-cy	5.23 a 5.2	**3.46 a** **33.8**	**2.75 a** **47.4**	
Mean efficacy				4	*Mean* Min Max	*13.7* 5.2 27.9	***56.6*** **33.8** **78.2**	***54.1*** **47.4** **63.0**	
Orthogonal comparisons				3	*Mean* Min Max	*16.6* 50.3 78.2	***64.2*** **50.5** **63.0**	***56.3*** **35.4** **80.4**	*54.1* 35.4 80.4
				2**	*Mean* Min Max	*10.9* 6.5 15.3	***71.2*** **64.3** **78.2**	***59.2*** **55.4** **63.0**	*63.5* 46.6 80.4

[a] UTC: % infestation in untreated control at assessment date

**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials with 2 applications in spring

After one spring application
At 21-37 DA-A on the leaves, disease control was very low with 22-23% efficacy for the two higher rates of 1.2 L and 1.0 L/ha across 5 trials. Across 2 trials where all three dose rates were applied, efficacy was similar for the 1.2 L and 1.0 L rates (31% and 28%, respectively) which was more effective than the 0.8 L/ha rate (22% efficacy) although there were no significant differences between any of the rates in any of the trials.
At later timings (37-46 DA-A), disease control on the leaves had increased although there was no dose response (41% and 47% efficacy for the 1.2 L and 1.0 L rates, respectively).

After two spring applications
At early assessments (20-23 DA-B) across 4 trials on the leaves, two applications of CA3642 at the higher rates of 1.2 L and 1.0 L/ha gave the same level of efficacy (43%). In one of these trials where all three dose rates were applied, the two higher rates of 1.2 L and 1.0 L/ha gave more effective control compared to the 0.8 L/ha rate with 22.5%, 31% and 18.5% efficacy, respectively. There were no significant differences between any of the rates in any of the trials.
At a later timing (50 DA-B) on the leaves in 1 trial, two spring applications of CA3642 at 1.2 L gave 70% efficacy which was numerically but not significantly higher than that of the 1.0 L/ha rate (61% efficacy).

At 50 DA-B in 1 trial, two applications of CA3642 gave similar disease control on the pods at 1.2 L and 1.0 L/ha (56% and 55% efficacy, respectively) with numerically but not significantly lower control at 0.8 L/ha (46% efficacy).

Similarly on the stems, two applications of CA3642 at 1.2 L and 1.0 L/ha gave more effective disease control (50% and 50.5% efficacy, respectively) compared to the 0.8 L/ha rate (35% efficacy) in 1 trial at 50-57 DA-B, although there were no significant differences between the dose rates.

After one autumn application
At assessments of 135-146 DA-A across 2 trials, there was a dose response on the leaves where one application of CA3642 in the autumn achieved 43% efficacy at 1.2 L/ha, 34% efficacy at 1.0 L/ha and 30% efficacy at 0.8 L/ha. There were no statistically significant differences between any of the three applied rates in either of the trials.

After two applications, autumn and spring
At an early assessment (14 DA-B) across 2 trials, there was a dose response on the leaves following two applications of CA3642 with 40% efficacy at 1.2 L/ha, 35% efficacy at 1.0 L/ha and 32% efficacy at 0.8 L/ha. There were no statistically significant differences between the rates in either trial. At a later timing (42 DA-B) in one of these two trials, the 1.2 L/ha rate gave the most effective control compared to the lower rates with 37% efficacy compared to 27% and 32% efficacy for the 1.0 L and 0.8 L/ha rates, with no statistically significant differences between any of the rates applied.

At 14 DA-B in 1 trial, two applications of CA3642 gave similar disease control on the stems at 1.2 L and 1.0 L/ha (64% and 62% efficacy, respectively) with numerically but not significantly lower control at 0.8 L/ha (47% efficacy).
At later timings (60-83 DA-B) across 2 trials, the 1.2 L/ha rate gave the most effective control on stems compared to the lower rates with 71% efficacy compared to 59% and 63.5% efficacy for the 1.0 L and 0.8 L/ha rates, with no statistically significant differences between any of the rates applied in either trial.

At a later timing 74 DA-B in 1 trial, there were very low levels of control and no dose response on the pods with 2%, 11% and 15% efficacy following two applications of CA3642 at 1.2 L, 1.0 L and 0.8 L/ha.

Comments of zRMS:

7 trials have been submitted to determine minimum effective dose for control of *Pyrenopeziza brassicae* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved very low effectiveness after 1 application. Moderate level of control was observed after 2 applications. Due to insufficient effectiveness after 1 application, cMSs are kindly asked to consider this use on national level.

BRSNW – PYRPBR – North-East EPPO zone

No data is available on PYRPBR in the North-East EPPO zone.

Comments of zRMS:

No trials have been submitted to determine minimum effective dose for control of *Pyrenopeziza brassicae* in winter oilseed rape in the North-East EPPO climatic zone. An extrapolation is not possible. This use cannot be accepted in Poland.

BRSNW – PYRPBR – South-East EPPO zone

Two trials from the South-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against PYRPBR in winter oilseed rape. Both trials were carried out in Romania in 2021.
In the 2 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51 and the second application was done 22 days later, at BBCH 65-67.

Table 3.2-241: Minimum effective dose of CA3642 against PYRPBR in winter oilseed rape – South-East EPPO zone

Part Rated	**Trial Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**[a]	**CA3642 300 g/L SC**	
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**
Efficacy after 1 application								
LEAF	ROU	22	-	.	PESSEV Efficacy	7.9 a 7.9	**4.9 b 38.0**	**4.9 b 38.0**
LEAF	ROU	22	-	.	PESSEV Efficacy	5.8 a 5.8	**3.2 bc 44.8**	**3.9 bc 32.8**
Mean efficacy				2	*Mean* Min Max	*6.9* 5.8 7.9	***41.4*** **38.0** **44.8**	***35.4*** **32.8** **38.0**
Efficacy after 2 applications								
LEAF	ROU	42	20	.	PESSEV Efficacy	6.2 a 6.2	**2.6 c 58.1**	**3.4 bc 45.2**
LEAF	ROU	44	22	.	PESSEV Efficacy	6.4 a 6.4	**3.7 bc 42.2**	**3.7 bc 42.2**
Mean efficacy				2	*Mean* Min Max	*6.3* 6.2 6.4	***50.1*** **42.2** **58.1**	***43.7*** **42.2** **45.2**

[a] UTC: % infestation in untreated control at assessment date

<u>After one spring application</u>
At 22 DA-A, the 1.2 L/ha rate gave more effective control on leaves compared to the lower rate of 1.0 L/ha with 41% and 35% efficacy, respectively. There were no statistically significant differences between the two rates in either trial.

<u>After two spring applications</u>

At 20-22 DA-A, the 1.2 L/ha rate gave more effective control on leaves compared to the lower rate of 1.0 L/ha with 50% and 44% efficacy, respectively. There were no statistically significant differences between the two rates in either trial.

Comments of zRMS:

Only 2 trials have been submitted to determine minimum effective dose for control of *Pyrenopeziza brassicae* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2l/ha achieved low effectiveness after 1-2 applications. Furthermore, no lower dose rates have been tested in the trials. Due to limited number of trial, cMSs are kindly asked to consider this use on national level.

Winter oilseed rape (BRSNW) – Sclerotinia stem rot (SCLESC – *Sclerotinia sclerotiorum*)

A total of 40 field trials were established between 2019 and 2021 in order to determine the minimum effective dose for the control of SCLESC in winter oilseed rape.
Trials from the Maritime EPPO zone were carried out in France (3 trials), the Czech Republic (6 trials) and Germany (8 trials).
Trials from the North-East EPPO zone were carried out in Latvia (2 trials) and Poland (12 trials).
Trials from the South-East EPPO zone were carried out in Hungary (4 trials), Romania (3 trials) and Slovakia (2 trials).

CA3642 was tested at the intended dose rates, 1.0 L/ha and 1.2 L/ha (150 g or 180 g azoxystrobin and 150 g or 180 g prothioconazole) compared to the reduced dose rate of 0.8 L/ha (12 g azoxystrobin and 120 g prothioconazole). The rates reflect the proposed label rates and a reduced rate and are therefore in accordance with the EPPO standard PP 1/225 ‘*Minimum effective dose’*.

Summaries of the dose response results grouped by EPPO zone are provided in Table 3.2-242, Table 3.2-243 and Table 3.2-244.

BRSNW – SCLESC – Maritime EPPO zone

A total of 17 trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in France (3 trials), the Czech Republic (6 trials), Germany (8 trials) between 2019 and 2021.
In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 34-55 and the second application was done 18-44 days later, at BBCH 65-69.
In the other 6 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-19 and the second application was done 135-208 days later, at BBCH 65-67.

Table 3.2-242: Minimum effective dose of CA3642 against SCLESC in winter oilseed rape – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**Un-treated**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**
					Rate		**1.2 l/ha** 180 g AZX/ha + 180 g PTZ/ha	**1.0 l/ha** 150 g AZX/ha + 150 g PTZ/ha	**0.8 l/ha** 120 g AZX/ha + 120 g PTZ/ha
Efficacy after 2 applications									
LEAF	CZE	49	22		PESSEV	7.98 a	**1.40 c**	**1.55 c**	1.85 c
					Efficacy	8	**82.5**	**80.6**	76.8
Mean efficacy				1	Mean	8	**82.5**	**80.6**	76.8

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**Un-treated**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
LEAF	CZE	59	35		PESSEV	9.45 a	**5.18 b**	**4.58 b**	6.78 b
					Effi-cacy	9.5	**45.2**	**51.5**	28.3
LEAF	CZE	68	42		PESSEV	7.68 a	**1.65 c**	**2.18 c**	4.75 b
					Effi-cacy	7.7	**78.5**	**71.6**	38.2
Mean efficacy				2	Mean	8.6	**61.9**	**61.6**	33.2
					Min	7.7	**45.2**	**51.5**	28.3
					Max	9.5	**78.5**	**71.6**	38.2
POD	CZE	78	56		PESSEV	6.00 a	**1.00 b**	**1.00 b**	2.00 b
					Effi-cacy	6	**83.3**	**83.3**	66.7
Mean efficacy				1	*Mean*	*6*	***83.3***	***83.3***	*66.7*
STEM	CZE	65	38		PESSEV	6.25 a	**0.90 b**	**1.85 b**	1.25 b
					Effi-cacy	6.3	**85.6**	**70.4**	80
STEM	CZE	63	36		PESSEV	15.55 a	**0.58 b**	**0.10 b**	0.28 b
					Effi-cacy	15.6	**96.3**	**99.4**	98.2
STEM	CZE	68	42		PESSEV	16.50 a	**4.75 c**	**5.50 c**	10.25 b
					Effi-cacy	16.5	**71.2**	**66.7**	37.9
Mean efficacy				3	*Mean*	*12.8*	***84.4***	***78.8***	*72*
					Min	6.3	**71.2**	**66.7**	37.9
					Max	16.5	**96.3**	**99.4**	98.2
STEM	CZE	76	52		PESSEV	7.30 a	**2.00 b**	**1.65 b**	1.30 b
					Effi-cacy	7.3	**72.6**	**77.4**	82.2
STEM	CZE	78	56		PESSEV	18.40 a	**5.55 cde**	**7.05 cd**	8.40 c
					Effi-cacy	18.4	**69.8**	**61.7**	54.3
STEM	CZE	69	51		PESSEV	4.25 a	**0.00 b**	**0.05 b**	0.05 b
					Effi-cacy	4.3	**100**	**98.8**	98.8
STEM	FRA	229	64		PESSEV	14.75 a	**1.20 bc**	**1.20 bc**	1.40 bc
					Effi-cacy	14.8	**91.9**	**91.9**	90.5
STEM	FRA	195	60		PESSEV	6.37 a	**0.59 b**	**0.46 b**	0.23 b
					Effi-cacy	6.4	**90.7**	**92.8**	96.4
STEM	FRA	229	83		PESSEV	18.15 a	**0.40 d**	**0.85 d**	2.00 cd
					Effi-cacy	18.2	**97.8**	**95.3**	89
STEM	DEU	95	76		PESSEV	15.77 a	**0.48 b**	**0.50 b**	0.78 b
					Effi-	15.8	**97**	**96.8**	95.1

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type** **Rate**	**Un-treated**	**CA3642 300 g/L SC** **1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**CA3642 300 g/L SC** **1.0 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**CA3642 300 g/L SC** **0.8 l/ha** **120 g AZX/ha + 120 g PTZ/ha**
					cacy				
STEM	DEU	102	76		PESS EV Effi-cacy	26.85 a 26.9	**0.00 d** **100**	**0.00 d** **100**	0.00 d 100
Mean efficacy Orthogonal comparison				8	*Mean* Min Max	*14* 4.3 26.9	***90*** **69.8** **100**	***89.3*** **61.7** **100**	*88.3* 54.3 100
				5***	*Mean* Min Max	*14.5* 4.3 26.9	***87.9*** **69.8** **100.0**	***86.9*** **61.7** **100.0**	*86.1* 54.3 100.0
				3**	*Mean* Min Max	*13.1* 6.4 18.2	***93.5*** **90.7** **97.8**	***93.3*** **91.9** **95.3**	*92.0* 89.0 96.4
STEM	DEU	275	84		PESS EV Effi-cacy	29.06 a 29.1	7.50 e 74.2	8.00 e 72.5	9.75 e 66.4
STEM	DEU	266	83		PESS EV Effi-cacy	23.00 a 23.0	4.06 g 82.3	5.38 fg 76.6	7.94 def 65.5
STEM	DEU	286	78		PESS EV Effi-cacy	32.81 a 32.8	15.94 bc 51.4	14.81 bc 54.9	25.06 b 23.6
STEM	DEU	110	77		PESS EV Effi-cacy	53.13 a 53.1	9.13 ef 82.8	12.00 de 77.4	16.44 c 69.1
STEM	DEU	109	73		PESS EV Effi-cacy	14.69 a 14.7	3.94 b 73.2	6.44 b 56.2	7.63 b 48.1
STEM	DEU	112	73		PESS EV Effi-cacy	13.88 a 13.9	2.56 c 81.6	4.00 bc 71.2	7.44 b 46.4
Mean efficacy Orthogonal comparison				6	*Mean* Min Max	*27.8* 13.9 53.1	***74.3*** **51.4** **82.8**	***68.1*** **54.9** **77.4**	*53.2* 23.6 69.1
				3***	*Mean* Min Max	*27.2* 13.9 53.1	***79.2*** **73.2** **82.8**	***68.3*** **56.2** **77.4**	*54.5* 46.4 69.1
				3**	*Mean* Min Max	*28.3* 23.0 32.8	***69.3*** **51.4** **82.3**	***68.0*** **54.9** **76.6**	*51.8* 23.6 66.4

[a] UTC: % infestation in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials with 2 applications in spring

<u>After two spring applications</u>

At early assessments (17-22 DA-B) across 1 trial on the leaves, two applications of CA3642 demonstrated a shallow dose response with 82.5%, 81% and 77% efficacy, respectively. There were no significant differences between any of the rates in the trial.

Similarly at a later timing (35-42 DA-B), two spring applications of CA3642 in two trials showed that the two higher rates were considerably more effective than the lowest applied rate with 619% and 61.6% efficacy for the 1.2 L and 1.0 L/ha rates on the leaves and 33% efficacy for the 0.8 L/ha rate. In one of the trials the proposed dose rates gave significantly higher efficacy compared to the reduced rate of 0.8 L/ha.

At 56 DA-B in 1 trial, two applications of CA3642 gave the same levels of disease control on the pods at 1.2 L and 1.0 L/ha (83% efficacy) with numerically but not significantly lower control at 0.8 L/ha (67% efficacy).

At early assessments (36-42 DA-B) across 3 trials, there was a dose response on the stems where two spring applications of CA3642 achieved 84% efficacy at 1.2 L/ha, 79% efficacy at 1.0 L/ha and 72% efficacy at 0.8 L/ha. The 1.2 L and 1.0 L rates were significantly more effective than the 0.8 L rate in 1 trial.
At later timings (51-76 DA-B) across 5 trials, there was a shallow dose response on the stems where two spring applications of CA3642 achieved 88% efficacy at 1.2 L/ha, 87% efficacy at 1.0 L/ha and 86% efficacy at 0.8 L/ha. There were no significant differences between rates in all 5 trials
At even later timings (73-77 DA-B) across 3 trials, there was also a dose response on the stems where two spring applications of CA3642 achieved 79% efficacy at 1.2 L/ha, 68% efficacy at 1.0 L/ha and 54.5% efficacy at 0.8 L/ha. There were no significant differences between any of the rates in 1 trial, the 1.2 L and 1.0 L rates were significantly more effective than the 0.8 L rate in 1 trial and the 1.2 L/ha rate was significantly more effective than the 0.8 L rate in 1 trial.

After two applications, autumn and spring
At an assessment 64-83 DA-B across 3 trials, two applications of CA3642 gave similar levels of disease control on the pods at all applied rates with a slight dose effect (93.5% , 93% and 92% efficacy) no statistically significant differences between dose rates in any of the 3 trials.

At an assessment 78-84 DA-B across 3 trials, two applications of CA3642 gave similar levels of disease control on the stems at 1.2 L and 1.0 L/ha (69% and 68% efficacy) with lower control at 0.8 L/ha (52% efficacy). There were no statistically significant differences between dose rates in 2 of the 3 trials while the 1.2 L and 1.0 L rates were significantly more effective compared to the 0.8 L/ha rate in 1 trial.

Comments of zRMS:

17 trials have been submitted to determine minimum effective dose for control of *Sclerotinia sclerotiorum* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 2 applications. Dose response was visible on leaves (62% at 1-1,2 l/ha vs 33% at 0,8 l/ha), pods (83% vs 67%) and stems (68-74% vs 53%). No results after 1 application were available and cMSs are kindly asked to consider this use on national level.

BRSNW – SCLESC – North-East EPPO zone

A total of 16 trials from the North-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in Latvia (2 trials) and Poland (14 trials) between 2019 and 2021.
In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 32-55 and the second application was done 21-47 days later, at BBCH 65-69.
In the other 5 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 16-20 and the second application was done 187-210 days later, at BBCH 65-68.

Table 3.2-243: Minimum effective dose of CA3642 against SCLESC in winter oilseed rape – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No.	Name	UTC[a]	CA3642

				of trials & ARM*	Conc Type		300 g/L SC		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
Efficacy after 2 applications									
POD	POL	83	54		PESSEV Efficacy	7.9 a 7.9	**0.4 b 94.9**	**0.9 b 88.6**	1.1 b 86.1
Mean efficacy				1	*Mean*	7.9	**94.9**	**88.6**	86.1
Efficacy after 2 applications									
STEM	POL	226	16		PESSEV Efficacy	10.2 a 10.2	**0.5 d 95.1**	**1.6 bc 84.3**	1.9 bc 81.4
STEM	POL	42	21		PESSEV Efficacy	7.8 a 7.8	**1.0 b 87.2**	**1.7 b 78.2**	1.4 b 82.1
STEM	POL	42	21	TA[14]		2.1 a 2.1	0.1 c-f 95.9	0.2 bcd 92.2	0.1 bcd 93.7
STEM	POL	50	21		PESSEV Efficacy	6.6 a 6.6	**0.6 b 90.9**	**0.8 b 87.9**	1.4 b 78.8
STEM	POL	50	21	TL[37]		1.2 a 1.2	0.2 b 84.0	0.3 b 79.2	0.3 b 71.5
Mean efficacy Orthogonal comparison				3	*Mean* Min Max	*8.2* 6.6 10.2	***91.1*** **87.2** **95.1**	***83.5*** **78.2** **87.9**	*80.7* 78.8 82.1
				2***	*Mean* Min Max	*7.2* 6.6 7.8	***89.0*** **87.2** **90.9**	***83.0*** **78.2** **87.9**	*80.4* 78.8 82.1
Efficacy after 2 applications									
STEM	POL	80	33		PESSEV Efficacy	12.9 a 12.9	**4.4 d 65.9**	**7.0 c 45.7**	9.1 b 29.5
STEM	POL	239	34		PESSEV Efficacy	9.0 a 9.0	**3.0 c 66.7**	**3.7 c 58.9**	6.5 b 27.8
STEM	POL	84	38		PESSEV Efficacy	15.3 a 15.3	**3.3 b 78.4**	**1.8 b 88.2**	2.0 b 86.9
Mean efficacy Orthogonal comparison				3	*Mean* Min Max	*12.4* 9.0 15.3	***70.3*** **65.9** **78.4**	***64.3*** **45.7** **88.2**	*48.1* 27.8 86.9
				2***	*Mean* Min Max	*14.1* 12.9 15.3	***72.2*** **65.9** **78.4**	***67.0*** **45.7** **88.2**	*58.2* 29.5 86.9
Efficacy after 2 applications									
STEM	LVA	85	49		PESSEV Efficacy	5.0 a 5.0	**0.1 b 98.0**	**0.5 b 90.0**	0.3 b 94.0
STEM	POL	237	50		PESSEV Efficacy	10.5 a 10.5	**3.0 f 71.4**	**4.5 e 57.1**	7.1 d 32.4
STEM	POL	86	50		PESSEV Efficacy	5.1 a 5.1	**0.5 d 90.2**	**0.7 cd 86.3**	0.9 bcd 82.4
STEM	POL	83	54		PESSEV Efficacy	23.1 a 23.1	**1.6 b 93.1**	**2.0 b 91.3**	3.1 b 86.6
STEM	POL	83	54	TA[51]		12.3a 12.3	0.2 bcd 98.0	0.3 bcd 97.7	0.5 bc 96.0
STEM	POL	76	55		PESSEV Efficacy	14.9 a 14.9	**1.6 cd 89.3**	**3.3 cd 77.9**	4.2 c 71.8
STEM	LVA	82	56		PESSEV Efficacy	5.5 a 5.5	**0.8 b 85.5**	**0.8 b 85.5**	1.2 b 78.2
STEM	POL	271	61		PESSEV Efficacy	24.1 a 24.1	**2.0 d 91.7**	**6.6 c 72.6**	8.4 c 65.1
STEM	POL	269	62		PESSEV Efficacy	19.5 a 19.5	**3.4 e 82.6**	**5.2 de 73.3**	9.6 bc 50.8
STEM	POL	268	62		PESSEV Efficacy	10.7 a 10.7	**2.3 d 78.5**	**4.3 c 59.8**	6.7 b 37.4
Mean efficacy all trials				9	*Mean* Min	*13.2* 5.0	***86.7*** **71.4**	***77.1*** **57.1**	*66.5* 32.4

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[a]	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha
					Max	24.1	**98.0**	**91.3**	94.0
Trials 2 x spring				5***	*Mean*	*10.7*	***91.2***	***86.2***	*82.6*
					Min	5.0	**85.5**	**77.9**	71.8
					Max	23.1	**98.0**	**91.3**	94.0
Trials autumn + spring				4**	*Mean*	*16.2*	***81.0***	***65.7***	*46.4*
					Min	10.5	**71.4**	**57.1**	32.4
Orthogonal comparison					Max	24.1	**91.7**	**73.3**	65.1

[a] UTC: % infestation in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials with 2 applications in spring

<u>After two spring applications</u>
At 47 or 54 DA-B across 2 trials, two applications of CA3642 demonstrated a dose response on the pods where 1.2 L/ha gave 95% efficacy, 1.0 L gave 89% efficacy and the 0.8 L/ha rate gave 86% efficacy. There were no significant differences between any of the rates in the trial.

At an early assessment 21 DA-B across 2 trials, there was a dose response on the stems following two spring applications of CA3642 where 1.2 L/ha gave 89% efficacy, 1.0 L gave 83% efficacy and the 0.8 L/ha rate gave 80% efficacy. There were no significant differences between any of the applied rates in either of the trials.
At later timings (33-38 DA-B) on the stems across 2 trials, there was also a dose response where 1.2 L/ha gave 72% efficacy, 1.0 L gave 67% efficacy and the 0.8 L/ha rate gave 58% efficacy. There were no significant differences between any of the applied rates in 1 trial and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 1 trial.
At even later timings on the stems (47-56 DA-B), there was a dose response on the stems where 1.2 L/ha gave 91% efficacy, 1.0 L gave 86% efficacy and the 0.8 L/ha rate gave 83% efficacy. There were no significant differences between any of the applied dose rates in any of the 5 trials.

<u>After two applications, autumn and spring</u>
At an early assessment 16 DA-B in 1 trial, two applications of CA3642 at the higher rate of 1.2 L/ha gave a numerically and significantly higher level of efficacy on the stems compared to the 1.0 L and 0.8 L/ha rates with 95%, 84% and 81% efficacy, respectively.
At a later timing (34 DA-B) in 1 other trial, there was a dose response on the stems following two spring applications of CA3642 where 1.2 L/ha gave 67% efficacy, 1.0 L gave 59% efficacy and the 0.8 L/ha rate gave 28% efficacy. The 1.2 L and 1.0 L/ha rates were significantly more effective compared to the 0.8 L/ha rate.
At even later timings (50-62 DA-B) across 4 trials, there was also a dose response on the stems following two spring applications of CA3642 where 1.2 L/ha gave 81% efficacy, 1.0 L gave 66% efficacy and the 0.8 L/ha rate gave 46% efficacy. The 1.2 L and 1.0 L/ha rates were significantly more effective compared to the 0.8 L/ha rate in 1 trial, the 1.2 L/ha rate was significantly more effective than the two lower rates in 1 trial and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 2 trials.

Comments of zRMS:

16 trials have been submitted to determine minimum effective dose for control of *Sclerotinia sclerotiorum* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 2 applications. Dose response was visible on stems (64-70% at 1-1,2 l/ha vs 48% at 0,8 l/ha and 77-87% vs 67%). No results were available after 1 application and an extrapolation is not possible. This use

~~cannot be accepted in Poland.~~ for justification of MED. However, sufficient results were presented for CA3642 at dose rate of 1,0-1,2 l/ha after 1 application in chapter 3.2.3. Moderate level of control was observed in the late assessment for both doses.

BRSNW – SCLESC – South-East EPPO zone

Nine trials from the South-East EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in Hungary (4 trials), Romania (3 trials) and Slovakia (2 trials) in 2019 or 2020.
In 8 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 12-38 days later, at BBCH 65-67.
In the other trial, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 18 and the second application was done 185 days later, at BBCH 65.

Table 3.2-244: Minimum effective dose of CA3642 against SCLESC in winter oilseed rape – South-East EPPO zone

Part Rated	Trial Country	DA-A	DA-B	No. of trials & ARM *	Name Conc Type / Rate	UTC[a]	CA3642 300 g/L SC 1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha
Efficacy after 1 application									
LEAF	ROU	21	21		PESSEV Efficacy	9.42 a 9.4	**0.75 b** **92.0**	**1.09 b** **88.4**	1.95 b 79.3
LEAF	ROU	21	21		PESSEV Efficacy	12.5 a 12.5	**2.5 c** **80.0**	**3.1 bc** **75.2**	3.5 b 72.0
Mean efficacy				2	*Mean* Min Max	*11.0* 9.4 12.5	***86.0*** **80.0** **92.0**	***81.8*** **75.2** **88.4**	*75.6* 72.0 79.3
Efficacy after 2 applications									
LEAF	ROU	59	21		PESSEV Efficacy	7.10 a 7.1	**0.23 c** **96.8**	**0.58 c** **91.8**	1.73 b 75.6
LEAF	ROU	42	21		PESSEV Efficacy	19.34 a 19.3	**3.91 e** **79.8**	**5.23 d** **73.0**	6.86 c 64.5
LEAF	ROU	42	21		PESSEV Efficacy	19.36 a 19.4	**3.51 d** **81.9**	**4.37 cd** **77.4**	6.38 b 67.0
Mean efficacy				3	*Mean* Min Max	*15.3* 7.1 19.4	***86.1*** **79.8** **96.8**	***80.7*** **73.0** **91.8**	*69.1* 64.5 75.6
LEAF	HUN	63	36	.	PESSEV Efficacy	13.3 a 13.3	**5.6 b** **57.9**	**3.7 b** **72.2**	5.6 b 57.9
LEAF	ROU	60	39		PESSEV Efficacy	21.4 a 21.4	**5.3 e** **75.2**	**5.7 e** **73.4**	8.0 c 62.6
LEAF	ROU	60	39		PESSEV Efficacy	21.4 a 21.4	**5.2 e** **75.7**	**6.2 de** **71.0**	7.3 c 65.9
Mean efficacy				3	*Mean* Min Max	*18.7* 13.3 21.4	***69.6*** **57.9** **75.7**	***72.2*** **71.0** **73.4**	*62.1* 57.9 65.9
Efficacy after 2 applications									

Part Rated	**Trial Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
POD	HUN	67	43	.	PESSEV Efficacy	33.0 a 33.0	**10.7 b** **67.6**	**17.5 b** **47.0**	11.0 b 66.7
POD	HUN	69	42	.	PESSEV Efficacy	23.35 a 23.4	**13.30 b** **43.0**	**9.15 b** **60.8**	11.45 b 51.0
POD	ROU	60	39		PESSEV Efficacy	5.4 a 5.4	**0.2 cd** **96.3**	**0.3 cd** **94.4**	0.4 c 92.6
POD	ROU	60	39		PESSEV Efficacy	5.3 a 5.3	**0.2 b** **96.2**	**0.2 b** **96.2**	0.3 b 94.3
POD	SVK	70	50		PESSEV Efficacy	5.6 a 5.6	**0.7 d** **87.5**	**1.0 d** **82.1**	1.4 cd 75.0
Mean efficacy				5	*Mean* Min Max	*14.5* 5.3 33.0	***78.1*** **43.0** **96.3**	***76.1*** **47.0** **96.2**	*75.9* 51.0 94.3
Efficacy after 2 applica-tions									
ROOT	ROU	80	42		PESSEV Efficacy	4.93 a 4.9	**0.11 b** **97.8**	**0.24 b** **95.1**	0.20 b 95.9
ROOT	ROU	80	42	TL[28]		0.8 a 0.8	0.0 b 95.4	0.1 b 92.9	0.1 b 89.4
ROOT	ROU	60	39		PESSEV Efficacy	5.2 a 5.2	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
ROOT	ROU	60	39		PESSEV Efficacy	5.1 a 5.1	**0.0 b** **100.0**	**0.0 b** **100.0**	0.0 b 100.0
Mean efficacy				3	*Mean* Min Max	*5.1* 4.9 5.2	***99.3*** **97.8** **100.0**	***98.4*** **95.1** **100.0**	*98.6* 95.9 100.0
Efficacy after 2 applica-tions									
STEM	ROU	59	21		PESSEV Efficacy	12.87 a 12.9	**0.31 c** **97.6**	**0.94 c** **92.7**	2.89 b 77.5
STEM	ROU	42	21		PESSEV Efficacy	9.63 a 9.6	**1.34 d** **86.1**	**1.36 d** **85.9**	2.24 c 76.7
STEM	ROU	42	21		PESSEV Efficacy	6.78 a 6.8	**0.83 d** **87.8**	**2.15 bc** **68.3**	2.52 b 62.8
Mean efficacy				3	*Mean* Min Max	*9.8* 6.8 12.9	***90.5*** **86.1** **97.6**	***82.3*** **68.3** **92.7**	*72.4* 62.8 77.5
STEM	HUN	81	54	.	PESSEV Efficacy	24.7 a 24.7	**11.0 b** **55.5**	**5.2 b** **78.9**	7.6 b 69.2
STEM	HUN	232	47		PESSEV Efficacy	33.4 a 33.4	**4.6 b** **86.2**	**4.8 b** **85.6**	4.6 b 86.2
STEM	HUN	232	47	TL[21]		21.0 a 21.0	2.0 b 90.7	2.2 b 89.4	2.7 b 87.1

Part Rated	**Trial Coun-try**	**DA-A**	**DA-B**	**No. of trials & ARM ***	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		
					Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha**
STEM	HUN	69	57		PESSEV Efficacy	12.7 a 12.7	**2.7 c** **78.7**	**2.2 c** **82.7**	8.5 b 33.1
STEM	ROU	60	39		PESSEV Efficacy	10.4 a 10.4	**2.0 f** **80.8**	**2.2 e** **78.8**	3.1 d 70.2
STEM	ROU	60	39		PESSEV Efficacy	9.2 a 9.2	**1.9 g** **79.3**	**2.3 f** **75.0**	3.2 d 65.2
STEM	SVK	74	57		PESSEV Efficacy	5.6 a 5.6	**0.4 d** **92.9**	**0.7 cd** **87.5**	1.0 cd 82.1
STEM	SVK	74	57	TL[16]		0.8 a 0.8	0.1 d 91.1	0.1 cd 86.7	0.1 cd 82.8
Mean efficacy				6	*Mean* Min Max	*16.0* 5.6 33.4	***78.9*** **55.5** **92.9**	***81.4*** **75.0** **87.5**	*67.7* 33.1 86.2
Orthogonal comparison				5***	*Mean* Min Max	*12.5* 5.6 24.7	***77.4*** **55.5** **92.9**	***80.6*** **75.0** **87.5**	*64.0* 33.1 82.1

[a] UTC: % infestation in untreated control at assessment date
***Mean efficacy across trials with 2 applications in spring

<u>After one spring application</u>
At 21 DA-A across 2 trials, there was a dose response on the leaves where 1.2 L/ha gave 86% efficacy, 1.0 L/ha gave 82% efficacy and 0.8 L/ha gave 76% efficacy with no significant differences between the three dose rates in 1 trial and significantly more effective control from 1.2 L/ha compared to the 0.8 L/ha rate in the other trial.

<u>After two spring applications</u>
At an early assessment (21 DA-B) across 3 trials, there was a dose response on the leaves where 1.2 L/ha gave 86% efficacy, 1.0 L/ha gave 81% efficacy and 0.8 L/ha gave 69% efficacy. The two higher rates of 1.2 L and 1.0 L/ha were significantly more effective than the 0.8 L/ha rate in 2 of the trials and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 1 trial.
At later timings (36-39 DA-B) across 3 trials, the two higher rates of 1.2 L and 1.0 L/ha were more effective on the leaves than the lowest rate of 0.8 L/ha with 70%, 72% and 62% efficacy, respectively. The two higher rates of 1.2 L and 1.0 L/ha were significantly more effective than the 0.8 L/ha rate in 2 of the trials and there were no significant differences between any of the dose rates in 1 trial.

At 21 DA-B on the stems, there was a dose response where 1.2 L/ha gave 90.5% efficacy, 1.0 L/ha gave 82% efficacy and 0.8 L/ha gave 72% efficacy across 3 trials. The two higher rates of 1.2 L and 1.0 L/ha were significantly more effective than the 0.8 L/ha rate in 2 of the trials and 1.2 L/ha was significantly more effective than 1.0 L and 0.8 L/ha in 1 trial.
At later timings (39-57 DA-B) across 5 trials, the two higher rates of 1.2 L and 1.0 L/ha were more effective on the leaves than the lowest rate of 0.8 L/ha with 77%, 81% and 64% efficacy, respectively. The two higher rates of 1.2 L and 1.0 L/ha were significantly more effective than the 0.8 L/ha rate in 2 of the trials, there were no significant differences between any of the dose rates in 1 trial and 1.2 L/ha>1.0 L/ha>0.8 L/ha in 2 trials.

At 39-50 DA-B across 5 trials, there was no clear dose response on the pods following two spring applications of CA3642 where 1.2 L/ha gave 78% efficacy and both 1.0 L and 0.8 L/ha gave 76%

efficacy with no significant differences between any of the applied rates in any of the 5 trials.
Similarly, there was no clear dose response on the roots across 3 trials at 39-42 DA-B, with 99% efficacy for both 1.2 L and 0.8 L/ha and 98% efficacy for the 1.0 L/ha rate and no significant differences between any of the dose rates in any of the trials.

After two applications, autumn and spring
At 47 DA-B in 1 trial, there was no dose response on the stems following two applications of CA3642 with all three dose rates giving 86% efficacy.

Comments of zRMS:

9 trials have been submitted to determine minimum effective dose for control of *Sclerotinia sclerotiorum* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 82-86% after 1 application. The lower dose rate of 0,8 l/ha presented moderate level of control (76%). Similar effect was observed after 2 applications. Dose response was visible on leaves (81-86% vs 69%), stems (82-91% vs 72%). Taking into account all results, the dose rate of 1 l/ha can be determined MED for control of SCLESC in winter oilseed rape in the SE zone.

Winter oilseed rape (BRSNW) – Green leaf area

A total of 20 trials are available to justify the minimum effective dose of CA3642 applied up to two times in winter oilseed rape, assessed in terms of green leaf area. Trials were carried out in the Maritime EPPO zone in France (3 trials), Great Britain (1 trial) and Germany (1 trial), in the North-East EPPO zone in Poland (6 trials) and in the South-East EPPO zone in Hungary (5 trials) and Romania (4 trials), all in 2020.

BRSNW – Green leaf area – Maritime EPPO zone

A total of four Maritime EPPO zone trials (3 trials in France, 1 trial in Great Britain have generated data on green leaf area following 2 applications of CA3642 in winter oilseed rape.
In one trial, both applications were conducted in the spring, in the other three trials the first application was conducted in the autumn and the second application was conducted in the spring.

After two spring applications
Efficacy in terms of green leaf area was assessed on the pod and stem in 1 trial.
After two applications of CA3642 at 1.2 L/ha, the mean green leaf area increased by 146% compared to the untreated control, and there was a very similar increase of 144% after two applications at 1.0 L/ha.

After two applications, one in autumn and one in spring
Efficacy in terms of green leaf area was assessed on the plant in all 3 trials. There were two pathogens present in 1 of the trials, and one pathogen present in 2 of the trials.
Across all three trials, green leaf area on the plant increased by 38-52% with no dose response following two applications of 1.2 L, 1.0 L or 0.8 L/ha.

The increase of green leaf area induced by CA3642 at the 1.2 L and 1.0 L/ha dose rates was statistically significant compared to the untreated control in 1 of the 5 data sets.

Table 3.2-245: Minimum effective dose of CA3642 assessed as green leaf area in winter oilseed rape – Maritime EPPO zone

Country	Part Rated	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha

FRA	POD	88	50			17.50 c 17.5	**23.75 bc** **135.7**	**32.50 ab** **185.7**	26.25 abc 150.0
FRA FRA	STEM PLANT	88 229	50 64			31.25 a 31.3 21.25 b 21.3	**51.25 a** **164.0** **42.50 a** **200.0**	**52.50 a** **168.0** **50.00 a** **235.3**	51.25 a 164.0 45.00 a 211.8
GBR	PLANT	160	69			71.25 a 71.3	**76.25 a** **107.0**	**73.75 a** **103.5**	76.25 a 107.0
FRA	PLANT	229	83			25.50 a 25.5	**27.25 a** **106.9**	**30.00 a** **117.6**	26.75 a 104.9
Orthogonal comparison				3**	*Mean* Min Max	*39.3* 21.3 71.3	***138.0*** **106.9** **200.0**	***152.1*** **103.5** **235.3**	*141.2* 104.9 211.8

UTC: % green leaf area in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

The mean green leaf area of whole plant increased by 38% at 1,2 l/ha, 52,1% at 1 l/ha and 41,2% at 0,8 l/ha after 2 applications of CA3642. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Slight positive impact on green leaf area has been noted. However, no results after 1 application were available.

BRSNW – Green leaf area – North-East EPPO zone

A total of six North-East EPPO zone trials conducted in Poland have generated data on green leaf area following 2 applications of CA3642 in winter oilseed rape.
In all six trials, the first application was conducted in the autumn and the second application was conducted in the spring.

<u>After two applications, one in autumn and one in spring</u>
Efficacy in terms of green leaf area was assessed on the plant in all six trials. There were two pathogens present in 1 of the trials, and one pathogen present in 5 of the trials.
Across all six trials, green leaf area on the plant increased by 24% following two applications of CA3542 at 1.2 L/ha, which was slightly more effective compared to the 18% increase given by both the 1.0 L and 0.8 L/ha rates.

Overall, there was evidence of a dose response in 3 of the 6 data sets for green leaf area.
The increase of green leaf area induced by CA3642 at the 1.2 L and 1.0 L/ha dose rates was statistically significant compared to the untreated control in 3 of the 6 data sets.

Table 3.2-246: Minimum effective dose of CA3642 assessed as green leaf area in winter oilseed rape – North-East EPPO zone

Country	Part Rated	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha
POL	PLANT	242	55			75.0 e 75.0	**96.3 a** **128.4**	**91.3 abc** **121.7**	83.8 cd 111.7
POL	PLANT	244	39			75.0 d 75.0	**93.8 a** **125.1**	**88.8 ab** **118.4**	83.8 bc 111.7
POL	PLANT	271	61			75.0 d 75.0	**100.0 a** **133.3**	**90.0 bc** **120.0**	86.3 c 115.1
POL	PLANT	269	62			65.0 a	**70.0 a**	**70.0 a**	70.0 a

						65.0	**107.7**	**107.7**	107.7
POL	PLANT	268	62			65.0 a 65.0	**70.0 a** **107.7**	**70.0 a** **107.7**	70.0 a 107.7
POL	PLANT	256	50			15.0 b 15.0	**21.3 ab** **142.0**	**20.0 ab** **133.3**	23.8 a 158.7
Mean efficacy				6**	*Mean* Min Max	*61.7* 15.0 75.0	***124.0*** **107.7** **142.0**	***118.1*** **107.7** **133.3**	*118.8* 107.7 158.7

UTC: % green leaf area in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

The mean green leaf area of whole plant increased by 24% at 1,2 l/ha, 18,1% at 1 l/ha and 18,8% at 0,8 l/ha after 2 applications of CA3642. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted. However, no results after 1 application were available.

BRSNW – Green leaf area – South-East EPPO zone

A total of nine South-East EPPO zone trials (5 trials in Hungary and 4 trials in Romania) have generated data on green leaf area following 2 applications of CA3642 in winter oilseed rape.
In all nine trials, the first application was conducted in the autumn and the second application was conducted in the spring.

<u>After two applications, one in autumn and one in spring</u>
Efficacy in terms of green leaf area was assessed on the plant in all nine trials. There were three pathogens present in one of the trials, two pathogens present in 2 of the trials, and one pathogen present in six of the trials.
Across all nine trials, there was a dose response in green leaf area on the plant with an increase of 153% following two applications of CA3542 at 1.2 L/ha, 117% at 1.0 L/ha and 71% at 0.8 L/ha.

Overall, there was evidence of a dose response in 4 of the 9 data sets for green leaf area.
The increase of green leaf area induced by CA3642 at the 1.2 L and 1.0 L/ha dose rates was statistically significant compared to the untreated control in 7 and 6 of the 9 data sets respectively.

Table 3.2-247: Minimum effective dose of CA3642 assessed as green leaf area in winter oilseed rape – South-East EPPO zone

Country	Part Rated	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 300 g/L SC		
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha + 120 g PTZ/ha
HUN	PLANT	217	62			10.0 b 10.0	**25.0 a** **250.0**	**10.0 b** **100.0**	10.0 b 100.0
HUN	PLANT	232	47			12.5 a 12.5	**17.5 a** **140.0**	**23.8 a** **190.4**	12.5 a 100.0
HUN	PLANT	264	79			2.5 a 2.5	**5.0 a** **200.0**	**5.0 a** **200.0**	2.5 a 100.0
HUN	PLANT	257	62			10.0 d 10.0	**21.3 c** **213.0**	**20.0 c** **200.0**	10.0 d 100.0
HUN	PLANT	251	54			5.0 e 5.0	**30.0 a** **600.0**	**20.0 b** **400.0**	17.5 bc 350.0
ROU	PLANT	226	41			72.5 b 72.5	**100.0 a** **137.9**	**100.0 a** **137.9**	96.3 a 132.8
ROU	PLANT	226	41			73.8 b 73.8	**100.0 a** **135.5**	**100.0 a** **135.5**	96.3 a 130.5

ROU	PLANT	231	48			23.8 f 23.8	**68.3 a** **287.0**	**65.0 ab** **273.1**	57.8 cd 242.9
ROU	PLANT	236	49			20.5 f 20.5	**63.8 a** **311.2**	**65.0 a** **317.1**	58.8 bc 286.8
Mean efficacy				9**	*Mean* Min Max	*25.6* 2.5 73.8	***252.7*** **135.5** **600.0**	***217.1*** **100.0** **400.0**	*171.4* 100.0 350.0

UTC: % green leaf area in untreated control at assessment date
**In trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

The mean green leaf area of whole plant increased by 152,7% at 1,2 l/ha, 117,1% at 1 l/ha and 71,4% at 0,8 l/ha after 2 applications of CA3642. Significant higher increase has been noted at dose rates of 1-1,2 l/ha in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted. However, no results after 1 application were available.

BRSNW - Summary and conclusions on the minimum effective dose

On winter oilseed rape, six fungal diseases were assessed in a total of 98 trials across three EPPO zones. Disease severity was assessed and analysed on the leaves, pods and stems, with some data on the roots. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

An overall summary of the efficacy data used to support minimum effective dose is presented for 2 spring applications in Table 3.2-228 and for one application in autumn plus one application in spring in Table 3.2-249.
Overall, across the three EPPO zones and all diseases, a dose rate response was generally observed for higher disease control with the higher dose rates following two applications in the spring; the rates of 1.2 L and 1.0 L/ha generally gave better control compared to the rate of 0.8 L/ha with statistically significant differences in many cases. The higher rates are needed particularly for the useful control of SCLESC.
The 1.2 L rate was required to give maximum control that persisted for longer, compared to the lower rates, when CA3642 was applied in the autumn and then again in the spring.

While there was a slight dose response in terms of Green Leaf Area (GLA) in the North-East EPPO zone trials and a clear dose response in the South-East EPPO zone, there was no similar trend in the Maritime climatic zone trials. This may be due to the extended length of time that leaves remain green in wetter Maritime areas, and also that the overall differences between the dose rates in terms of efficacy across Maritime zone trials were generally shallower due to lower control in many cases.
Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

While no data are presented from trials conducted on spring oilseed rape, it is considered that all data generated from 2 spring applications of CA3642 in winter oilseed rape crops is fully extrapolatable and fully supportive to the spring crop, as the proposed treatment is conducted in spring at a time when all oilseed rape crops are vulnerable to disease development, depending on the prevailing conditions. The Applicant therefore proposes that data generated in winter oilseed rape is extrapolated to spring oilseed rape thereby fully supporting label claims for all oilseed rape crops.

Therefore, a minimum effective dose rate of 1.0-1.2 L/ha is proposed for CA3642 on oilseed rape in each of the relevant EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

Considering all elements presented in the previous sections of each disease, CA3642 at 1.0-1.2 L/ha is the minimum effective dose to control a range of fungal diseases on oilseed rape.

Table 3.2-248: Overall summary – Efficacy of CA3642 after 2 spring applications at different dose rates in in winter oilseed rape

Disease	**Part rated**	**EPPO zone**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
						Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
ALTEBA	Leaf early	North-East	43	21	1	Mean	*14.7*	**96.6**	**95.2**	91.2
		South-East	35-56	14-28	3	Mean	*11.1*	**89.6**	**81.7**	75.7
						Min	*9.0*	82.1	75.8	70.5
						Max	*14.8*	95.5	90.5	84.3
	Leaf late	Maritime	95-102	72-76	3	Mean	*16.8*	**76.2**	**76.4**	75.8
						Min	*6.6*	28.7	29.3	27.4
						Max	*33.7*	100.0	100.0	100.0
		North-East	58-81	36-50	3	Mean	*11.1*	**81.0**	**79.1**	69.1
						Min	*5.4*	50.0	50.0	57.4
						Max	*20.3*	97.0	95.1	76.4
		South-East	60-77	39-56	4	Mean	*14.9*	**91.1**	**85.9**	78.9
						Min	*10.4*	86.8	74.2	67.1
						Max	*21.9*	96.6	94.1	83.1
	Pod	Maritime	94-102	55-76	3	Mean	*26.0*	**92.0**	**91.7**	83.3
						Min	*15.4*	76.0	75.0	50.9
						Max	*39.8*	100.0	100.0	100.0
		North-East	58-84	36-54	3	Mean	*10.7*	**91.0**	**87.6**	79.8
						Min	*5.2*	80.8	75.0	64.3
						Max	*21.3*	97.7	94.8	90.6
		South-East	60-81	37-56	5	Mean	*13.0*	**92.3**	**86.8**	82.9
						Min	*5.8*	76.3	70.6	61.9
						Max	*32.0*	100.0	100.0	100.0
	Stem early	South-East	56	21	1	Mean	7.2	**94.1**	**90.8**	84.9
	Stem mid	North-East	81-85	48-56	4	Mean	*7.7*	**93.5**	**92.1**	86.6
						Min	*4.2*	89.5	81.7	73.2
						Max	*10.8*	97.2	97.2	94.4
		South-East	60-77	39-56	2	Mean	*8.6*	**93.3**	**88.5**	70.6
						Min	*6.5*	89.7	83.2	66.2
						Max	*10.7*	96.9	93.8	75.1
BOTRCI	Leaf early	South-East	43-50	21	2	Mean	*10.1*	**48.6**	**45.9**	41.6
						Min	*8.1*	39.2	37.5	37.5
						Max	*12.0*	58.0	54.3	45.7
	Leaf late	Maritime	80	44	1	Mean	*8.9*	**41.4**	**39.9**	36.5
	Pod	Maritime	97	72	1	Mean	*9.1*	**35.0**	**35.4**	35.9
		North-East	84	54	1	Mean	*13.5*	**88.1**	**87.4**	84.4

Disease	Part rated	EPPO zone	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
						Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
		South-East	66	37	1	Mean	8.3	**41.0**	**41.0**	39.8
	Stem late	Maritime	93	58	1	Mean	*21.7*	**59.8**	**46.5**	
		North-East	73-84	52-56	4	Mean Min Max	*20.8* *8.4* *30.4*	**86.5** 80.5 92.9	**84.9** 78.5 95.4	84.3 74.5 89.1
ERYSCR	Leaf early	South-East	35-59	14-28	6	Mean Min Max	*19.5* *5.1* *50.0*	**93.4** 85.7 100.0	**90.5** 80.6 100.0	86.8 79.3 100.0
	Leaf mid	Maritime	80	59	1	Mean	*30.1*	**66.4**	**65.5**	33.4
		South-East	51-77	30-39	6	Mean Min Max	*37.2* *19.8* *95.5*	**93.4** 86.6 100.0	**91.1** 85.7 100.0	85.1 73.8 100.0
	Leaf late	South-East	67-77	46-60	6	Mean Min Max	*47.6* *24.5* *70.0*	**91.2** 85.7 95.6	**88.2** 85.7 91.7	74.6 42.9 91.7
	Pod	South-East	60-84	38-53	11	Mean Min Max	*17.5* *1.7* *60.0*	**81.0** 16.7 100.0	**78.1** 16.7 100.0	68.6 16.7 100.0
	Stem early	South-East	59	21	1	Mean	*11.2*	**92.8**	**87.3**	81.5
ERYSCR	Stem late	North-East	59-77	36-57	11***	Mean Min Max	*29.7* *8.4* *88.8*	**85.6** **40.0** **99.1**	**81.8** **40.0** **98.6**	71.3 40.0 98.2
LEPTMA	Leaf early	Maritime	49	21	1	Mean	*4.5*	**100.0**	**100.0**	100.0
		North-East	43-44	21	1	*Mean*	*8.4*	**98.5**	**98.2**	94.3
	Leaf late	Maritime	67	39	1	Mean	*5.8*	**100.0**	**100.0**	100.0
		North-East	58	36	1	Mean	*8.0*	**98.8**	**96.3**	90.0
		South-East	57-67	32-46	2	Mean Min Max	*32.7* *28.4* *37.0*	**90.9** 84.5 97.3	**88.3** 79.9 96.8	81.7 66.5 96.8
	Pod	North-East	58	36	1	Mean	*10.7*	**97.2**	**95.3**	88.8
	Stem early	Maritime	52	21	1	Mean	*4.5*	**61.0**	**64.1**	64.3
	Stem	Maritime	69-93	42-58	2	Mean	*15.2*	**63.7**	**63.3**	43.1

Disease	**Part rated**	**EPPO zone**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
						Rate		**1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha**
	late					Min Max	*5.7* *24.7*	58.7 68.7	55.3 71.3	22.2 64.0
		North-East	68-84	24-54	2	Mean Min Max	*9.2* *8.9* *9.4*	**91.4** 86.2 96.6	**83.6** 83.0 84.3	82.6 79.8 85.4
		South-East	79-81	55-56	2	Mean Min Max	*31.3* *26.3* *36.2*	**81.5** 66.5 96.4	**77.0** 62.4 91.7	84.5 73.4 95.6
PYRPBR	Leaf early	Maritime	59	21	1	Mean	*18.4*	**22.5**	**31.1**	18.5
		South-East	42-44	20-22	2	Mean Min Max	*6.3* *6.2* *6.4*	**50.1** 42.2 58.1	**43.7** 42.2 45.2	
	Pod	Maritime	88	50	1	Mean	*13.9*	**56.2**	**55.0**	45.6
	Stem late	Maritime	95	57	1	Mean	*27.9*	**50.3**	**50.5**	35.4
SCLESC	Leaf early	Maritime	49	22	1	Mean	8.0	**82.5**	**80.6**	76.8
		South-East	42-59	21	3	*Mean* Min Max	*15.3* *7.1* *19.4*	***86.1*** 79.8 96.8	***80.7*** 73.0 91.8	*69.1* 64.5 75.6
	Leaf late	Maritime	59-68	35-42	2	Mean Min Max	*8.6* *7.7* *9.5*	**61.9** 45.2 78.5	**61.6** 51.5 71.6	33.2 28.3 38.2
		South-East	60-63	36-39	3	Mean Min Max	*18.7* *13.3* *21.4*	**69.6** 57.9 75.7	**72.2** 71.0 73.4	62.1 57.9 65.9
	Pod	Maritime	78	56	1	Mean	*6.0*	***83.3***	***83.3***	*66.7*
		North-East	83	54	1	Mean	*7.9*	**94.9**	**88.6**	86.1
		South-East	60-70	39-50	5	Mean Min Max	*14.5* *5.3* *33.0*	**78.1** 43.0 96.3	**76.1** 47.0 96.2	75.9 51.0 94.3
	Root	South-East	60-80	39-42	3	*Mean* Min Max	*5.1* *4.9* *5.2*	**99.3** 97.8 100.0	**98.4** 95.1 100.0	98.6 95.9 100.0
SCLESC	Stem early	North-East	42-50	21	2	Mean Min Max	*7.2* *6.6* *7.8*	**89.0** 87.2 90.9	**83.0** 78.2 87.9	80.4 78.8 82.1
		South-East	42-59	21	3	Mean Min Max	*9.8* *6.8* *12.9*	**90.5** 86.1 97.6	**82.3** 68.3 92.7	72.4 62.8 77.5
	Stem	Maritime	63-68	36-42	3	Mean	*12.8*	**84.4**	**78.8**	72.0

Disease	Part rated	EPPO zone	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
						Rate		1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha
	mid					Min	*6.3*	71.2	66.7	37.9
						Max	*16.5*	96.3	99.4	98.2
		North-East	80-84	33-38	2	Mean	*14.1*	**72.2**	**67.0**	58.2
						Min	*12.9*	65.9	45.7	29.5
						Max	*15.3*	78.4	88.2	86.9
	Stem late	Maritime	69-102	51-76	5	Mean	*14.5*	**87.9**	**86.9**	86.1
						Min	*4.3*	69.8	61.7	54.3
						Max	*26.9*	100.0	100.0	100.0
		North-East	76-86	47-54	5	Mean	*10.7*	**91.2**	**86.2**	82.6
						Min	*5.0*	85.5	77.9	71.8
						Max	*23.1*	98.0	91.3	94.0
		South-East	60-81	39-57	5	Mean	*12.5*	**77.4**	**80.6**	64.0
						Min	*5.6*	55.5	75.0	33.1
						Max	*24.7*	92.9	87.5	82.1
	Stem very late	Maritime	109-112	73-77	3	Mean	27.2	**79.2**	**68.3**	54.5
						Min	13.9	73.2	56.2	46.4
						Max	53.1	82.8	77.4	69.1

Table 3.2-249: Overall summary – Efficacy of CA3642 after 2 applications, one in autumn and one in spring, at different dose rates in in winter oilseed rape

Disease	Part rated	EPPO zone	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		
						Rate		1.2 l/ha 180 g AZX/ha+ 180 g TZ/ha	1.0 l/ha 150 g AZX/ha+ 150 g PTZ/ha	0.8 l/ha 120 g AZX/ha+ 120 g PTZ/ha
ALTEBA	Pod	North-East	256	50	1	Mean	*6.8*	**88.2**	**75.0**	72.1
		South-East	251-264	54-79	2	*Mean*	*20.2*	***73.0***	***66.0***	*64.3*
						Min	*10.4*	57.7	65.4	58.3
						Max	*30.0*	88.3	66.7	70.2
	Stem late	North-East	256	50	1	Mean	*5.0*	**88.0**	**82.0**	62.0
ERYSCR	Leaf mid	Maritime	117	42	1	Mean	*26.7*	**35.3**	**34.9**	29.5
		South-East	191-231	31-36	3	Mean	38.3	**75.7**	**74.5**	44.4
						Min	30.0	47.6	52.2	33.3
						Max	55.0	93.7	86.7	50.0
	Leaf late	South-East	202-257	47-62	3**	Mean	37.3	**41.1**	**33.4**	20.2
						Min	11.8	20.0	20.0	0.0
						Max	50.0	52.4	60.2	40.7
	Pod	Maritime	195	60	1	Mean	*17.0*	**0.0**	**4.9**	0.0
		South-East	217-257	48-62	3	Mean	36.6	**47.4**	**23.5**	11.7
						Min	9.7	20.0	0.0	0.0
						Max	50.0	72.2	50.5	35.1

Disease	**Part rated**	**EPPO zone**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		
						Rate		**1.2 l/ha** **180 g AZX/ha+ 180 g TZ/ha**	**1.0 l/ha** **150 g AZX/ha+ 150 g PTZ/ha**	**0.8 l/ha** **120 g AZX/ha+ 120 g PTZ/ha**
	Stem late	Maritime	195	60	1	Mean	*14.0*	**15.6**	**11.1**	9.5
		South-East	217-257	48-62	3	Mean	36.8	**40.8**	**29.3**	19.4
						Min	10.3	20.0	0.0	0.0
						Max	50.0	82.5	68.0	58.3
LEPTMA	Leaf early	Maritime	167	18	1	Mean	*5.0*	**87.8**	**75.0**	73.4
		South-East	200	15	3	Mean	*11.2*	**85.8**	**89.5**	84.6
						Min	*8.7*	80.5	84.4	84.0
						Max	*12.8*	89.6	94.3	85.1
	Leaf late	South-East	236	49	1	Mean	*5.6*	**90.4**	**87.2**	80.6
	Pod	North-East	256	50	1	Mean	*9.4*	**91.5**	**89.4**	83.0
		South-East	226	41	2	Mean	*6.3*	**93.6**	**92.8**	90.4
						Min	*6.2*	93.5	92.1	90.3
						Max	*6.3*	93.7	93.5	90.5
	Stem early	Maritime	167	18	1	Mean	*4.2*	**73.9**	**70.9**	64.9
		South-East	200	15	2	Mean	*6.2*	**93.0**	**91.0**	87.7
						Min	*6.0*	91.2	88.0	84.4
						Max	*6.3*	94.8	94.0	91.1
	Stem mid	South-East	226	41	2	*Mean*	8.5	***89.7***	***87.5***	*85.8*
						Min	7.5	88.0	86.7	85.3
						Max	9.4	91.5	88.3	86.2
	Stem late	Maritime	209	71	1	Mean	*17.5*	**63.2**	**69.5**	59.0
		North-East	256	60	1	Mean	*6.8*	**91.2**	**72.1**	67.6
		South-East	251-264	54-79	3	Mean	*57.9*	**63.4**	**48.9**	41.0
						Min	*43.6*	48.9	19.7	30.2
						Max	*76.4*	83.6	70.3	57.7
PYRPBR	Leaf early	Maritime	149-160	14	2	Mean	*13.4*	**39.9**	**35.2**	32.4
						Min	*12.5*	31.0	16.5	25.9
						Max	*14.3*	48.9	53.8	39.0
	Leaf mid	Maritime	177	42	1	Mean	*16.9*	**37.4**	**26.6**	31.7
	Pod	Maritime	220	74	1	Mean	*9.9*	**2.1**	**10.6**	15.1
	Stem late	Maritime	195-229	60-83	2	Mean	*10.9*	**71.2**	**59.2**	63.5
						Min	*6.5*	64.3	55.4	46.6
						Max	*15.3*	78.2	63.0	80.4
SCLESC	Stem late	Maritime	195-229	60-83	3	Mean	13.1	**93.5**	**93.3**	92.0
						Min	6.4	90.7	91.9	89.0
						Max	18.2	97.8	95.3	96.4
	Stem very late	Maritime	266-286	78-84		Mean	28.3	**69.3**	**68.0**	51.8
						Min	23.0	51.4	54.9	23.6
						Max	32.8	82.3	76.6	66.4

Summary and conclusions on the minimum effective dose

Overall, the minimum effective dose was assessed in 269 trials across three EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2 and 3. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

Overall, across the three EPPO zones and for a majority of trials of and diseases, a dose rate response was observed for higher disease control with higher dose rates. In particular, the rates of 1.2-1.4 L/ha generally gave significantly better control compared to the rate of 1.0 L/ha. In many of the dataset there was no statistical differences between the dose rates of 1.2 L/ha or 1.4 L/ha, however it was frequently observed that where disease severity was higher, a significant benefit was derived from increasing the dose rate from 1.2 to 1.4 L/ha while in circumstances, the 1.0 L/ha dose rate was sufficient to give comparable disease control. Due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate may be deemed more appropriate and should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In addition, the data demonstrates overall similar effects for the targeted diseases regardless of EPPO zone. Similarly, the same dose rate trends were observed for improving green leaf area in situations of infection from a single pathogen or in cases of disease complexes. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling and therefore improved yield quantity and quality.

In this dossier data presented for minimum effective dose is primarily from assessments where 2 applications of the test product were made. However, a few assessments done before the second application are available, confirming the findings that the most reliable control is achieved after two applications depending on the disease pressure. According to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions.

Therefore, a minimum effective dose rate of 1.0 L/ha and 1.2-1.4 L/ha is proposed for CA3642 as given in the GAP in each of the EPPO zones, in order to provide optimum efficacy in relation to disease occurrence.

3.2.3 Efficacy tests (KCP 6.2)

In this part of the draft Registration Report, trials carried out from 2019 to 2021 are presented to support the efficacy claims of the fungicide CA3642 against a range of foliar and ear diseases on wheat and related crops, and on oilseed rape in the Central Registration zone.

Valid trials used for efficacy evaluation comprised 104 for winter wheat (TRZAW), 1 for spelt (TRZSP), 9 for durum wheat (TRZDU/S), 14 for triticale (TTLWI), 11 for rye (SECCW), 11 for oats (AVESS), 109 for winter barley (HORVW), 79 for spring barley (HORVS) and 98 for oilseed rape (BRSNN).
An additional 2 trials in rye, 7 trials in spring barley and 14 trials in oilseed rape and described in the

materials and methods were used for phytotoxicity assessments in Section 3.4.

The trials were carried out to support the efficacy claim of CA3642 against several diseases: *Alternaria brassicae* (ALTEBA), *Botrytis cinerea* (BOTRCI), *Blumeria graminis* / *Blumeria graminis* f. sp. *tritici* / *Blumeria graminis f. sp. hordei* (ERYSGR / ERYSGT / ERYSGH), *Erysiphe graminis f. sp. avenae* (ERYSGA), *Erysiphe cruciferarum* (ERYSCR), *Fusarium* spp. (FUSACU *Fusarium culmorum* / GIBBZE *Fusarium graminearum*), *Leptosphaeria maculans* (LEPTMA), *Oculimacula acuformis (*PSDCHA), *Puccinia recondita* / *Puccinia triticina* / *Puccinia recondita* f. sp. *recondita* (PUCCRE / PUCCRT / PUCCRR), *Puccinia coronata (var. avenae) (*PUCCCA/PUCCCO), *Puccinia hordei* (PUCCHD), *Puccinia striiformis* / *Puccinia striiformis* f. sp. *tritici* (PUCCST / PUCCSI), *Pyrenophora tritici-repentis* (PYRNTR), *Pyrenophora chaetomioides* (PYRNAV), *Pyrenophora teres* (PYRNTE), *Pyrenopeziza brassicae (*PYRPBR), *Rhynchosporium secalis* (RHYNSE), *Ramularia collo-cygni* (RAMUCC), *Sclerotinia sclerotiorum* (SCLESC) and *Zymoseptoria tritici* (SEPTTR).

Material and Methods

In this section, the general methodology adopted in the efficacy trials reported in this dossier is summarized for all trials carried out. The general methodology is also valid for the preliminary and minimum effective dose tests. If different, specific material and methods apply, this is described in the respective chapters.

Table 3.2-14 in the introduction presents the number of efficacy results summarized in this dossier divided by crop, target and EPPO zone.

A summary of information on trial methodology for efficacy trials is available in the tables below. Detailed information is available in Appendix 4 and in the individual trial reports.

<u>Winter wheat (TRZAW)</u>

Table 3.2-250: Details on trial methodology, efficacy trials used for efficacy evaluation - TRZAW

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials” PP 1/239 (2) “Dose expression for plant protection products” PP 1/214 (3) “Principles of acceptable efficacy”
	Specific guidelines	PP 1/26 (4) “Foliar and ear diseases on cereals
Experimental design	Plot design	RACOBL (104)
	Plot size	15 - 36 m²
	Number of replications	4 (104)
Crop	Trials per crop	winter wheat (104) MAR: 41 trials NE: 38 trials SE: 25 trials
	Varieties per crop	MAR: Akteur, Apache (2), Basset, Belepi (2), Bennington (2), Boregar, Butterfly, Chevron, Claire, Elation, Es Cesario, Expert, Firefly, Gleam, Gravity (2), Kws Santiago, Monopol (3), Oregrain (2), Revelation, Ritmo, Rubisko, Siskin, Skyfall (6), Skyscraper, Su Tobak, Tobak (3), Winner NE: Arkadia (3), Artist, Banderola (2), Delawar, Edvins, Emil (2), Etana (3), Etna, Euforia, Famulus, Hondia (2), Jantarka, Kilimandzaro, Markiza, Medalistka, Ozon (5), Skagen (7) SE: Antonius, Avenue, Bernstein, Capo, Complice, Emilio, Exotic, Falado, Farmeur, GK Csillag, Glosa (2), Izalko, Izvor, Lennox, Levante, Midas, Miranda (2), MV Ikva, MV Nádor, PG 102, Rebell, Sorialis, Spontan
	Sowing period	MAR: 20. September – 30. November NE: 1. September – 10. October

		SE: 4. October – 12. November
Application	Crop stage (BBCH) at application	MAR: BBCH 30-41 NE: BBCH 30-39 SE: BBCH 30-35
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (104 trials) MAR: 15-37 days NE: 14-53 days SE: 15-41 days
	Spray volumes	MAR: 150 - 500 NE: 200 - 500 SE: 200 - 400
Assessment	Assessment types	pest severity %, pest incidence %, green leaf area %
	Assessment dates	14-18 DAT, 25-30 DAT, 42-48 DAT

Five trials were excluded from the efficacy evaluation on wheat. Further information can be found in the table below.

Table 3.2-251: Trials excluded from efficacy evaluation on TRZAW

Reason for excluding from efficacy	**Considered in Point**
Hot and dry weather was unfavourable to fungal growth. Therefore disease pressure was low making the trial unreliable.	Not considered
Hot and dry weather, unfavourable to fungal growth. The infection level never overpassed 5% of severity.	Not considered
Reference product had an unexpected behavior.	Not considered
Pest severity was very low, therefore the trial is not valid.	Not considered
Pest pressure was low due to dry weather.	Not considered

Spelt (TRZSP)

Table 3.2-252: Details on trial methodology, efficacy trials used for efficacy evaluation – TRZSP

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials” PP 1/239 (2) “Dose expression for plant protection products” PP 1/214 (3) “Principles of acceptable efficacy”
	Specific guidelines	PP 1/26 (4) “Foliar and ear diseases on cereals”
Experimental design	Plot design	RACOBL (1)
	Plot size	20 m²
	Number of replications	4 (1)
Crop	Trials per crop	NE: 1 trial
	Varieties per crop	NE: Wirtas
	Sowing period	NE: 01. April
Application	Crop stage (BBCH) at application	NE: BBCH 31
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (1 trial) NE: 18 days
	Spray volumes	NE: 300 L/ha

Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	16-17 DAT, 24-33 DAT, 47-88 DAT

One trial was excluded from the efficacy evaluation in Spelt. Detailed information on trial methodology for this efficacy trial is available in Table 3.2-253

Table 3.2-253: Details on trial methodology, efficacy trials not used for efficacy evaluation – TRZSP

Guidelines	General guidelines	PP 1/135 (4) "Phytotoxicity assessment" PP 1/152 (4) "Design and analysis of efficacy evaluation trials" PP 1/181 (4) "Conduct and reporting of efficacy evaluation trials" PP 1/239 (2) "Dose expression for plant protection products" PP 1/214 (3) "Principles of acceptable efficacy"
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (1)
	Plot size	21 m²
	Number of replications	4 (1)
Crop	Trials per crop	NE: 1 trial
	Varieties per crop	NE: Wirtas
	Sowing period	NE: 09. April
Application	Crop stage (BBCH) at application	NE: BBCH 32
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (1 trial) NE: 18 days
	Spray volumes	NE: 300 L/ha
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	16-17 DAT, 24-33 DAT, 47-88 DAT

Durum wheat (TRZDU)

Table 3.2-254: Details on trial methodology, efficacy trials used for efficacy evaluation - TRZDU (winter sown)

Guidelines	General guidelines	PP 1/152 "Design and analysis of efficacy evaluation trials" PP 1/181 "Conduct and reporting of efficacy evaluation trials including GEP" PP 1/239 "Dose expression for plant protection products" PP 1/135 "Phytotoxicity assessment" PP 1/214 "Principles of acceptable efficacy""
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (8)
	Plot size	20-25 m²
	Number of replications	4 (8)
Crop	Trials per crop	Durum wheat (8) MAR: 5 SE: 3
	Varieties per crop	Durum wheat MAR: Wintergold (3), Voilur, Anvergur SE: Atoudur, Wintergold (2)
	Sowing period	Durum wheat MAR: 05. October – 08. November

		SE: 05. October – 26. October
Application	Crop stage (BBCH)* at application	MAR: Appl. A: BBCH 31-37; Appl. B: 45-55 SE: Appl. A: BBCH 31; Appl. B: 39-59
	Timing Pest stage at application (1)	starting at early infestation
	Number of applications Intervals between applications	2 (8 trials) MAR: 14-43 days SE: 24-28 days
	Spray volumes	MAR: Appl. A: 100-400 l/ha; Appl. B: 100-400 l/ha SE: Appl. A: 100-400 l/ha; Appl. B: 100-400 l/ha
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	6 DAT, 15-16 DAT, 19-24 DAT, 29-37 DAT, 55-87

Table 3.2-255: Details on trial methodology, efficacy trials used for efficacy evaluation - TRZDU (spring sown)

Guidelines	General guidelines	PP 1/135 (4) "Phytotoxicity assessment" PP 1/152 (4) "Design and analysis of efficacy evaluation trials" PP 1/181 (4) "Conduct and reporting of efficacy evaluation trials" PP 1/239 (2) "Dose expression for plant protection products" PP 1/214 (3) "Principles of acceptable efficacy"
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (1)
	Plot size	21 m²
	Number of replications	4 (1)
Crop	Trials per crop	Wheat durum-spring (1) MAR: 1 trial
	Varieties per crop	MAR: Duramonte
	Sowing period	MAR: 2 March
Application	Crop stage (BBCH) at application	MAR: Appl. A: BBCH 30-37; Appl. B: 39-59
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (1 trial) MAR: 17 days
	Spray volumes	MAR: 200
Assessment	Assessment types	pest severity %
	Assessment dates	14 DAT, 28 DAT, 39 DAT

Triticale (TTLWI)

Table 3.2-256: Details on trial methodology, efficacy trials used for efficacy evaluation - TTLWI

Guidelines	General guidelines	PP 1/135 (4) "Phytotoxicity assessment" PP 1/152 (4) "Design and analysis of efficacy evaluation trials" PP 1/181 (4) "Conduct and reporting of efficacy evaluation trials" PP 1/239 (2) "Dose expression for plant protection products" PP 1/214 (3) "Principles of acceptable efficacy"
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (14)
	Plot size	19.8 – 22.5 m²

	Number of replications	4 (14)
Crop	Trials per crop	winter triticale (14) MAR: 7 trials NE: 2 trials SE: 5 trials
	Varieties per crop	MAR: Lombardo, Talentro (2), Triskell, Temuco, Lombardo, Brehat NE: Rotondo, Orinoko SE: Haiduc (2), Gorun, Gk Szemes, *farmer's source (unknown)*
	Sowing period	MAR: 22. September – 10. December NE: 14. September SE: 4. October – 3. November
Application	Crop stage (BBCH) at application	MAR: BBCH 30-37 NE: BBCH 30-32 SE: BBCH 31-37
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (14 trials) MAR: 15-32 days NE: 34-47 days SE: 17-28 days
	Spray volumes	MAR: 200 L/ha NE: 200 – 250 L/ha SE: 200 – 300 L/ha
Assessment	Assessment types	pest severity %, pest incidence %, green leaf area %
	Assessment dates	14 - 15 DAA; 14 - 15 DAB, 27 - 34 DAB, 41 - 45 DAB

Rye (SECCW)

Table 3.2-257: Details on trial methodology, efficacy trials used for efficacy evaluation – SECCW

Guidelines	General guidelines	PP 1/135 (4) "Phytotoxicity assessment" PP 1/152 (4) "Design and analysis of efficacy evaluation trials" PP 1/181 (4) "Conduct and reporting of efficacy evaluation trials" PP 1/239 (2) "Dose expression for plant protection products" PP 1/214 (3) "Principles of acceptable efficacy"
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (11)
	Plot size	15-36 m²
	Number of replications	4 (11)
Crop	Trials per crop	winter rye (11) MAR: 5 trials NE: 3 trials SE: 3 trials
	Varieties per crop	MAR: Benito, Binntto, Ducato, Danielo, Mephisto NE: Dańkowskie Rubin, KWS Serafino, TUR F1 SE: Binnto, Dankowskie Diament, SUCEVEANA
	Sowing period	MAR: 14. September – 16. October NE: 22. August – 22. October SE: 25. September – 05. October
Application	Crop stage (BBCH) at application	MAR: Appl. A: BBCH 31-37; Appl. B: 42-59 NE: Appl. A: BBCH 31-37; Appl. B: 51-57 SE: Appl. A: BBCH 30-37; Appl. B: 41-59
	Timing	starting at early infestation
	Number of applications	2 (11 trials)

	Intervals between applications	MAR: 14-35 days NE: 15-36 days SE: 19-30 days
	Spray volumes	MAR: 150-200 NE: 200-300 SE: 200-300
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	0 DAT, 14 – 19 DAT, 28 - 35 DAT, 47 - 57 DAT

Two trials from a total of 15 conducted trials were excluded from the efficacy evaluation in winter rye. Further information can be found below. Detailed information on trial methodology for these efficacy trials is available in Table 3.2-259.

Table 3.2-258: Trials excluded from efficacy evaluation on SECCW

Reason for excluding from efficacy	**Considered in Point**
SEPTTR was not observed in one trial and symptoms of RHYNSE were just on lower leaf levels and vanished completely during the trial period	3.4.1
SEPTTR and PUCCRR were assessed, but the infection level never overpassed 5% of severity throughout the trial period. Therefore, no reliable conclusions can be drawn from this trial	3.4.1

Table 3.2-259: Details on trial methodology, efficacy trials excluded from efficacy evaluation - SECCW

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials” PP 1/239 (2) “Dose expression for plant protection products” PP 1/214 (3) “Principles of acceptable efficacy”
	Specific guidelines	PP 1/26 (4) “Foliar and ear diseases on cereals”
Experimental design	Plot design	RACOBL (2)
	Plot size	20 – 22.75 m²
	Number of replications	4 (2)
Crop	Trials per crop	winter rye (2) MAR: 1 trial NE: 1 trial
	Varieties per crop	MAR: BENDIX NE: Tur
	Sowing period	MAR: 13. October NE: 15. September
Application	Crop stage (BBCH) at application	MAR: Appl. A: BBCH 32; Appl. B: 55 NE: Appl. A: BBCH 31; Appl. B: 59
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (2 trials) MAR: 22 days NE: 36 days
	Spray volumes	MAR: 200 NE: 300
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	0 DAT, 15 DAT, 22-36 DAT, 36-51 DAT, 60-65 DAT

Oats (AVESS)

Table 3.2-260: Details on trial methodology, efficacy trials used for efficacy evaluation - AVESS

Guidelines	General guidelines	PP 1/135 (4) "Phytotoxicity assessment" PP 1/152 (4) "Design and analysis of efficacy evaluation trials" PP 1/181 (4) "Conduct and reporting of efficacy evaluation trials" PP 1/239 (2) "Dose expression for plant protection products" PP 1/214 (3) "Principles of acceptable efficacy"
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (11),
	Plot size	15-30 m²
	Number of replications	4 (11)
Crop	Trials per crop	Oats (11) MAR: 4 trials NE: 5 trials SE:2 trials
	Varieties per crop	MAR: Prokop (2), Max, Troll NE: Kozak (2), Galant, Edvins, Bingo SE: Prokop, Expreso,
	Sowing period	MAR:26 March – 07 April 2020 NE: 17. September 2018 - 04 May 2020 SE: 20 March 2019 - 9 March 2021
Application	Crop stage (BBCH)* at application	MAR: (BBCH 30 – 38) and (BBCH 55- 67) NE: (BBCH 32 - 37) and (BBCH 55 – 59)) SE: (BBCH 30 – 35) and (BBCH 55)
	Timing Pest stage at application	starting at early infestation
	Number of applications Intervals between applications	2 (11) MAR: 23-29 days later NE: 14 - 25 days later SE: 14-20 days later
	Spray volumes	1st application MAR: 200(4) NE: 200(3), 300(2) SE: 200(2) 2nd applications: MAR: 200(4) NE: 200(3), 300(2) SE: 200(1), 250(1)
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	0 DA-A, -1 DA-A, 13 DA-A, 14 DA-A, 15 DA-A, 17 DA-A, 0 DA-B, 13 DA-B, 14 DA-B, 15 DA-B, 16 DA-B, 17 DA-B, 25 DA-B, 26 DA-B, 28 DA-B, 29 DA-B, 30 DA-B, 33 DA-B, 35 DA-B, 40 DA-B, 45 DA-B, 47 DA-B, 48 DA-B, 49 DA-B, 51 DA-B, 52 DA-B, 54 DA-B, 57 DA-B, 58 DA-B, 59 DA-B, 64 DA-B, 72 DA-B

Two trials were excluded from the efficacy evaluation in AVESS. Further information can be found below. Detailed information on trial methodology for these efficacy trials is available in Table 3.2-262.

Table 3.2-261: Trials excluded from efficacy evaluation on AVESS

Reason for excluding from efficacy	Considered in Point
The weather conditions were unusually dry and hot during the trial period not favoring the development of fungal diseases	Not considered
The weather conditions were dry during the month of June, which did not favour the disease development.	Not considered

Table 3.2-262: Details on trial methodology on trials not used for efficacy evaluation - AVESS

Guidelines	General guidelines	PP 1/135 (4) "Phytotoxicity assessment" PP 1/152 (4) "Design and analysis of efficacy evaluation trials" PP 1/181 (4) "Conduct and reporting of efficacy evaluation trials" PP 1/239 (2) "Dose expression for plant protection products" PP 1/214 (3) "Principles of acceptable efficacy"
	Specific guidelines	PP 1/26 (4) "Foliar and ear diseases on cereals"
Experimental design	Plot design	RACOBL (2),
	Plot size	21-30 m²
	Number of replications	4(2)
Crop	Trials per crop	Oats (2) NE: 1 trials SE:1 trials
	Varieties per crop	NE: Breton SE: MURESEANCA
	Sowing period	NE: 29 March 2019 SE: 12 March 2019
Application	Crop stage (BBCH)* at application	NE: (BBCH 37) and (BBCH 52) SE: (BBCH 55) and (BBCH 76)
	Timing Pest stage at application	starting at early infestation
	Number of applications Intervals between applications	2 (2) NE: 14 days later SE: 21 days later
	Spray volumes	1st application NE: 300(1) SE:250(1) 2nd applications: NE: 300(1) SE:250(1)
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	0 DA-A; 0 DA-B; 14 DA-A; 14 DA-B, 15 DA-B, 21 DA-B, 24 DA- B,

Winter barley (HORVW)

Table 3.2-263: Details on trial methodology, efficacy trials used for efficacy evaluation – HORVW

Guidelines	General guidelines	EPPO PP 1/135(4) EPPO PP 1/152(4) EPPO PP 1/181(4) EPPO PP 1/214(3) EPPO PP 1/239(2)
	Specific guidelines	EPPO PP 1/26(4)
Experimental design	Plot design	Winter barley (109) MAR: RCBD (36) NE: RCBD (44) SE: RCBD (29)
	Plot size	Winter barley (109) MAR: 12-30 m² (36) NE: 12-30 m² (44) SE: 12-30 m² (29)
	Number of replications	Winter barley (109) MAR: 4 (36) NE: 4 (44)

		SE: 4 (29)
Crop	Trials per crop	MAR: 36 NE: 44 SE: 29
	Varieties per crop	MAR: BECKENBAUER, CARAT, Etincel, ETINCELLE, HAWKING, Kingsbarn, KOSMOS, KWS Cassia, KWS JAGUAR, KWS Meridian, KWS Orwell, KWS Wallace, Lomerit, Maltesse, Meridian, ORBIT, Orwell, Rafaela, Sandra, SU Ellen, SU Vireni, Titus, Tonic, Triumf NE: Antonella, Arenia, Concordia, Gloria, HOLMES, Impala, JAKUBUS, KOBUZ, Kosmos, KWS KOSMOS, KWS Tenor, Lomerit, Marisa, Melania, Mercurioo, Meridian, Ordinale, Quadriga, Quantiga, Tenor, Titus, Torerro, Wootan, Zenek SE: ALORA, AMETIST, Antonella, BRAVO, Calypso, CARDINAL, CARO-LINA, ETINCEL, GERHART, GK JUDY, Hanzi, Jup, Kasanova, KH TAS, KWS Meridian, KWS SCALA, LG Triumph, Obzor, SAPHIRA, Saturn, SU ELLEN, SY TEPEE, WENDY
	Sowing period	MAR: 15 September – 20 November NE: 26 August – 07 October SE: 20 September – 01 November
Application	Crop stage (BBCH)* at application	MAR: BBCH 30-37 and BBCH 39-61 NE: BBCH 30-37 and BBCH 39-61 SE: BBCH 31-39 and BBCH 41-61
	Timing	starting at early infestation
	Number of applications Intervals between applications	MAR: 2 (14-34 days) NE: 2 (14-49 days) SE: 2 (14-35 days)
	Spray volumes	MAR: 200 - 400 L/ha NE: 200 - 400 L/ha SE: 200 - 400 L/ha
Assessment	Assessment types	pest severity %, green leaf area %
	Assessment dates	7-19 DAT, 20-34 DAT, 35-71 DAT
Other relevant information	e.g. Soil type. pH (in case of soil active substance …)	MAR: calcareous loam, clay, clay loam, clayey silt, loam, loamy sand, loamy silt, sand, sandy clay, sandy loam, silt loam, silty clay, silty clay loam NE: clay sandy loam, loam, loamy fine sand, loamy sand, sandy clay loam, sandy loam, silt loam, silty clay, silty sand SE: clay, clay loam, clay sandy loam, clayey sand, loam, loamy clay, loamy sand, sandy clay loam, sandy silt, silt, silty clay loam
	e.g. Natural / artificial innoculation…	Natural infestation
	e.g. Field / Greenhouse...	Field trials

* BBCH for weeds. pre-emergence. preventive / curative application. insect stage…

Spring barley (HORVS)

Table 3.2-264: Details on trial methodology, efficacy trials used for efficacy evaluation - HORVS

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials” PP 1/239 (2) “Dose expression for plant protection products” PP 1/214 (3) “Principles of acceptable efficacy”
	Specific guidelines	PP 1/26 (4) “Foliar and ear diseases on cereals”
Experimental	Plot design	RACOBL (79)

design	Plot size	12-36 m²
	Number of replications	4 (79)
Crop	Trials per crop	Spring barley HORVS (79) MAR: 25 trials NE: 32 trials SE: 22 trials
	Varieties per crop	MAR: Avalon (2), Beckie , Concerto (2), Grace (2), Kampa, KWS Jessie, Laureate, LG Planet, Marthe, Planet (5), Propino (4), Quench, RGT Planet (3) NE: Abava (3), Ansis, Avalon (1), Avatar, Conchita (2), Ella (4) Luoke (2), Nagradowicki (2), Nokia (2), Planet, RGT Planet (2), Propino, Rufus, Soldo (5), Stratus (3), Teksas SE: Alastro, Aligator (2), Boios (4), Donau, Elektra, Kangoo (2), Maltea, Malz (3), Planet, Pribina (2), Romanita (2), Thuringia, Xandu
	Sowing period	MAR: 20. February – 25. April NE: 14. March – 06. May SE: 20. February – 03. April
Application	Crop stage (BBCH) at application	MAR: Appl. A: BBCH 30-37; Appl. B: 42-65 NE: Appl. A: BBCH 31-37; Appl. B: 45-61 SE: Appl. A: BBCH 31-38; Appl. B: 51-61
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (79 trials) MAR: 8-27 days NE: 12-30 days SE: 13-27 days
	Spray volumes	MAR: 150 L/ha (1 trial), 200 L/ha (22 trials), 250 L/ha (2 trials) NE: 200 L/ha (10 trials), 250 L/ha (8 trials), 300 L/ha (14 trials) SE: 200 L/ha (12 trials), 250 L/ha (4 trials), 300 L/ha (6 trials)
Assessment	Assessment types	pest severity % (all trials), phytotoxicity % (all trials), green leaf area % (20 Maritime trials, 31 NE trials, 22 SE trials), yield and yield quality (13 Maritime trials, 7 NE trials, 12 SE trials)
	Assessment dates	Approximately 7-14 DAA, 0 DA-B, 7-14 DA-B, 21-28 DA-B Harvest

Seven trials were excluded from the efficacy evaluation in spring barley due to low pest severity resulting from unusually dry weather. Further information can be found below. Detailed information on trial methodology for these efficacy trials is available in Appendix 4.

Table 3.2-265: Trials excluded from efficacy evaluation on HORVS

Reason for excluding from efficacy	Considered in Point
The target disease RAMUCC was not observed during the trial period. PYRNTE was assessed at 0 DA-B onwards but the disease pressure was very low: below 1,2% on L1, L2 and L3. In these conditions, the efficacy data cannot be considered as reliable and the harvest was cancelled	3.4.1
The target disease RAMUCC was not observed. PYRNTE was assessed at 0 DA-B onwards but the disease pressure was very low: below 1,0% on L1, L2 and L3. In these conditions, the harvest was cancelled and the data cannot be considered as reliable	3.4.1
PUCCHD was not observed in this trial. PYRNTE was observed at the last assessment and its infection level was 1,2% on L1. Therefore the data should be cautiously taken into account and cannot be considered as reliable.	3.4.1
The target disease PUCCHD was not observed during the trial period. PYRNTE was assessed but its infection level never overpassed 1,3% of severity on L1 and L2. Therefore, even if the disease was evenly spread, no reliable conclusion can be drawn from the efficacy data. This is also why the sponsor cancelled the crop harvest.	3.4.1
Net blotch (Pyrenophora teres) occurred in trial site during this season. At 0 DA-A disease severity on 4th leaf was very low it reached 0.04%. Disease level throughout all season was low. Net blotch severity was lower than 1.0% on assessments at 11 DA-A and 12 DA-B. At the time of last assessment (23 DA-B) disease severity was 2.5% on 3rd leaf and 1.6 % on 2nd leaf. Traces of rust (Puccinia hordei) were	3.4.1

Reason for excluding from efficacy	Considered in Point
observed at last assessment.	
Only few symptoms of PYRNTE were observed at the last assessment (16 DA-B). The level of infection was 1,1% of severity on L1, not allowing to draw reliable conclusions from this trial. Therefore, the harvest was cancelled by the sponsor.	3.4.1
The first symptoms of PYRNTE were assessed at 0 DA-B. However its level of infection never overpassed 1,3% of severity on L1, L2 and L3 during the trial period. Therefore, even if the products showed visible efficacy, the data cannot be considered as reliable.	3.4.1

Table 3.2-266: Details on trial methodology, efficacy trials excluded from efficacy evaluation – HORVS

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials” PP 1/239 (2) “Dose expression for plant protection products” PP 1/214 (3) “Principles of acceptable efficacy”
	Specific guidelines	PP 1/26 (4) “Foliar and ear diseases on cereals”
Experimental design	Plot design	RACOBL (7)
	Plot size	21-24.5 m²
	Number of replications	4 (7)
Crop	Trials per crop	Spring barley HORVS NE: 7 trials
	Varieties per crop	NE: Atrika (2), Harris, KWS Atrika, Kucyk, Stratus, Tesla
	Sowing period	NE: 26. March – 17. April
Application	Crop stage (BBCH) at application	NE: Appl. A: BBCH 32-35; Appl. B: 51-61
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (7 trials) NE: 13-16 days
	Spray volumes	NE: 200 L/ha (3 trials), 300 L/ha (4 trials)
Assessment	Assessment types	phytotoxicity %
	Assessment dates	Approximately 7-14 DAA, 0 DA-B, 7-14 DA-B, 21-28 DA-B

Oilseed rape (BRSNN)

Table 3.2-267: Details on trial methodology, efficacy trials used for efficacy evaluation - BRSNW

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials”
	Specific guidelines	PP 1/78 (3) “Root, stem, foliar and pod diseases of oilseed rape”
Experimental design	Plot design	RACOBL (98)
	Plot size	21-48 m²
	Number of replications	4 (98)
Crop	Trials per crop	Winter oilseed rape BRSNW (98) MAR: 32 trials NE: 26 trials SE: 40 trials
	Varieties per crop	MAR: Acacia (2), Advocat LG, Architect (3), Avatar (2), Crocodile, Crome, Croozer, DK Exception (2), DK Expression (3), Elevation, Expansion (2), Feli-

		ciano KWS, Flamingo, Hattrick (2), Kicker, KWS Digger (2), Nikita (3), Picto, Pioneer PT271, Recordie NE: Absolut (2), Acapulco, Alabama, Cult, DK Imistar, Einstein, Epure, Exotter, Feliciano, Finley, HERAKLES F1, Kuga (3), Mercedes, Mondit (3), Panama, PT264, Rohan, Severnij, Sherpa, Umberto (2) SE: Alicante, Arabella (5), Compass, Dekalb Expression, DK Exception, DK Exterior Mécses (2), DK Extron, Es Danube, Exception, Factor, Florida, Hybrirock (6), Imperio, Iowa, KWS HYBRIROCK, KWS Umberto, LG Architect, Mazari CS, Nelson (2), PR46W21, PT225, PT264, PT271, Rapool Shrek, Round, Sherpa, SHREK, Triangle
	Sowing period	MAR: 08. August – 05. October NE: 23. July – 15. October SE: 19. August – 21. October
Application	Crop stage (BBCH) at application	MAR: Two spring applications (23 trials) A: BBCH 34-55; B: 65-69 One autumn/winter application + one spring application (9 trials) A: BBCH 14-19; B: 65-67 NE: Two spring applications (19 trials) A: BBCH 32-55; B: 65-69 One autumn/winter application + one spring application (14 trials) A: BBCH 14-20; B: 65-69 SE: Two spring applications (31 trials) A: BBCH 35-59; B: 65-69 One autumn/winter application + one spring application (9 trials) A: BBCH 14-18; B: 65-66
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (98 trials) MAR: Two spring applications 18-46 days One autumn/winter application + one spring application 91-208 days NE: Two spring applications 21-47 days One autumn/winter application + one spring application 187-210 days SE: Two spring applications 12-38 days One autumn/winter application + one spring application 155-197 days
	Spray volumes	MAR: 200 L/ha (20 trials), 225 L/ha (1 trial), 250 L/ha (4 trials), 300 L/ha (6 trials), 200-250 L/ha (1 trial) NE: 200 L/ha (12 trials), 220 L/ha (1 trial), 250 L/ha (3 trials), 300 L/ha (9 trials), 200-250 L/ha (1 trial) SE: 200 L/ha (16 trials), 250 L/ha (12 trials), 300 L/ha (4 trials), 320 L/ha (1 trial), 500 L/ha (2 trials), 200-250 L/ha (1 trial), 200-300 L/ha (1 trial), 200-350 L/ha (3 trials)
Assessment	Assessment types	pest severity % (all trials), phytotoxicity % (all trials), green leaf area % (5 Maritime trials, 6 NE trials, 9 SE trials), yield and yield quality (13 Maritime trials, 12 NE trials, 18 SE trials)
	Assessment dates	Approximately 7-14 DAA, 0 DA-B, 21 DA-B, BBCH 70-85 for stem and pod infections Harvest

A total of 14 trials were excluded from the efficacy evaluation in BRSNW due to low pest severity. Further information can be found below. Detailed information on trial methodology for these efficacy trials is available in Appendix 4.

Table 3.2-268: Trials excluded from efficacy evaluation on BRSNW

Reason for excluding from efficacy	**Considered in Point**
The target pest SCLESC did not occur in the trial. Until 9 DA-B very low infection with BOTRCI was detected on the leaves (PESINC max 14.5 % of plants affected). Infection was homogenous, though	3.4.1

Reason for excluding from efficacy	**Considered in Point**
since infection was very low – conclusions from this trial should be drawn carefully.	
The target pest SCLESC did not occur in the trial. Until 20 DA-A very low infection with BOTRCI was detected on the leaves (PESINC max 4.5 % of plants affected). Infection was homogenous, though since infection was very low – conclusions from this trial should be drawn carefully.	3.4.1
Disease symptoms from SCLESC were recorded on stems of the untreated plots only at 21 DA-B (BBCH crop stage 73) with 0.2% PESSEV and 18% PESINC, but the infection did not seem to evolve (same disease pressure at 36 DA-B at BBCH 77). Therefore, due to low disease pressure on stems and the fact that leaves and pods were not affected, the efficacy data should be taken with caution.	3.4.1
Due to low disease pressure from ALTEBA, no visible differences were observed between treated and untreated plots.	3.4.1
No target diseases were assessed on this trial.	3.4.1
The first disease symptoms from LEPTMA appeared on leaves at the last assessment (35 DA-B) at BBCH crop stage 82. The disease pressure was low with 0.4% PESSEV and 8% PESINC in UTC and observed only on leaves. Therefore, due to the very low disease pressure and the fact that stems and pods were not affected, the efficacy data should be taken with caution.	3.4.1
Due to dry weather conditions, disease pressure was low. Disease symptoms from ERYSCR were present on leaves from the beginning of the trial (0.44% PESSEV, 60% PESINC). However, the infection did not develop much during the course of the trial. Symptoms from LEPTMA, ALTEBA and VERTLO also appeared on stems, but their severity was low (0.46-2.17% in UTC). Pods were also infected from ALTEBA with 0.33% PESSEV and 33% PESINC.	3.4.1
Disease symptoms from LEPTMA appeared on leaves at the last assessment (at 37 DA-B) at BBCH 82. The disease pressure was low with 0.4% PESSEV and 8% PESINC in UTC. No infection was observed on stems and pods. Therefore, due to low disease pressure from LEPTMA, the efficacy data should be taken with caution.	3.4.1
Disease symptoms from LEPTMA were observed on leaves with 0.4% PESSEV and 10% PESINC in UTC at 24 DA-B (BBCH crop stage 81). Stems were infected from SCLESC with 1.1% PESSEV and 1.5% PESINC in UTC at 24 DA-B, but the infection did not develop much until the end of the trial (3.9% PESSEV and 4.5% PESINC in UTC at 35 DA-B). Pods were infected from LEPTMA at 35 DA-B (BBCH crop stage 85), but the disease pressure was rather low (0.3% PESSEV and 8.5% PESINC) and recorded only in the untreated plots. Therefore, due to low disease pressure on leaves, stems and pods, the efficacy data should be taken with caution.	3.4.1
Disease symptoms from LEPTMA were observed on leaves at 21 DA-B (BBCH crop stage 79) with 3.5% PESSEV and 76.5% PESINC in UTC. No infection was observed on stems and pods. Therefore, due to low disease pressure on leaves and the fact that stems and pods were not affected, the efficacy data should be taken with caution	3.4.1
Due to dry weather conditions, disease pressure was low. Disease symptoms from ERYSCR were present on leaves from the beginning of the trial (0.40% PESSEV, 40% PESINC). However, the infection did not develop much during the course of the trial. Symptoms from LEPTMA, ALTEBA, SCLESC and VERTLO also appeared on stems, but their severity was low (0.27-1.31% in UTC). Pods were also infected from ALTEBA with 0.17% PESSEV and 16% PESINC.	3.4.1
Disease symptoms from LEPTMA appeared on leaves at the last assessment (at 36 DA-B) at BBCH crop stage 83. The disease pressure was low with 0.4% PESSEV and 7.5% PESINC in UTC. No infection was observed on stems and pods. Therefore, due to low disease pressure from LEPTMA, the efficacy data should be taken with caution	3.4.1
Due to dry weather conditions, disease pressure was low. Disease symptoms from ERYSCR were present on leaves from the beginning of the trial (0.8% PESSEV, 8% PESINC). However, the infection did not develop much during the course of the trial. Symptoms from LEPTMA, ALTEBA, SCLESC and VERTLO also appeared on stems, but their severity was low (0.51-3.79% in UTC). Pods were also infected from ALTEBA with 0.33% PESSEV and 33% PESINC.	3.4.1
ERYSCR did not appear during the trial. SCLESC was observed at 37 DA-B and reached 3% of pest severity on stem in the untreated control. ALTEBA was observed at 37 DA-B and reached 0.4% of pest severity on pod in the untreated control. Disease level of ALTEBA was too low to show reliable results between the products.	3.4.1

Table 3.2-269: Details on trial methodology, efficacy trials excluded from efficacy evaluation – BRSNW

Guidelines	General guidelines	PP 1/135 (4) “Phytotoxicity assessment” PP 1/152 (4) “Design and analysis of efficacy evaluation trials” PP 1/181 (4) “Conduct and reporting of efficacy evaluation trials”
	Specific guidelines	PP 1/78 (3) “Root, stem, foliar and pod diseases of oilseed rape”
Experimental	Plot design	RACOBL (14)

design	Plot size	21-30 m²
	Number of replications	4 (14)
Crop	Trials per crop	Winter oilseed rape BRSNW (14) MAR: 3 trials NE: 9 trials SE: 2 trials
	Varieties per crop	MAR: SY Vesuvio, Bender, TREZZOR NE: DK Explicit, DK Extract, ES Cesario, Ilona, Mercedes, NK Technic, Rohan, Taifun, Thure SE: Hybrirock, Visby
	Sowing period	MAR: 23. August – 28 September NE: 22. August – 05. September SE: 20-23. September
Application	Crop stage (BBCH) at application	MAR: Two spring applications (3 trials) A: BBCH 53-55; B: 65-68 NE: Two spring applications (9 trials) A: BBCH 32-57; B: 57-69 SE: Two spring applications (9 trials) A: BBCH 53; B: 65-67
	Timing	starting at early infestation
	Number of applications Intervals between applications	2 (14 trials) MAR: 11-27 days NE: 20-47 days SE: 33-25 days
	Spray volumes	MAR: 200 L/ha (1 trial), 300 L/ha (2 trials) NE: 200 L/ha (4 trials), 300 L/ha (5 trials) SE: 250 L/ha (2 trials)
Assessment	Assessment types	phytotoxicity %
	Assessment dates	Approximately 14-21 DAA, 0 DA-B, 21 DA-B, BBCH 70-85 for stem and pod infections

Testing Facility or Organisation

All trials presented in this dossier were carried out by Company organizations, contractor companies or Official Research institutes, all of which follow the appropriate EPPO guidelines or other country-specific guidelines (e.g. CEB). All testing organizations are officially recognized by the competent authorities to carry out field registration trials in accordance with the principles of Good Experimental Practice (GEP). A list of testing facilities and a link to the corresponding GEP certificates can be found in **Section 3.7**.

Sites

All the trials were placed within regions where the respective crops are commonly grown and sites were selected on the basis of known infestations. Crop growth stages and pest levels were recorded at the time of application and throughout the trial period. All normal crop husbandries, excluding fungicides with target activity, were applied to the trials area, according to crop requirements and in accordance with good agricultural practice. Trials included a range of soil types and locations to determine crop tolerance and efficacy on a number of commercially grown varieties, under a range of different conditions.

Experimental details

Efficacy trials were carried out to evaluate the fungicidal effect, preventive effect and crop safety of CA3642 when applied at a range of dose rates for the control of several foliar and ear diseases.
All trials presented in this biological assessment dossier were implemented with Randomized complete blocks experimental design including four replicates (i.e. 4 blocks).
Plot size varied depending on the trials and commercial production practices of each crop.

All trials were carried out in compliance with the following general EPPO standards:

- PP 1/135 (4) 'Phytotoxicity assessment'
- PP 1/152 (4) 'Design and analysis of efficacy evaluation trials'
- PP 1/181 (4) 'Conduct and reporting of efficacy evaluation trials'
- PP 1/239 (2) 'Dose expression for plant protection products'
- PP 1/214 (3) 'Principles of acceptable efficacy'

The following specific EPPO standards were considered:

- PP 1/26 (4) 'Foliar and ear diseases on cereals'
- PP 1/78 (3) "Root, stem, foliar and pod diseases of oilseed rape

Application method

CA3642 was applied by foliar spray with water volumes adapted to the vegetation development and local practices.
The tested dose rates, timings and number of uses reflect the intended use as given in the GAP table.
Since many diseases are hard to predict unless they are a severe problem, CA3642 is intended to be used preventative as well as curative. This is reflected by the different infestation levels at application. In several valid trials, the visible infestation at application was much lower than 5 % but a sufficient development was observed in the trial period and in most trials the infestation significantly exceeded 5 % during the course of the trial. Disease levels in all valid trials are considered to be sufficient for the evaluation of the effectiveness of the test product and its comparison to the standard product.

Assessment methods - Efficacy

The control level is presented as % efficacy. Efficacy was calculated according to Abbott-formula, based on assessments of disease severity and green leaf area. Disease incidence was calculated based on pest severity assessments and is preferably not taken into account.

Aim was to choose representative assessments for each trial at different leaf levels, preferably when the maximum efficacy was reached and in correspondence to the maximum of infestation. Since higher leaf levels (L1-L3) are mainly involved in the final ripening process especially at later development stages, focus is put on those leaf levels.

Valid assessments were chosen as follow:

- There has been no major deviation from the GAP table;
- Crops at application were within the GAP table growth stage ranges;
- The reference product performed as expected;
- At least 5 % pest severity at assessment timing in the untreated check. Exceptions to this rule were done when a clear efficacy of CA3642 and/or the standards was observed. Justification for those cases is given in the description of results.

Description of efficacy is made according to a modified version of the description of effectiveness from SANCO/10055/2013 Rev. 4 (2013).

Table 3.2-270: Levels of disease control expected for effectiveness claims

Level of effectiveness	Label claim appropriate
Excellent control	95-100 %
Good control	85-94.9 %
Acceptable control	70-84.9 %
Low control	50-69.9%
Insufficient control	0-49.9 %

Statistical analysis – Individual trial results

Data were analysed by the ARM program, using two-way analysis of variance (ANOVA) on untransformed and transformed raw data. The probability of no significant difference occurring between treatment's means was calculated as the F probability value pF=0.05 (95% confidence limit).

In all trials, Student-Newman and Keuls' test was then applied to assess any treatment differences identified on the basis of the ANOVA test.

Results obtained are indicated by a letter. Treatment's means with no letter in common are significantly different in accordance with a Student-Newman and Keuls' or Least Significant Difference test conducted at a 95% confidence level.
The ANOVA assumption of homogeneity of variance has been checked using a Levene's test. In case of non-respect of these assumptions, data were transformed using traditional ways such as log(x) or √(x). When data were transformed, treatment's means are presented untransformed in the trial report, with the appropriate letter test derived from the transformed ANOVA.

ARM abbreviations:

TL[n] = log transformation of X+1 (n=column)
TA[n] = Arcsine square root % transformation (n=column)
TIO[n] = % incidence from subsamples per plot where 0 = 'no infestation' (n=column)

The tabulated data presented in this biological assessment dossier only represent the means of selected treatments, within an assessment. However, the statistics presented in conjunction with these data are derived from all data points from all treatments within the assessment. Tables of data comprising all treatments means are presented in each individual trial report summaries.

Data selection and groupings
In addition to the presentation of the individual trial results of the valid assessments, data groupings combining the results of one assessment type were also performed. This allowed giving an overall evaluation of the products efficacy throughout several test conditions.

Evaluation of CA3642 efficacy will be conducted with the analysis of the following parameters:

- **Disease severity** (%) (or **disease incidence (%))**. Assessment timing selected are around 2 weeks after the 2nd application and before harvest (last assessment date). For each individual trial, the effectiveness of CA3642 will be calculated with the Abbott formula and the global effectiveness of CA3642 for each use corresponds to the mean of the calculated effectiveness of each individual trial. These assessment timings will be used for efficacy evaluation and for minimum effective dose evaluation.
- **Green leaf area (%)** and the % compared to the untreated control. In most instances, green leaf area was recorded in a single assessment by trial, usually at the last assessment before harvest. Therefore, a single data grouping for average calculation will be made for the green leaf area.

Data groupings will be organized by crop, by disease and then by EPPO zone. Regarding to cereal crops, the data groupings will primarily target foliar levels 1, 2 and as they are the most important foliar levels responsible for providing the photosynthetic products for grain filling. Data groupings for the green leaf area will be organised by EPPO zone.

Data groupings will be performed thanks to an add-in option of the ARM program: ARM ST (Summary Across Trials). This tool combines and averages similar assessments in ARM trials across locations and years. It can therefore provide tables presenting the individual results from each trial (with the corresponding letters from N&K test) as well as data grouping calculations. For each data grouping, several calculations are presented:

- Number of values
- Minimum disease severity or incidence in % (or % green leaf area)
- Maximum disease severity or incidence in % (or % green leaf area)

- Mean
- Mean Abbott efficacy in % (or %UTC for the green leaf area): calculated from each individual trial

Three other types of information were also recorded and reported in the data grouping tables:

- For minimum effective dose evaluation: number of trials where CA3642 at N dose is significantly more efficient (>), statistically equivalent (=) or significantly less efficient (<) compared to CA3642 applied at another rate
- For efficacy evaluation: number of trials where CA3642 at N dose is significantly more efficient (>), statistically equivalent (=) or significantly less efficient (<) compared to UTC
- For efficacy evaluation: number of trials where CA3642 at N dose is significantly more efficient (>), statistically equivalent (=) or significantly less efficient (<) compared to reference product

For clarity, where the term "significant" is used, this means statistically significant according to the calculations.

In results tables the efficacy for treatments is % control compared to the untreated. Efficacy is calculated through TTAB formula:

TTAB[n]: Abbott per treatments calculated from treatment means (n=columns)

In the column of UTC the value is disease severity or incidence as defined by the table header.

Wheat (TRZAW)

Winter Wheat (TRZAW) – Septoria leaf spot (SEPTTR – *Zymoseptoria tritici*)

A total of 73 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of *Zymoseptoria tritici* (SEPTTR) in winter wheat in the Maritime (32 trials), North-East (26 trials) and South-East (15 trials) EPPO zones.

The trials from the Maritime EPPO zone were carried out in the United Kingdom (14), Germany (10) and Northern France (8).
The trials from the North-East EPPO zone were carried out in Poland (20), Lithuania (5) and Latvia (1).
The trials from the South-East EPPO zone were carried out in Hungary (9), Romania (4) and Bulgaria (2).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZAW – SEPTTR – Maritime EPPO zone

32 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the Maritime EPPO zone. The trials were carried out in France (8), Germany (10) and Great Britain (14) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 41 and the second application was done 15 - 37 days later, at BBCH 39 - 65.

Table 3.2-271: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Early assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L S		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
Efficacy after 2 applications																
LEAF1 early	40-51	15-17	*2*	*Mean*	*6.3*	***70.6***	***64.2***	*48.7*		*55.8*	1=		1=	1=		1=
				Min	4.6	~~49.4~~ **49.6**	~~48.1~~ **48.2**	25.9		27.2						
				Max	8.1	**91.9**	**80.3**	71.5		84.4						
LEAF2 early	31-51	14-19	*10*	*Mean*	*13*	~~*64.4*~~ ***64.5***	~~*64.6*~~ ***64.5***	*49.3*			7=			5=		
				Min	4.1	~~47.9~~ **47.8**	**51.3**	21.9			3>			3>		
				Max	33.1	**100**	**100**	67.3						2<		
			4	Mean	9.6	**69.9**	**74.7**		**68.9**			3=			3=	
				Min	5.2	**58.7**	**61.5**		55.8			1>			1>	
				Max	17.8	**100.0**	**100.0**		82.4							
			5	*Mean*	*9.6*		***79.8***		*75.1*						4=	
				Min	5.2		**61.5**		55.8						1>	
				Max	17.8		**100**		100							
			6	*Mean*	*15.2*	***60.8***	***57.8***	*55.1*		*54*	6=		5=	4=		4=
				Min	4.1	~~47.9~~ **47.8**	**51.3**	26.6		38.3			1>	1>		1>
				Max	33.1	**74.5**	**70.4**	67.3		65.9				2<		1<
LEAF3 early	31-53	14-20	*15*	*Mean*	*28.5*	~~*52.4*~~ ***52.5***	***48.9***	*38.7*			10=			8=		
				Min	4.2	~~13.8~~ **14.0**	**6**	0			4>			5>		
				Max	87.6	~~88.2~~ **88.3**	**78.6**	89.2			1<			2<		

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L S		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
			8	Mean	23.9	**58.7**	**53.1**		53.2		5>	8=		3=	6=	
				Min	4.2	**15.8**	**6.0**		5.0		2>			3>	2 <	
				Max	87.6	~~88.2~~ **88.3**	**78.6**		85.7		1<			2<		
			10	Mean	25.4		**53.1**		54.7						8=	
				Min	4.2		**6**		5						2<	
				Max	87.6		**78.6**		85.7							
			7	Mean	33.7	**45.3**	**44.1**	33.7		41.7	5=		6=	5=		6=
				Min	17.8	~~13.8~~ **14.0**	**21**	0		16.8	2>		1>	2>		1>
				Max	75.8	**64**	**61.4**	53.8		65.5						
LEAF4 early	32-51	14-17	10	Mean	30.3	**61.3**	~~54.7~~ **54.8**	31.9			4=			5=		
				Min	4.9	**40.2**	~~39.2~~ **39.3**	8.1			6>			5>		
				Max	73.9	~~82.2~~ **82.1**	~~80.4~~ **80.5**	67.9								
			9	Mean	29.2		**51.5**		55.6						8=	
				Min	4.9		**7.6**		16.6						1<	
				Max	85.2		~~80.4~~ **80.5**		84.9							
			8	Mean	22.2	**66.2**	**57.0**	32.4	**60.5**		3=	8=		5=	7=	
				Min	4.9	**45.3**	~~39.2~~ **39.3**	8.1	28.4		5>			3>	1<	
				Max	73.9	~~82.2~~ **82.1**	~~80.4~~ **80.5**	67.9	84.9							

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L S**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
			2	*Mean*	*62.7*	***41.6***	***45.4***	*30.1*		*41*	2=		2=		1=	2=
				Min	56.2	**40.2**	**43.2**	17.1		38.2					1>	
				Max	69.1	**42.9**	**47.6**	43.2		43.7						

Table 3.2-272: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Late assessment timing – Maritime EPPO zone

Leaf level assm. Tim-ing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
Efficacy after 2 applications																
LEAF1 late	55-62	30-33	4	Mean Min Max	25.4 8.2 67.2	~~79.3~~ 79.2 ~~69.9~~ 69.8 92	76.5 ~~66.5~~ 66.4 ~~86.7~~ 86.8	54.5 42.9 65.5			3= 1>			2= 2>		
			1		8.5	76.5	70.6	60		69.4	1=		1=	1=		1=
			3	Mean Min Max	31 8.2 67.2	80.3 ~~69.9~~ 69.8 92	78.4 ~~66.5~~ 66.4 ~~86.7~~ 86.8	52.6 42.9 65.5	83.9 76.1 95		2= 1>	2= 1<		1= 2>	2= 1<	
LEAF2 late	45-60	25-33	8	Mean Min Max	37.9 4.5 100	74.5 32.4 89.3	73.2 40.2 88.2	43.8 5.4 76			2= 6>			2= 6>		
			8	Mean Min Max	30.4 4.5 100		72.6 40.2 88.2		71.7 35.1 90.9			4= 2> 1<			7= 1>	
			7	Mean Min Max	33.5 4.5 100.0	73.7 32.4 89.3	72.6 40.2 88.2	39.2 5.4 62.2	70.6 35.1 90.9		5> 2=	5> 1> 1<		5> 2=	7=	
			1		68.7	80.3	77.1	76		74.7	1=		1=	1=	1=	
LEAF3 late	38-48	15-28	2	Mean Min Max	15.2 5.2 25.1	97.7 96.2 99.2	93.8 ~~90.4~~ 90.2 ~~97.2~~ 97.4	60.4 42.3 78.5	97.1 94.2 100		2>	2=		2>	2=	
			3	Mean	34.4		76.4		87						2=	

Leaf level assm. Tim-ing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PROLINE 275 PTZ 275 g/L EC 0.72 L/ha 198 g PTZ/ha	CA3642 at 1.4 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA3642 at 1.2 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
				Min	5.2		**41.7**		66.7						1<	
				Max	72.9		~~97.2~~ **97.4**		100							

Table 3.2-273: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Very late assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PROLINE 275 PTZ 275 g/L EC 0.72 L/ha 198 g PTZ/ha	CA3642 at 1.4 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA3642 at 1.2 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
Efficacy after 2 applications																
LEAF1 very late	58-84	37-53	*19*	*Mean*	*29.7*	*~~60.2~~* ***63.4***	*~~55.1~~* ***58.1***	*38.7*			7=			10=		
				Min	6.3	**19.8**	**14.3**	10.2			11>			9>		
				Max	98.9	**96.8**	**92.5**	91.7			1<			1<		
			13	*Mean*	*32.4*	***62.9***	***58.1***	*37*	*57.4*		6=	10=		6=	11=	
				Min	7.5	**24.3**	**14.3**	10.2	25.6		7>	3>		7>	1>	
				Max	98.9	**95.2**	**92.5**	75.5	87.6						1<	
			6	*Mean*	*28.9*	***64.4***	***57.7***	*48.9*		*58.3*	1=		1=	3=		4=
				Min	6.3	**19.8**	**25.9**	22.3		16.7	5>		4>	3>		1>
				Max	87.4	**96.8**	**74.9**	91.7		81.8			1<			1<
LEAF2 very late	59-84	36-52	*18*	*Mean*	*35.1*	***63.9***	***58.3***	*46.6*			10=			11=		

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PROLINE 275 PTZ 275 g/L EC 0.72 L/ha 198 g PTZ/ha	CA3642 at 1.4 L/ha compared to CA2702 0.8 L/ha	CA3642 at 1.4 L/ha compared to CA2445 0.8 L/ha	CA3642 at 1.4 L/ha compared to PROLINE 275 0.72 L/ha	CA3642 at 1.2 L/ha compared to CA2702 0.8 L/ha	CA3642 at 1.2 L/ha compared to CA2445 0.8 L/ha	CA3642 at 1.2 L/ha compared to PROLINE 275 0.72 L/ha
				Min	12	**9.5**	**12**	6.8			6>			5>		
				Max	96.8	**91.9**	**86.2**	92.6			2<			2<		
			13	*Mean*	*31.7*	***69***	***61.4***		*61.9*			12=			12=	
				Min	6.7	**35.8**	**31.7**		32.6			1>			1<	
				Max	80.3	**94**	**81.4**		97							
			6	*Mean*	*37.6*	***58.1***	***53.7***	*43.8*		*50.5*	2=		4=	2=		4=
				Min	14.7	**9.5**	**12**	6.8		9.3	3>		2>	3>		1>
				Max	96.8	**91.9**	**86.2**	92.6		84.5	1<			1<		1<
LEAF3 very late	56-74	38-47	*8*	*Mean*	*62.9*	***53.7***	***52.3***	*29.1*			4=			4=		
				Min	19.7	**2.1**	**6.3**	0			3>			4>		
				Max	100	**86.3**	**85.9**	63.7			1<					
			5	*Mean*	*60.7*	***60.8***	***57.4***	*27*	*48.8*		3=	4=		3=	4=	
				Min	19.7	**33.6**	**30.9**	0	23.9		3>	1>		3>	1>	
				Max	100	**86.3**	**85.9**	46.6	89.6							
			3	*Mean*	*66.5*	***41.8***	***43.8***	*32.7*		*40.2*	1>		2=	2>		2=
				Min	27.9	**2.1**	**6.3**	3.2		1.1	1=		1>	1=		1>
				Max	100	**71.4**	**66.9**	63.7		67	1<					

Table 3.2-274: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 1 application – Early assessment timing – Maritime EPPO zone

Leaf level assm. Tim-ing	DA-A	DA-B	No. of tri-als &	Name Conc Typ	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to	CA3642 at 1.2 L/ha compared to

			ARM	e Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
Efficacy after 1 application																
LEAF 3 early	14		*1*		*5.4*	***~~23.3~~* *23.4***	***~~39.3~~* *39.4***	*45.6*	*38.7*		1=	1=		1=	1=	
LEAF 4 early	14-19		*7*	*Mean*	*9.9*	***71.5***	***71.4***	*57.2*			4=			5=		
				Min	4.1	**26.1**	~~38.3~~ **38.4**	9.6			3>			1>		
				Max	25.7	**100**	**100**	96.9						1<		
			6	*Mean*	*10.4*		***60.3***		*62.1*			5=			6=	
				Min	4.5		**24.4**		32							
				Max	25.7		**100**		100							
			5	Mean	*10.6*	***63.8***	***67.4***	*43.4*	***68.1***		2=	5=		3=	5=	
				Min	*4.5*	*26.1*	~~38.3~~ 38.4	*9.6*	*49.3*		3>			2>		
				Max	*25.7*	*100.0*	*100.0*	*82.0*	*100.0*							
			2	*Mean*	*8.4*	***90.8***	***81.2***	*91.8*		*79*	2=		1=	1=		2=
				Min	4.1	**84.5**	**65.3**	86.7		60.3			1>	1<		
				Max	12.7	**97.1**	**97.1**	96.9		97.7						

Table 3.2-275: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 1 application – Late assessment timing – Maritime EPPO zone

Leaf level assm. Tim-	DA-A	DA-B	No. of tri-als &	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to	CA3642 at 1.2 L/ha compared to

ing			**ARM**	**Rate**		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
Efficacy after 1 application																
LEAF3 late	27-30		*2*	*Mean*	*24*	***53.1***	***54.6***	*39*	*56*		2=	2=		2=	2=	
				Min	8	**46.6**	**47.1**	28.9	51.9							
				Max	39.9	~~59.4~~ **59.5**	**62.1**	49.2	60							
LEAF4 late	22-30		*6*	*Mean*	*21.6*	***64.1***	***60.9***	*57.3*			5=			5=		
				Min	4.5	~~12.3~~ **12.2**	~~6~~ **5.8**	5			1>			1>		
				Max	59	~~95.5~~ **95.6**	**95.3**	94.7								
			3	*Mean*	*31.2*	***59.7***	***53.1***	*45.4*	*57.7*		2=	3=		2=	3=	
				Min	4.5	~~12.3~~ **12.2**	~~6~~ **5.8**	5	21.2		1>			1>		
				Max	59	**85.7**	**78.9**	80.2	76.9							
			3	*Mean*	*11.9*	***68.4***	***68.8***			*68.8*			3=			3=
				Min	5.5	**50.7**	**50.9**			53.2						
				Max	24.5	~~95.5~~ **95.6**	**95.3**			96.6						

Table 3.2-276: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 1 application – Very late assessment timing – Maritime EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
Efficacy after 1 application																
LEAF 4 very late	35-37		*2*	*Mean*	*7.2*	***80.7***	***73.7***	*93.2*	*85.2*		1=	1=		2<	1=	

Leaf level assm. Tim-ing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
				Min Max	5.1 9.3	**66.2** **95.1**	**67.8** ~~79.5~~ **79.6**	92.9 93.6	81.8 88.6		1<	1<			1<	

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date ''early'' (15-17 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 70.6% and 64.2% mean efficacy respectively across 2 trials. The level of infection observed in the untreated check was 6.3% severity.
Performance of CA3642 was higher than CA2702, with no statistical difference observed in the individual assessments.
Performance of CA3642 was also higher than PROLINE 275, with no statistical difference observed in the individual assessments.

At assessment date ''early'' (13-20 DA-B), in **leaf level 2**, when considering the mean efficacy across 10 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 64.4% and 64.6% efficacy respectively. Across 5 trials, it reached 79.8% efficacy when applied at 1.2 L/ha. Across 4 trials, it reached 69.9% at 1.4L/ha and 74.7% at 1.2 L/ha. Across 6 trials, it achieved 60.8% at 1.4 L/ha and 57.8% at 1.2 L/ha. The level of infection observed in the untreated check was 13% severity across 10 trials, 9.6% across 5 trials, 9.6% across 4 trials and 15.2% across 6 trials.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 3 out of 10 individual assessments.
Performance of CA3642 was equivalent to CA2445 for both dose rates. No statistical difference was observed for 3 out of 4 individual assessments, in 1 assessment CA2445 was lower.
Performance of CA3642 was equivalent to PROLINE 275. No statistical difference was observed for 4 out of 6 individual assessments, in 1 assessment PROLINE 275 was lower than both rates and in 1 other assessment was higher than the 1.2 L/ha rate of CA3642.

At assessment date ''early'' (13-20 DA-B), in **leaf level 3**, when considering the mean efficacy across 15 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 52.4% and 48.9% efficacy respectively and across 7 trials, 45.3% and 44.1% respectively. Across 8 trials, it reached 58.7% at 1.4 L/ha and 53.1% at 1.2 L/ha. The test product CA3642 applied 1.2 L/ha across 10 trials achieved a mean efficacy of 53.1%.
The level of infection observed in the untreated check was 28.5% severity across 15 trials, 25.4% across 10 trials, 23.9 % across 8 trials and 33.7% across 7 trials.
Performance of CA3642 was higher than CA2702 on average. No statistical difference was observed at dose rate 1.4 L/ha for 10 out of 15 individual assessments, in 4 trials CA3642 was higher and in 1 trial was lower. No statistical difference was observed at the dose rate of CA3642 at 1.2 L/ha for 8 out of 15 individual assessments, in 5 trials CA3642 was higher and in 2 trials was lower.
Performance of CA3642 was comparable to CA2445. No statistical difference was observed at dose rate 1.4 L/ha in any of 8 assessments or at rate 1.2 L/ha for 8 out of 10 individual assessments, in 2 trials CA2445 was higher than the 1.2 L/ha rate.
Performance of CA3642 was equivalent to PROLINE 275**.** No statistical difference was observed for 6 out of 7 individual assessments and in 1 trial both rates of CA3642 gave higher efficacy.

At assessment date ''late'' (30-33 DA-B), in **leaf level 1**, when considering the mean efficacy across 4 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 79.3% and 76.5% respectively. In 1 trial, it achieved 76.5% and 70.6% efficacy respectively. And across 3 trials, it reached 80.3% and 78.4%. The level of infection observed in the untreated check was 25.4% severity across 4 trials, 8.5% across 1 trial and 31% across 3 trials.
Performance of CA3642 was higher than CA2702. Statistical differences were observed for 1 out of 4 individual assessments between CA3642 at 1.4 L/ha and CA2702 and for 2 out of 4 individual assessments between CA3642 at 1.2 L/ha and CA2702.
Performance of CA3642 was equivalent to CA2445 with statistical difference for 1 out of 4 individual assessments, whereby CA2445 was higher than the rate of 1.2 L/ha only.
Performance of CA3642 was equivalent to PROLINE 275 with no statistical difference in the single trial.

At assessment date ''late'' (25- 33 DA-B), in **leaf level 2**, when considering the mean efficacy across 8 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 74.5% and 73.2% efficacy respectively. In 1 trial, it reached 80.3% and 77.1%. Across 7 trials, 73.7% and 72.6 % was achieved for 1.4 L/ha and 1.2 L/ha respectively. Across 8 trials, the test product CA3642 applied at 1.2 L/ha achieved a mean efficacy of 72.6%. The level of infection observed in the untreated check was 37.9% severity across 8 trials, 33.5% across 7 trials, 30.4% across 8 trials and 68.7% across 1 trial.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 6 out of 8 individual assessments.
Performance of CA3642 at 1.2 L/ha and 1.4 L/ha was equivalent to CA2445. Statistical difference was observed in 2 out of 7 individual assessments, whereby CA3642 was higher in one and lower in the other when compared to CA2445. Compared to CA3642 at 1.4 L/ha, CA2445 was lower in 2 trials and higher in 1 of in 7 trials.
Performance of CA3642 was equivalent to PROLINE 275. No statistical difference was observed.

At assessment date ''late'' (15- 27 DA-B), in **leaf level 3**, when considering the mean efficacy across 2 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 97.7% and 93.8% efficacy respectively. The test product CA3642 applied at 1.2 L/ha across 3 trials achieved 76.4% efficacy. The level of infection observed in the untreated check was 15.2% severity across 2 trials and 34.4% across 3 trials.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for both individual assessments.
Performance of CA3642 at the dose rate 1.2 L/ha was equivalent to CA2445 but significantly lower for 1 out of 3 individual assessments. Compared to CA3642 at 1.4 L/ha, CA2445 was comparable in both trials.

At assessment date ''very late'' (37- 53 DA-B), in **leaf level 1**, when considering the mean efficacy across 19 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 60.2% and 55.1% efficacy respectively. Across 13 trials, it achieved 62.9% and 58.1% respectively and across 6 trials, 64.4% and 57.7%. The level of infection observed in the untreated check was 29.7% severity across 19 trials, 32.4% across 13 trials and 28.9% across 6 trials.
Performance of CA3642 was higher than CA2702 on average. This is statistically significant for 12 out of 19 individual assessments between CA3642 at 1.4 L/ha and CA2702 and for 10 out of 19 individual assessments between CA3642 at 1.2 L/ha and CA2702.
Performance of CA3642 was equivalent to CA2445. No statistical difference observed for 10 out of 13 individual assessments.
Performance of CA3642 was comparable to PROLINE 275. Significantly higher efficacy was observed at dose rate 1.4 L/ha for 3 out of 6 individual assessments and lower for 2 assessments. No statistical difference was observed at the dose rate of CA3642 at 1.2 L/ha for 4 out of 6 individual assessments, and in 2 trials CA3642 was higher.

At assessment date ''very late'' (36- 53 DA-B), in **leaf level 2**, when considering the mean efficacy across 18 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 63.9% and 58.3% efficacy respectively. Across 13 trials, it achieved 69% and 61.4% and across 6 trials, 58.1% and 53.7% respectively. The level of infection observed in the untreated check was 35.1% severity across 18 trials, 31.7% across 13 trials and 37.6% across 6 trials.
Performance of CA3642 was higher than CA2702 on average. No statistical difference was observed at dose rate 1.4 L/ha for 10 out of 18 individual assessments, in 6 trials CA3642 was higher in and in 2 was lower. No statistical difference was observed at the dose rate of CA3642 at 1.2 L/ha for 11 out of 18 the individual assessments, in 5 trials CA3642 was higher in and in 2 was lower.
Performance of CA3642 was equivalent to CA2445. No statistical difference was observed for 11 out of 13 individual assessments.
Performance of CA3642 was equivalent to PROLINE 275. No statistical difference was observed for 3 out of 6 individual assessments. Applied at 1.4 L/ha or at 1.2 L/ha CA3642 was higher in 2 trials each.

At assessment date ''very late'' (33- 47 DA-B), in **leaf level 3**, when considering the mean efficacy across 8 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 53.7% and 52.3% efficacy respectively. Across 5 trials, it achieved 60.8% and 57.4% and across 3 trials, 41.8% and 43.8% respectively. The level of infection observed in the untreated check was 62.9% severity across 8 trials, 60.7% across 5 trials and 66.5% across 3 trials.
Performance of CA3642 was higher than CA2702 on average. No statistical difference was observed for 4 out of 8 the individual assessments. Applied at 1.4 L/ha CA3642 was higher in 3 trials and lower in 1, applied at 1.2 L/ha CA3642 was higher in 4 trials.
Performance of CA3642 was higher than CA2445 on average at the higher dose rate at 1.4 L/ha. No statistical difference was observed for 4 out of 5 the individual assessments, in the other trial CA3642 was higher at both rates.
Performance of CA3642 was equivalent to PROLINE 275. No statistical difference was observed for 2 out of 3 the individual assessments, in the other trial CA3642 was higher at both rates.

After one application of CA3642 applied at 1.2-1.4 L/ha
At assessment date ''early'' (14 DA-A), in **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 23.3% and 39.3% efficacy respectively. The level of infection observed in the untreated check was 5.4% severity.
Performance of CA3642 at 1.2 L/ha was equivalent to CA2702 and CA2445. No statistical difference was observed.

At assessment date ''late'' (27-30 DA-A), in **leaf level 3**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 53% and 54.6% mean efficacy respectively across 2 trials. The level of infection observed in the untreated check was 24% severity.
Performance of CA3642 was higher than CA2702. No statistical difference was observed.
Performance of CA3642 was comparable to CA2445. No statistical difference was observed.

Comments of zRMS:

32 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate effectiveness after 2 applications, either in the early and late assessments. In the early assessment, the test product presented the mean efficacy 64,2-70,6% on L1 and 64,5% on L2. In the late assessment, CA3642 at claimed doses presented the mean efficacy 76,5-79,2% on L1, 73,2-74,5% on L2 and 93,8-97,7% on L3. In the very late assessment, low control was noted for both dose rates. Slight differences between test and reference products were observed. CA2702 was inferior compared to CA3642, while CA2445 and Proline achieved similar results. Also moderate effectiveness has been noted after 1 application. The test product at 1,2-1,4 l/ha presented acceptable control on L4 with results of 71,4-71,5% in early assessment and 73,7-80,7% in very late assessment.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is moderately effective for control of SEPTTR in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – SEPTTR – North-East EPPO zone

26 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the North-East EPPO zone. The trials were carried out in Poland (20), Lithuania (5) and Latvia (1) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 14 - 53 days later at BBCH 39 - 61.

Table 3.2-277: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Early assessment timing – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC * 65 g/L EC	DELARO 325 SC TFS + PTZ ** 325 g/L SC
						1.4 L/ha	1.2 L/ha	0.8 L/ha	0.8 L/ha	2.0 L/ha	1.0 L/ha
						210 g AZX/ha + 210 g PTZ/ha	180 g AZX/ha + 180 g PTZ/ha	200 g AZX/ha	200 g PTZ/ha	75 g EPC/ha + 55 g MTC/ha	150 g TFS/ha + 175 g PTZ/ha
Efficacy after 2 applications											
LEAF1 early	36-41	15	2	*Mean*	*4.4*	~~*84.0*~~ ***85.0***	~~*79.5*~~ ***79.3***	*61.3*			*86.4*
				Min	4.3	~~81.4~~ **82.4**	~~79.1~~ **77.9**	58.1			86.0
				Max	4.5	~~86.7~~ **87.5**	~~80.0~~ **80.6**	64.4			86.7
LEAF2 early	36-68	15-19	9	Mean	9.2	~~84.1~~ **84.3**	~~81.2~~ **81.3**	70.6			
				Min	4.2	~~59.5~~ **59.8**	~~56.8~~ **56.4**	33.3			
				Max	23.8	~~99.6~~ **99.7**	~~97.5~~ **97.6**	98.3			
			3	*Mean*	*7.9*	***82.9***	***80.4***	*68.3*	*78.7*		
				Min	4.2	~~59.5~~ **59.8**	~~56.8~~ **56.4**	33.3	50.5		
				Max	11.1	**95.2**	**94.0**	90.5	92.9		
			5	*Mean*	*9.4*	***91.0***	***89.2***	*81.0*		*86.5*	
				Min	4.2	**79.6**	**77.8**	64.8		66.7	
				Max	23.8	~~99.6~~ **99.7**	~~97.5~~ **97.6**	98.3		100.0	
			3	*Mean*	*8.3*	***80.8***	***76.1***	*65.7*			*83.4*
				Min	5.1	**69.4**	**65.3**	53.1			69.4
				Max	9.9	**94.1**	**92.2**	84.3			96.1
LEAF3 early	31-68	14-19	16	Mean	10.2	~~82.2~~ **82.3**	~~78.7~~ **78.8**	66.3			
				Min	4.2	~~53.5~~ **52.8**	~~49.5~~ **49.3**	23.9			
				Max	28.5	**100.0**	**100.0**	100.0			
			9	*Mean*	*10.4*	***77.2***	***71.5***	*55.7*	*74.1*		
				Min	4.3	~~53.5~~ **52.8**	~~49.5~~ **49.3**	23.9	48.4		
				Max	28.5	**93.7**	**91.0**	79.7	98.3		
			10	*Mean*	*9.6*	***84.4***	***81.4***	*73.5*		*77.9*	
				Min	4.3	~~53.5~~ **52.8**	**67.4**	51.2		39.5	
				Max	17.4	**100.0**	**100.0**	100.0		100.0	
			2	*Mean*	*5.1*	***93.1***	***92.7***	*80.2*			*92.7*
				Min	4.2	**92.9**	**90.5**	73.8			90.5
				Max	6.0	**93.3**	**95.0**	86.7			95.0
LEAF4 early	43-66	15-16	3	*Mean*	*6.9*	~~*81.8*~~ ***81.7***	~~*76.8*~~ ***76.7***	*71.9*			
				Min	6.0	~~61.7~~ **61.9**	~~53.3~~ **53.6**	46.7			
				Max	7.5	~~97.2~~ **96.8**	~~97.2~~ **96.8**	97.2			
			1		*7.1*	~~*97.2*~~ ***96.8***	~~*97.2*~~ ***96.8***	*97.2*			*94.4*
			2	*Mean*	*6.8*	~~*74.2*~~ ***61.9***	~~*66.7*~~ ***53.6***	~~*59.3*~~ *46.7*	~~*62.2*~~ *55.0*		

				Min Max	6.0 6.0	~~61.7~~ **61.9** ~~61.7~~ **61.9**	~~53.3~~ **53.6** ~~53.3~~ **53.6**	46.7 46.7	55.0 55.0		
			1		*6.0*	*~~61.7~~* ***61.9***	*~~53.3~~* ***53.6***	*46.7*	*55.0*	*48.3*	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**
Efficacy after 2 applications												
LEAF1 early	36-41	15	2	*Mean* Min Max	2>			2=	1> 1=			2=
LEAF2 early	36-68	15-19	9	Mean Min Max	7= 2>				9=			
			3	*Mean*	2=	3=			3=	3=		
				Min Max	1>							
			5	*Mean* Min Max	5=		5=		5=		5=	
			3	*Mean* Min Max	2= 1>			3=	3=			3=
LEAF3 early	31-68	14-19	16	Mean Min Max	11= 5>				13= 3>			
			9	*Mean* Min Max	6= 3>	9=			7= 2>	9=		
			10	*Mean* Min Max	8= 2>		9= 1>		8= 2> 1<		9= 1<	
			2	*Mean* Min Max	1= 1>			2=	1= 1>			2=
LEAF4 early	43-66	15-16	3	*Mean* Min Max	3=				3=			
			1		1=			1=	1=			1=
			2	*Mean*	2=	2=			2=	2=		

				Min Max								
			1		1=	1=	1=		1=	1=	1=	

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L
** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-278: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Late assessment timing – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**DELARO 325 SC TFS + PTZ ** 325 g/L SC**
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha 150 g TFS/ha + 175 g PTZ/ha**
Efficacy after 2 applications											
LEAF1 late	50-87	23-34	11	*Mean*	*15.2*	***~~82.2~~ 83.3***	***~~77.7~~ 77.9***	*64.7*			
				Min	5.0	**~~60.8~~ 60.9**	**~~46.7~~ 47.1**	26.0			
				Max	36.6	**100.0**	**100.0**	100.0			
			7	*Mean*	*14.0*	***79.2***	***72.8***	*58.0*	*62.4*		
				Min	5.0	**~~60.8~~ 60.9**	**~~46.7~~ 47.1**	26.0	25.0		
				Max	36.6	**100.0**	**98.0**	96.7	98.0		
			8	*Mean*	*15.3*	***85.1***	***78.0***	*61.8*		*79.9*	
				Min	5.0	**63.3**	**~~46.7~~ 47.1**	26.0		55.0	
				Max	36.6	**100.0**	**100.0**	100.0		100.0	
LEAF2 late	52-85	23-34	9	*Mean*	*14.6*	***80.6***	***~~73.2~~ 73.1***	*51.8*			
				Min	5.3	**~~55.6~~ 55.2**	**~~40.3~~ 40.5**	9.0			
				Max	45.0	**100.0**	**~~100.0~~ 99.3**	92.7			
			6	*Mean*	*8.9*	***76.3***	***67.3***	*39.9*	*65.5*		
				Min	5.3	**~~55.6~~ 55.2**	**~~40.3~~ 40.5**	9.0	34.7		
				Max	12.1	**100.0**	**100.0**	89.4	98.1		
			8	*Mean*	*15.8*	***78.1***	***69.9***	*52.9*		*72.3*	
				Min	7.2	**~~55.6~~ 55.2**	**~~40.3~~ 40.5**	9.0		51.9	
				Max	45.0	**100.0**	**93.8**	92.7		100.0	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**
Efficacy after 2 applications												
LEAF1 late	50-87	23-34	11	*Mean*	7=				9=			
				Min	4>				2>			

				Max								
			7	*Mean* Min Max	4= 3>	6= 1>			6= 1>	6= 1>		
			8	*Mean* Min Max	4= 4>		8=		6= 2>		8=	
LEAF2 late	52-85	23-34	9	*Mean* Min Max	4= 5>				7= 2>			
			6	*Mean* Min Max	2= 4>	5= 1>			3= 3>	6=		
			8	*Mean* Min Max	3= 5>			8=	5= 3>			7= 1<

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L
** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-279: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Very late assessment timing – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**DELARO 325 SC TFS + PTZ ** 325 g/L SC**
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha** **150 g TFS/ha + 175 g PTZ/ha**
Efficacy after 2 applications											
LEAF1 very late	51-84	35-42	11	Mean Min Max	9.9 4.3 17.4	~~79.1~~ **79.3** ~~49.6~~ **50.0** ~~98.0~~ **99.0**	**72.4** ~~43.2~~ **43.5** ~~96.0~~ **96.5**	59.0 30.5 92.0			
			4	Mean Min Max	11.7 4.3 17.4	**73.0** ~~49.6~~ **50.0** **96.0**	**64.8** ~~43.2~~ **43.5** **93.1**	61.3 30.5 92.0			71.9 49.6 96.6
			5	Mean Min Max	8.7 5.0 13.3	**81.6** **55.6** ~~98.0~~ **99.0**	**79.9** **57.9** ~~96.0~~ **96.5**	61.6 45.9 89.1	77.8 49.6 96.0		
			6	Mean Min Max	8.1 5.0 10.9	**87.1** **74.7** ~~98.0~~ **99.0**	**79.9** **67.0** ~~96.0~~ **96.5**	59.7 37.3 89.1		81.8 68.8 96.0	

LEAF2 very late	*59-84*	*35-45*	*8*	*Mean*	*20.1*	***~~84.0~~ 84.2***	***~~79.1~~ 79.0***	*62.0*			
				Min	5.2	**67.1**	**63.6**	34.7			
				Max	42.9	**93.8**	**~~95.4~~ 95.7**	90.2			
			3	*Mean*	*14.1*	***85.5***	***81.2***	*73.4*			*80.1*
				Min	5.2	**78.5**	**70.8**	49.2			61.5
				Max	30.6	**91.5**	**90.2**	90.2			92.2
			5	*Mean*	*23.7*	***83.2***	***77.8***	*55.2*	*78.1*		
				Min	13.0	**67.1**	**63.6**	34.7	58.8		
				Max	42.9	**93.8**	**~~95.4~~ 95.7**	90.0	93.1		
			4	*Mean*	*22.4*	***84.8***	***79.6***	*56.5*	*83.0*	*82.6*	
				Min	13.0	**67.1**	**63.6**	34.7	72.3	72.5	
				Max	42.9	**93.8**	**~~95.4~~ 95.7**	90.0	93.1	91.5	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**
Efficacy after 2 applications												
LEAF1 very late	51-84	35-42	11	Mean	4=				5=			
				Min	7>				6>			
				Max								
			4	Mean	2=			4=	3=			3=
				Min	2>				1<			1<
				Max								
			5	Mean	2=	5=			3=	5=		
				Min	3>				2>			
				Max								
			6	Mean	1=		5=		2=		5=	
				Min	5>		1>		4>		1<	
				Max								
LEAF2 very late	*59-84*	*35-45*	*8*	*Mean*	3=				3=			
				Min	5>				5>			
				Max								
			3	*Mean*	2=			3=	2=			3=
				Min	1>				1>			
				Max								
			5	*Mean*	4>	4=			1=	4>		
				Min	1=	1>			4>	1=		
				Max								
			4	*Mean*	3>	4=	4=		1=	4=	4=	

				Min Max	1=				3>			

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L
** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-280: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 1 application – Late and Very late assessment timings – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**DELARO 325 SC TFS + PTZ ** 325 g/L SC**
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha 150 g TFS/ha + 175 g PTZ/ha**
Efficacy after 1 application											
LEAF2 late	26		1		4.8	**100.0**	**100.0**	100.0			100.0
LEAF3 late	21-26		2	*Mean* Min Max	*8.5* 6.3 10.7	***96.0*** ~~92.1~~ **92.0** **100.0**	***~~95.2~~ 95.0*** ~~90.5~~ **90.0** **100.0**	*92.1* 84.1 100.0			*96.8* 93.7 100.0
LEAF4 late	25		1		*7.2*	***~~75.0~~ 74.8***	***~~76.4~~ 77.0***	*50.0*	*69.4*		
LEAF2 very late	49		1		*6.7*	***~~97.0~~ 97.2***	***~~94.0~~ 93.5***	*89.6*	*86.6*	*86.6*	
LEAF3 very late	49		1		*6.4*	***~~95.3~~ 95.5***	***~~93.8~~ 94.1***	*87.5*	*90.6*	*84.4*	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**DELARO 325 SC 1.0 L/ha**
Efficacy after 1 application												
LEAF2 late	26		1		1=			1=	1=			1=
LEAF3 late	21-26		2	*Mean* Min Max	2=			2=	2=			2=
LEAF4 late	25		1		1=	1=			1>	1=		
LEAF2 very late	49		1		1=	1=	1=		1=	1=	1=	
LEAF3 very late	49		1		1=	1=	1=		1=	1=	1=	

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L
** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date "early" (15 DA-B), when considering **leaf 1,** on average of 2 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 79.5% and 84.0%) was higher than the reference standard product CA2702 (61.3%), and equivalent to DELARO 325 SC (86.4%).
The level of infection observed in the untreated check was 4.4% severity.
When considering the individual assessments, the efficacy reached by CA3642 was statistically higher than the one achieved by CA2702 in all 2 assessments at 1.4 L/ha, in 1 assessment out of 2 at 1.2 L/ha; and no statistical difference was detected at both rates between test product and DELARO 325 SC in all 2 assessments.

At assessment date "early" (15-19 DA-B), when considering leaf 2, on average of 9 assessments, test product CA3642 applied at 1.2 or 1.4 L/ha achieved higher level of efficacy (respectively 82.1% and 84.1%) compared to the reference product CA2702 (70.6%).
The level of infection observed in the untreated check was 9.2% severity.
When considering the individual assessments, the efficacy reached by CA3642 at 1.2 L/ha was not statistically higher than the one achieved by CA2702 in all 9 assessments, and at 1.4 L/ha it was statistically higher in 2 assessments out of 9; but at both rates the efficacy of test product CA3642 was numerically higher in 7 assessments out of 9.

On average of 3 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 80.4% and 82.9%) was equivalent to CA2445 (78.7%).
The level of infection observed in the untreated check was 7.9% severity.
When considering the individual assessments, no statistical difference was detected between test product and CA2445 in all 3 assessments, at both rates.

On average of 5 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 91.0% and 89.2%) was equivalent to OSIRIS 65 EC (86.5%).
The level of infection observed in the untreated check was 9.4% severity.
When considering the individual assessments, no statistical difference was detected between test product and OSIRIS 65 EC in all 5 assessments, at both rates.

On average of 3 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 76.1% and 80.8%) was equivalent to DELARO 325 SC (83.4%).
The level of infection observed in the untreated check was 8.3% severity.
When considering the individual assessments, no statistical difference was detected between test product and DELARO 325 SC in all 3 assessments, at both rates.

At assessment date "early" (14-19 DA-B), when considering leaf 3, on average of 16 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 78.7% and 82.2%) was higher than the reference standard product CA2702 (66.3%),
The level of infection observed in the untreated check was 10.2% severity.
When considering the individual assessments, the efficacy reached by CA3642 was statistically higher than the one achieved by CA2702 in 3 assessments out of 16, at 1.2 L/ha, and in 5 assessments out of 16, at 1.4 L/ha; but it was numerically higher in 10 assessments out of 16, at both rates.

On average of 9 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 71.5% and 77.2%) was equivalent to CA2445 (74.1%).
The level of infection observed in the untreated check was 10.4% severity.
When considering the individual assessments, no statistical difference was detected between test product and CA2445 in all 9 assessments, at both rates. At the highest dose the test product showed an efficacy numerically higher in 1 assessment and numerically lower in 2 assessments out of 9, com-

pared to CA2445. At the lowest dose, the test product showed an efficacy numerically lower than CA2445 in 2 assessments out of 9.

On average of 10 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 81.4% and 84.4%) was equivalent to OSIRIS 65 EC (77.9%).
The level of infection observed in the untreated check was 9.6% severity.
When considering the individual assessments, the efficacy reached by CA3642 applied at 1.2 L/ha was statistically higher than the one achieved by OSIRIS 65 EC in 1 assessment out of 10 and lower in 1 assessment, but numerically higher in 5 assessments out of 10; the efficacy reached by CA3642 applied at 1.4 L/ha was statistically higher than the one achieved by OSIRIS 65 EC in 1 assessment out of 10, but numerically higher in 3 assessments out of 10.

On average of 2 assessments, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 93.1% and 92.7%) and refence product DELARO 325 SC (92.7%).
The level of infection observed in the untreated check was 5.1% severity.

At assessment date "early" (15-16 DA-B), when considering leaf 4, on average of 3 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha (76.8%) was slightly higher than the reference standard product CA2702 (71.9%), and at 1.4 L/ha was numerically higher than CA2702 (81.8% vs 71.9%)
The level of infection observed in the untreated check was 6.9% severity.
When considering the individual assessments, no statistical difference was detected between test product and CA2702 in all 3 assessments, at both rates, but the efficacy reached by CA3642 applied at 1.4 L/ha was numerically higher than the one achieved by CA2702 in 2 assessments out of 3.

On average of 2 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 66.7% and 74.2%) was statistically equivalent to CA2445 (62.2%).
The level of infection observed in the untreated check was 6.8% severity.
When considering the individual assessments, no statistical difference was detected between test and reference products in all 2 assessments, but the efficacy reached by CA3642 was numerically higher than the one achieved by CA2445 in 1 assessment out of 2, at both rates.

In 1 assessment, no statistical difference was detected between test product CA3642 and OSIRIS 65 EC, at both rates (53.3% and 61.7% vs 48.3%), but when applied at 1.4 L/ha the test products showed numerically higher efficacy than reference product.
The level of infection observed in the untreated check was 6.0% severity.

In 1 assessment, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (both 97.2%) was statistically equivalent to DELARO 325 SC (94.4%).
The level of infection observed in the untreated check was 7.1% severity.

At assessment date "late" (23-34 DA-B), when considering leaf 1, on average of 11 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 77.7% and 83.2%) was higher than the reference standard product CA2702 (64.7%).
The level of infection observed in the untreated check was 15.2% severity.
When considering the individual assessments, the efficacy reached by CA3642 applied at 1.2 L/ha was statistically higher than the one achieved by CA2702 in 2 assessments out of 11, but numerically higher in 6 assessments out of 11; the efficacy reached by CA3642 applied at 1.4 L/ha was statistically higher than the one achieved CA2702 in 4 assessments out of 11, but numerically higher in 7 assessments out of 11.

On average of 7 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 72.8% and 79.2%) was higher to CA2445 (62.4%).
The level of infection observed in the untreated check was 14.0% severity.

When considering the individual assessments, statistical difference was detected between test and reference product in only 1 assessment out of 7, but the efficacy reached by CA3642 was numerically higher than the one achieved by CA2445 in 4 assessments out of 7 at 1.4 L/ha, and in 3 assessments out of 7 at 1.2 L/ha.

On average of 8 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha was comparable to the one reached by OSIRIS 65 EC (78.0% vs 79.9%), and applied at 1.4 L/ha it was higher to the reference (85.1% vs 79.9%).
The level of infection observed in the untreated check was 15.3% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product at both rates, but the efficacy reached by CA3642 was numerically higher than the one achieved by OSIRIS 65 EC in 2 assessments out of 8 at 1.4 L/ha, and lower in 1 assessment out of 8 at 1.2 L/ha.

At assessment date "late" (23-34 DA-B), when considering leaf 2, on average of 9 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 73.2% and 80.6%) was higher than the reference standard product CA2702 (51.8%).
The level of infection observed in the untreated check was 14.6% severity.
When considering the individual assessments, the efficacy reached by CA3642 applied at 1.2 L/ha was statistically higher than the one achieved by CA2702 in 3 assessments out of 9, but numerically higher in 6 assessments out of 9; the efficacy reached by CA3642 applied at 1.4 L/ha was statistically higher than the one achieved CA2702 in 5 assessments out of 9, but numerically higher in 7 assessments out of 9.

On average of 6 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha was comparable to and applied at 1.4 L/ha was higher to CA2445 (respectively 67.3% and 76.3% vs 65.5%).
The level of infection observed in the untreated check was 8.9% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product, at 1.2 L/ha; at 1.4 L/ha, the efficacy reached by CA3642 was statistically higher than the one achieved by CA2445 in 1 assessment out of 6, but numerically higher in 4 assessments out of 6.

On average of 8 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha was comparable to and applied at 1.4 L/ha was higher to OSIRIS 65 EC (respectively 69.9% and 78.1% vs 72.3%).
The level of infection observed in the untreated check was 15.8% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product at both rates, except for 1 assessment out of 8 where the efficacy reached by CA3642, at 1.2 L/ha, was statistically lower than the one achieved by OSIRIS 65 EC.

At assessment date "very late" (35-42 DA-B), when considering leaf 1, on average of 11 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 72.4% and 79.1%) was higher than the reference standard product CA2702 (59.0%).
The level of infection observed in the untreated check was 9.9% severity.
When considering the individual assessments, the efficacy reached by CA3642 applied at 1.2 L/ha was statistically higher than the one achieved by CA2702 in 7 assessments out of 11; at 1.4 L/ha it was statistically higher than the reference product in 7 assessments out of 11.

On average of 5 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha was comparable to CA2445 (respectively 79.9% and 81.6% vs 77.8%).
The level of infection observed in the untreated check was 8.7% severity.
No statistical difference was observed in the individual assessments.

On average of 6 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha was comparable to and applied at 1.4 L/ha was higher to OSIRIS 65 EC (respectively 79.9% and 87.1% vs 81.8%).

The level of infection observed in the untreated check was 8.1% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product at both rates, except for 1 assessment out of 6 where the efficacy reached by CA3642, at 1.2 L/ha, was statistically lower than the one achieved by OSIRIS 65 EC, and 1 assessment out of 6 where the efficacy reached by CA3642, at 1.4 L/ha, was statistically higher than the one achieved by OSIRIS 65 EC (it was numerically higher in 2 assessments out of 6).

On average of 4 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha was comparable to DELARO 325 SC (respectively 64.8% and 73.0% vs 71.9%).
The level of infection observed in the untreated check was 11.7% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product at both rates, except for 1 assessment out of 4 where the efficacy reached by CA3642, at 1.2 L/ha, was statistically lower than the one achieved by DELARO 325 SC.

At assessment date "very late" (35-45 DA-B), when considering leaf 2, on average of 8 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 79.1% and 84.0%) was higher than the reference standard product CA2702 (62.0%).
The level of infection observed in the untreated check was 20.1% severity.
When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher to the one achieved by CA2702 in 5 assessments out of 8.

On average of 5 assessments, test product CA3642 applied at 1.2 L/ha showed an efficacy comparable to the one reached by CA2445 (77.8% vs 78.1%) and applied at 1.4 L/ha it showed an efficacy higher than the reference (83.2% vs 78.1%).
The level of infection observed in the untreated check was 23.7% severity.
When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher to the one achieved by CA2445 in 1 assessment out of 5.

On average of 4 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha was comparable to and applied at 1.4 L/ha was higher to OSIRIS 65 EC (respectively 79.6% and 84.8% vs 82.6%).
The level of infection observed in the untreated check was 22.4% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product at both rates, but the efficacy reached by CA3642 was numerically higher than the one achieved by OSIRIS 65 EC in 2 assessments out of 4 at 1.4 L/ha, and in 1 assessment out of 4 at 1.2 L/ha.

On average of 3 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha was comparable to DELARO 325 SC (respectively 81.2% and 85.5% vs 80.1%).
The level of infection observed in the untreated check was 14.1% severity.
When considering the individual assessments, no statistical difference was detected between test and reference product at both rates. In 1 assessment out of 3, at both rates, CA3642 showed an efficacy numerically higher than DELARO 325 SC.

After one application of CA3642 applied at 1.2-1.4 L/ha

At assessment date "late" (26 DA-A), when considering leaf 2, in 1 assessment, test product CA3642 applied at 1.4 or 1.2 L/ha and reference products CA2702 and DELARO 325 SC all achieved 100% performance. The level of infection observed in the untreated check was 4.8% severity.

At assessment date "late" (21-26 DA-A), when considering **leaf 3,** on average of 2 assessments, no statistically significant difference was observed between test product CA3642 applied at 1.4 or 1.2 L/ha and reference products CA2702 and DELARO 325 SC (respectively 96.0% and 95.2% vs 92.1% and 96.8%). The level of infection observed in the untreated check was 8.5% severity.

At assessment date "late" (25 DA-A), when considering **leaf 4,** in 1 assessment, mean efficacy of test product CA3642 applied at 1.4 or 1.2 L was assessed compared to both reference products CA2702 and CA2445 (respectively 75.0% and 76.4% vs 50.0% and 69.4%), A numerically higher performance of test product was observed compared to CA2702 and for the 1.2 L/ha rate the dfference was significant. Performance of CA3642 compared to CA2445 was equivalent. The level of infection observed in the untreated check was 7.2% severity.

At assessment date "very late" (49 DA-A), when considering leaf 2, in 1 assessment, no statistically significant difference was observed between test product CA3642 applied at 1.4 or 1.2 L/ha (respectively 97.0% and 94.0%) and reference products CA2702 (89.6%), CA2445 (86.6%), and OSIRIS 65 EC (86.6%), although a numerically higher performance of test product at 1.4 L/ha was observed compared to CA2445 and OSIRIS 65 EC (97.0% vs 86.6%). The level of infection observed in the untreated check was 6.7% severity.

At assessment date "very late" (49 DA-A), when considering **leaf 3,** in 1 assessment, no statistically significant difference was observed between test product CA3642 applied at 1.4 or 1.2 L/ha (respectively 95.3% and 93.8%) and reference products CA2702 (87.5%), CA2445 (90.6%), and OSIRIS 65 EC (84.4%), although a numerically higher performance of test product at both rates was observed compared to OSIRIS 65 EC. The level of infection observed in the untreated check was 6.4% severity.

Comments of zRMS:

26 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good effectiveness after 2 applications, either the early and late assessments. In the early assessment, the mean efficacy was 79,3-85% on L1, 81,3-84,3% on L2, 78,8-82,3% on L3 and 76,7-81,7% on L4. The test product at claimed doses presented results of 77,9-83,3% on L1 and 73,1-80,6% on L2 in the late assessment. Comparable effectiveness was observed in the very late assessment. No significant differences between test and reference products Osiris and Delaro have been noted. CA2702 and CA2445 achieved similar or slight inferior results. High effectiveness have been noted after 1 application. CA3642 at 1,2-1,4 l/ha had the mean efficacy of >90% on L2 and L3 in the late and very late assessments. The same level of control was detected for the reference products.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of SEPTTR in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – SEPTTR – South-East EPPO zone

15 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the South-East EPPO zone. The trials were carried out in Bulgaria (2), Hungary (9) and Romania (4) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 33 and the second application was done 17 - 41 days later, at BBCH 39 – 59.

Table 3.2-281: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Early assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC	NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha	0.6 L/ha 90 g TFS/ha + 105 g PTZ/ha
Efficacy after 2 applications												
LEAF2 early	37	15	*2*	*Mean*	*4.9*	***84.1***	*~~87.2~~* ***87.5***	*83.1*				
				Min	4.3	~~79.1~~ **78.7**	~~83.7~~ **84.2**	79.1				
				Max	5.4	~~88.9~~ **89.5**	**90.7**	87				
			1		4.3	*~~79.1~~* ***78.7***	*~~83.7~~* ***84.2***	*79.1*			*83.7*	
			1		5.4	*~~88.9~~* ***89.5***	***90.7***	*87*				*88.9*
LEAF3 early	37	15	*3*	*Mean*	*18.7*	*~~74.2~~* ***74.5***	*~~74.3~~* ***74.2***	*66.9*				
				Min	7.7	~~48.3~~ **48.5**	~~47.7~~ **47.8**	52.6				
				Max	30.2	~~89.6~~ **90.2**	~~88.3~~ **87.8**	75.3				
			2	*Mean*	*24.3*	*~~66.5~~* ***66.6***	*~~67.3~~* ***67.4***	*62.7*			*64.8*	
				Min	18.3	~~48.3~~ **48.5**	~~47.7~~ **47.8**	52.6			49.3	
				Max	30.2	**84.7**	**86.9**	72.7			80.3	
			1		*7.7*	*~~89.6~~* ***90.2***	*~~88.3~~* ***87.8***	*75.3*				*71.4*
LEAF4 early	37 - 42	14 - 15	*2*	*Mean*	*56.3*	***92***	***90.1***	*82.9*				
				Min	12.6	**84.1**	~~80.2~~ **80.1**	65.9				
				Max	100	**100**	**100**	99.9				
			1		*12.6*	***84.1***	*~~80.2~~* ***80.1***	*65.9*				*71.4*
			1		*100*	***100***	***100***	*99.9*	*99.9*			

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	CA3642 at 1.4 L/ha compared to					CA3642 at 1.2 L/ha compared to				
					CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	NATIVO PRO 325 SC 0.6 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAXOR 1.5 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	NATIVO PRO 325 SC 0.6 L/ha
Efficacy after 2 applications														
LEAF2 early	37	15	*2*	*Mean* Min Max	2=					2=				
			1		1=			1=		1=			1=	
			1		1=				1=	1=				1=
LEAF3 early	37	15	*3*	*Mean* Min Max	3=					3=				
			2	*Mean* Min Max	2=			2=		2=			2=	
			1		1=				1=	1=				1=
LEAF4 early	37 - 42	14 - 15	*2*	*Mean* Min Max	2>					2>				
			1		1>				1>	1>				1=
			1		1>	1=				1>	1=			

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-282: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Late assessments – South-East EPPO zone

Leaf level	DA-A	DA-B	No. of	Name	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ)	CA2702 AZX	CA2445 PTZ	PRIAXOR PCS +	AVIATOR XPRO 225 EC	NATIVO PRO 325 SC

assm. Tim-ing			trials & ARM	Conc Type Rate		300 g/L SC		250 g/L SC	250 g/L EC	FLX* 225 g/L EC	BXF + PTZ** 225 g/L EC	TFS + PTZ*** 325 g/L SC
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha	0.6 L/ha 90 g TFS/ha + 105 g PTZ/ha
Efficacy after 2 applications												
LEAF1 late	53 - 69	28 - 33	*4*	*Mean*	*14.3*	***76.7***	***72.3***	*70.5*				
				Min	9	**25.2**	~~18~~ **17.9**	7.5				
				Max	26.6	~~99.5~~ **99.6**	**99.4**	98.1				
			1		*10.3*	***99.6***	***99.4***	*98.1*	*99.2*			
			2	*Mean*	*10.1*	***91.1***	***85.9***	*88.2*			*91*	
				Min	9	**91**	**78.4**	82			86.5	
				Max	11.1	**91.1**	**93.3**	94.4			95.6	
			1		*26.6*	***25.2***	~~*18*~~ ***17.9***	*7.5*				*34.2*
LEAF2 late	53 - 60	28 - 33	*4*	*Mean*	*37.6*	~~*92.5*~~ ***92.6***	***93.4***	*91*				
				Min	7.3	~~84.5~~ **84.7**	~~82.4~~ **82.5**	79				
				Max	100	**99.9**	**99.9**	99.3				
			2	*Mean*	*21.6*	~~*85.7*~~ ***85.9***	***87.3***	*82.8*			*88.6*	
				Min	19.3	~~84.5~~ **84.7**	~~82.4~~ **82.5**	79			88.1	
				Max	23.8	**87**	**92.2**	86.5			89.1	
			2	*Mean*	*53.7*	***99.2***	***99.5***	*99.2*	*99.6*			
				Min	7.3	**98.5**	**99.2**	99.2	99.3			
				Max	100	**99.9**	**99.9**	99.3	99.9			
LEAF3	49	32	*1*		*4.8*	~~*90.9*~~ ***91.1***	~~*87.8*~~ ***87.9***	*91.4*		*92.4*		

late														
Leaf level assm. Tim-ing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**					**CA3642 at 1.2 L/ha compared to**				
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRI-AXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**
Efficacy after 2 applications														
LEAF1 late	53 - 69	28 - 33	*4*	*Mean* Min Max	3= 1>					4=				
			1		1=	1=				1=	1=			
			2	*Mean* Min Max	2=			2=		2=			2=	
			1		1>				1<	1=				1<
LEAF2 late	53 - 60	28 - 33	*4*	*Mean* Min Max	3= 1>					3= 1>				
			2	*Mean* Min Max	2=			2=		2=			2=	
			2	*Mean* Min Max	1= 1>	2=				1= 1>	2=			
LEAF3 late	49	32	*1*		1=		1=			1=		1=		

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-283: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 2 applications – Very late assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC	NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC
						1.4 L/ha	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.5 L/ha**	**1.25 L/ha**	**0.6 L/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**225 g PCS/ha + 112.5 g FLX/ha**	**93.75 g BXF/ha + 187.50 g PTZ/ha**	**90 g TFS/ha + 105 g PTZ/ha**
Efficacy after 2 applications												
LEAF1 very late	60 - 67	38 - 48	*6*	*Mean*	*19.6*	***72.9***	***72.9***	*67.4*				
				Min	10.9	**41.7**	~~23.2~~ **23.6**	25.8				
				Max	19.6	~~72.9~~ **97.9**	~~72.9~~ **98.7**	67.4				
			1		*15.1*	***41.7***	~~23.2~~ ***23.6***	*25.8*				*56.3*
			2	*Mean*	*22.4*	***91.7***	***89.4***	*88*	*86*	*98.2*		
				Min	10.9	**91.7**	**86.1**	83.5	78.9	96.3		
				Max	33.8	**91.7**	**92.7**	92.6	93.2	100		
			5	*Mean*	*20.5*	***79.1***	***82.9***	*75.7*		*91.3*		
				Min	10.9	**53.8**	**58.7**	25.9		71.5		
				Max	33.8	**97.9**	**98.6**	94.4		100		
LEAF2 very late	57 - 79	38 - 45	*8*	*Mean*	*27.7*	***72***	***70.3***	*69.7*				
				Min	13.7	~~6.6~~ **6.4**	~~12.4~~ **12.9**	26.8				
				Max	56.5	**100**	**100**	99.5				
			1		22	***34.5***	***28.2***	*26.8*				*45*
			5	*Mean*	*29.9*	***87.1***	***84.3***	*77.9*	*80*	*92.9*		
				Min	18.	**79**	**68.1**	58	72.6	77.3		

				n	1							
				Max	56.5	**100**	**100**	98.7	83.9	100		
			7	*Mean*	*28.5*	***77.3***	***76.3***	*75.8*		*87.5*		
				Min	13.7	~~6.6~~ **6.4**	~~12.4~~ **12.9**	41.6		48.2		
				Max	56.5	**100**	**100**	99.5		100		
LEAF3 very late	57 - 69	40 - 47	*2*	*Mean*	*14.2*	~~*65.2*~~ ***65.4***	~~*51.9*~~ ***52.1***	*76*		*64.4*		
				Min	8.4	~~59.5~~ **59.9**	**44.4**	75.9		50		
				Max	19.9	**70.9**	**59.8**	76.2		78.9		

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**					**CA3642 at 1.2 L/ha compared to**				
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRI-AXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**
Efficacy after 2 applications														
LEAF1 very late	60 - 67	38 - 48	*6*	*Mean* Min Max	6=					6=				
			1		1=				1=	1=				1<
			2	*Mean* Min Max	2=	2=	2=			2=	2=	2=		
			5	*Mean* Min	5=		5=			5=		5=		

				Max										
LEAF2 very late	57 - 79	38 - 45	*8*	*Mean* Min Max	6= 2>					6= 1> 1<				
			1		1=				1=	1=				1<
			5	*Mean* Min Max	4= 1>	3= 2>	3= 2>			3= 1> 1<	2= 2> 1<	3= 2>		
			7	*Mean* Min Max	6= 1>		5= 2>			5= 1> 1<		5= 2<		
LEAF3 very late	57 - 69	40 - 47	*2*	*Mean* Min Max	2=		2=			2=		2=		

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-284: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against SEPTTR – 1 application – Late assessments – South-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX* 225 g/L EC**	**AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC**	**NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC**
						1.4 L/ha	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.5 L/ha**	**1.25 L/ha**	**0.6 L/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**225 g PCS/ha + 112.5 g FLX/ha**	**93.75 g BXF/ha + 187.50 g PTZ/ha**	**90 g TFS/ha + 105 g PTZ/ha**

Efficacy after 1 application											
LEAF4 late	21 - 22		*3*	*Mean*	*13.2*	***74.9***	~~71.2~~ ***71.1***	*57.2*				
				Min	7.2	~~73.6~~ **73.9**	~~62.5~~ **62.1**	37.5				
				Max	17.3	~~77.5~~ **77.4**	~~78.6~~ **78.5**	72.8				
			2	*Mean*	*16.3*	***75.6***	***75.5***	*67*			*80.9*	
				Min	15.2	**73.7**	**72.4**	61.2			76.3	
				Max	17.3	~~77.5~~ **77.4**	~~78.6~~ **78.5**	72.8			85.5	
			1		*7.2*	~~73.6~~ ***73.9***	~~62.5~~ ***62.1***	*37.5*				*54.2*

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	CA3642 at 1.4 L/ha compared to: CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	NATIVO PRO 325 SC 0.6 L/ha	CA3642 at 1.2 L/ha compared to: CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAXOR 1.5 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	NATIVO PRO 325 SC 0.6 L/ha
Efficacy after 1 application														
LEAF4 late	21 - 22		*3*	*Mean*	2=					2=				
				Min	1>					1>				
				Max										
			2	*Mean*	2=			2=		2=			2=	
				Min										
				Max										
			1		1>				1>	1>				1=

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

<u>After 2 applications of CA3642 applied at 1.2 – 1.4 L/ha</u>

At leaf level 2, assessment date "early" (15 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 4.3-5.4% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 87.2% and 84.0%) compared to CA2702 (83.1%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product NATIVO PRO 325SC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed comparable efficacy (respectively 90.7% and 88.9%) compared to NATIVO PRO 325SC (88.9%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically equivalent to the reference product NATIVO PRO 325SC.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 83.7% and 79.1%) compared to AVIATOR XPRO 225EC (83.7%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically equivalent to the reference product AVIATOR XPRO 225EC in this trial.

At leaf level 3, assessment date "early" (15 DA-B), the performance of CA3642 was assessed in a total of 3 trials. Infestation levels (UTC) in the trials ranged from 7.7 – 30.2% severity. In 3 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 3 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 3 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 74.3% and 74.2%) compared to CA2702 (66.9%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702.
On average of 2 trials, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 67.3% and 66.5%) compared to AVIATOR XPRO 225EC (64.8%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically equivalent to the reference product AVIATOR XPRO 225EC in these trials.
In 1 trial, the performance of CA3642 applied at both doses was compared to the reference product NATIVO PRO 325SC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed higher efficacy (respectively 88.3% and 89.6%) compared to NATIVO PRO 325SC (71.4%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product NATIVO PRO 325SC.

At leaf level 4, assessment date "early" (14-15 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 12.6-100% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 90.1% and 92.0%) compared to CA2702 (82.9%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically superior to the reference product CA2702 in all trials.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product CA2445. CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (100%) compared to CA2445 (99.9%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically equivalent to the reference product CA2445 in this trial.

In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product NATIVO PRO 325SC. CA3642 applied at 1.4L/ha showed higher efficacy (84.1%) compared to NATIVO PRO 325SC (71.4%). CA3642 at 1.4L/ha was statistically superior to the reference product NATIVO PRO 325SC in this trial. CA3642 at the rate of 1.2 L/ha delivered a level of control statistically superior (80.2%) to NATIVO PRO 325SC (71.4%).

At leaf level 1, assessment date “late” (28-33 DA-B), the performance of CA3642 was assessed in a total of 4 trials. Infestation levels (UTC) in the trials ranged from 9.0-26.6% severity. In 4 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 4 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 4 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 72.3% and 76.7%) compared to CA2702 (70.5%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702 except in 1 trial where CA3642 at 1.4 L/ha was statistically superior to the reference product.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 85.9% and 91.1%) compared to AVIATOR XPRO 225EC (91.0%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product AVIATOR XPRO 225EC.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product CA2445.
CA3642 applied at 1.2 L/ha and 1.4L/ha showed comparable efficacy (respectively 99.4% and 99.5%) compared to CA2445 (99.2%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2445.

In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product NATIVO PRO 325 SC. CA3642 applied at 1.4L/ha showed equivalent efficacy (25.2%) compared to NATIVO PRO 325 SC (34.2%).. At 1.2L/ha, CA3642 delivered lower efficacy (18.0%) compared to NATIVO PRO 325 SC (34.2%). CA3642 at 1.2L/ha and 1.4L/ha was statistically inferior to the reference product NATIVO PRO 325 SC in this trial.

At leaf level 2, assessment date “late” (28-33 DA-B), the performance of CA3642 was assessed in a total of 4 trials. Infestation levels (UTC) in the trials ranged from 7.3-100% severity. In 4 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 4 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 4 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 93.4% and 92.5%) compared to CA2702 (91.0%). Statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702 in 1trial out of 4.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 87.3% and 85.7%) compared to AVIATOR XPRO 225EC (88.6%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product AVIATOR XPRO 225EC.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2445.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 99.5% and 99.2%) compared to CA2445 (99.6%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2445.

At assessment date “late” (32 DA-B), when considering **leaf 3**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and PRIAXOR. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (respectively 87.8% and 90.9%) than CA2702 (91.4%) and PRIAXOR (92.4 %). The level of infection observed in the untreated check was 4.75% severity.

At leaf level 1, **assessment date “very late”** (38-48 DA-B), the performance of CA3642 was assessed in a total of 6 trials. Infestation levels (UTC) in the trials ranged from 10.9-19.6% severity. In 6 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments except in one trial where CA3642 at 1.4L/ha was statistically equivalent than the untreated control.
In 6 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 6 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (72.9%) compared to CA2702 (67.4%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702.
In 5 trials, the performance of CA3642 applied at both dose was compared to the reference product PRIAXOR.
On average of 5 trials, CA3642 applied at 1.2 L/ha showed equivalent efficacy (82.9%) compared to PRIAXOR (91.3%). At 1.4L/ha, CA3642 showed lower efficacy (79.1%) compared to PRIAXOR (91.3%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product PRIAXOR.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2445.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 89.4% and 91.7%) compared to CA2445 (86.0%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2445.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product NATIVO PRO 325SC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed lower efficacy (respectively 23.2% and 41.7%) compared to NATIVO PRO 325SC (56.3%). No statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product NATIVO PRO 325SC. But at 1.2L/ha, CA3642 was statistically inferior to the reference product NATIVO PRO 325SC in this trial.

At leaf level 2, assessment date “very late” (38-45 DA-B), the performance of CA3642 was assessed in a total of 8 trials. Infestation levels (UTC) in the trials ranged from 13.7-56.5% severity. In 8 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments except in one trial where CA3642 at 1.2 L/ha and 1.4L/ha and the reference products were statistically equivalent than the untreated control.
In 8 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 8 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 70.3% and 72.0%) compared to CA2702 (69.7%). CA3642 at 1.2L/ha and 1.4L/ha was statistically superior to the reference product CA2702 in 1 trial out of 8. In 1 trial out of 8, CA3642 at 1.2L/ha was statistically inferior to the reference product CA2702.
In 7 trials, the performance of CA3642 applied at both dose was compared to the reference product PRIAXOR.
On average of 7 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 76.3% and 77.3%) compared to PRIAXOR (87.5%). CA3642 at 1.2L/ha and 1.4L/ha was statistically inferior to the reference product PRIAXOR in 2 trials out of 7.
In 5 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2445.
On average of 5 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 84.3% and 87.1%) compared to CA2445 (80.0%). CA3642 at 1.2L/ha and 1.4L/ha was statistically superior to the reference product CA2445 in 2 trials out of 5. In 1 trial, CA3642 at 1.2L/ha was statistically inferior to the reference product CA2445.

In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product NATIVO PRO 325SC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed lower efficacy (respectively 28.2% and 34.5%) compared to NATIVO PRO 325SC (45.0%). No statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product NATIVO PRO 325SC. But at 1.2L/ha, CA3642 was statistically inferior to the reference product NATIVO PRO 325SC in this trial.

At leaf level 3, assessment date “very late” (40 - 47 DA-B), the performance of CA3642 was assessed in a total of 2 trials.

In 2 trials, the performance of CA3642 applied at both dose rates showed a mean efficacy of 51.9 – 65.2 %, compared to the mean efficacy for the reference product CA2702 of 76 %, and 64.4 % for the reference product PRIAXOR. No statistically significant difference compared to the reference product was found.

Infestation levels (UTC) in the trials ranged from 8.4 – 19.9 % severity. The reduction of infestation from applications of CA3642 was statistically significant in one of the two trials.

<u>**After 1 application of CA3642 applied at 1.2 – 1.4 L/ha**</u>

At leaf level 4, **assessment date “late”** (21-22 DA-A), the performance of CA3642 was assessed in a total of 3 trials. Infestation levels (UTC) in the trials ranged from 7.2-17.3% severity. In 3 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 3 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 3 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed higher efficacy (respectively 74.9% and 71.2%) compared to CA2702 (57.2%). Statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702 in 1 trial out of 3.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 75.5% and 75.6%) compared to AVIATOR XPRO 225EC (80.9%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product AVIATOR XPRO 225EC.
In 1 assessment, the performance of CA3642 applied at both dose was compared to the reference product NATIVO PRO 325 SC.
CA3642 applied at 1.4L/ha showed higher efficacy (73.6%) compared to NATIVO PRO 325 SC (54.2%). At 1.2L/ha, CA3642 applied at 1.2 L/ha showed equivalent efficacy (62.5%) compared to NATIVO PRO 325 SC (54.2%). Statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product NATIVO PRO 325 SC.

Comments of zRMS:

15 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 84,1-87,5% on L2, 74,2-74,5% on L3 and 90,1-92% on L4 in the early assessment. The test product at claimed doses presented results of 72,3-76,7% on L1, 92,6-93,4% on L2 and 87,9-91,1% on L3. Acceptable control was observed for both dose rates in the very late assessment. Similar effect was presented after 1 application. No significant differences between test and reference products have been noted in most trials.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of SEPTTR in winter wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

Summary of data on SEPTTR in wheat

Data is presented from a total of 73 trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control *Zymoseptoria tritici* (SEPTTR) in winter wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

The data presented supports the claim for registration of CA3642 applied at 1.2 L/ha-1.4 L/ha for control of *Zymoseptoria tritici* (SEPTTR) in wheat.

Winter Wheat (TRZAW) – Powdery mildew (ERYSGR/T – *Blumeria graminis*)

A total of 28 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of *Blumeria graminis* (ERYSGR/T) in winter wheat in the Maritime (9 trials), North-East (11 trials) and South-East (8 trials) EPPO zones.

The trials from the Maritime EPPO zone were carried out in Germany (4), the United Kingdom (2) and Northern France (3).
The trials from the North-East EPPO zone were carried out in Poland (5), Latvia (1) and Lithuania (5).
The trials from the South-East EPPO zone were carried out in Hungary (3), Romania (3) and Slovakia (2).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZAW – ERYSGR/T – Maritime EPPO zone

9 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against ERYSGR/T in the Maritime EPPO zone. The trials were carried out in France (3), Germany (4) and Great Britain (2) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 17 - 37 days later, at BBCH 39 - 59.

Table 3.2-285: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 2 applications - Early assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF2 early	43-53	13-16	~~5~~ *4*	*Mean* Min Max	~~6.4~~ *6.7* 4.1 11.1	~~83.1~~ ***91.1*** ~~50.9~~ **75.0** **100**	~~79.6~~ ***89.4*** ~~40~~ **70.1** **100**	*22.4* 0 100	*84.7* 61.8 100	4> 1=	5=	4> 1=	5=
LEAF3 early	40-53	13-16	*4*	*Mean* Min Max	*11.7* 4.2 15.1	~~93.8~~ ***94.1*** ~~85.7~~ **86.9** **100**	~~92.9~~ ***92.7*** ~~85.7~~ **84.8** **98.7**	*52.3* 11.9 98.6	*90* 85.7 99.3	3> 1=	3= 1>	3> 1=	3= 1>
LEAF4 early	31-49	14-15	*4*	*Mean* Min Max	*22* 10.1 33.4	~~91.3~~ ***91.4*** **80.2** **100**	***90.6*** ~~82.2~~ **82.6** ~~98.4~~ **98.3**	*72.2* 45.5 90.3	*85.8* 69.3 95.7	4>	1= 3>	3= 1>	2= 2>

Table 3.2-286: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 2 applications - Late assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF1 late	60	25	*1*		*4.1*	~~95.1~~ ***94.5***	~~85.4~~ ***85.8***	*29.3*	*87.8*	1>	1=	1>	1=
LEAF2 late	45-60	25-30	~~3~~ 2	*Mean* Min Max	*10.5* 4.4 15.7	~~70~~ ***91.4*** ~~27.3~~ **88.7** ~~94.3~~ **94.1**	~~64.5~~ ***82.2*** ~~29.5~~ **81.9** ~~82.5~~ **82.4**	*26* 0 64	*64.7* 47.7 84.1	~~3~~ 2>	~~2~~ 1= 1>	~~3~~ 2>	~~2~~ 1= 1>
LEAF3 late	45	28	*1*		*16.7*	~~98.8~~ ***98.9***	~~95.2~~ ***95.5***	*57.5*	*100*	1>	1=	1>	1=

Table 3.2-287: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 2 applications – Very late assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 2 applications													
LEAF1 very late	75-81	38-46	*2*	*Mean*	*8.4*	***100***	***100***	*99.6*	*100*	2=	2=	2=	2=
				Min	5.2	**100**	**100**	99.1	100				
				Max	11.5	**100**	**100**	100	100				
LEAF2 very late	59-75	37-42	*3*	*Mean*	*8.2*	***~~97.3~~ 97.4***	***~~92.9~~ 93.1***		*87.5*		2=		3=
				Min	5.4	**~~95.5~~ 95.4**	**84.3**		76.4		1>		
				Max	10.3	**100**	**100**		97.1				
			2	*Mean*	*7.2*	***95.9***	***89.4***	*67.5*	*82.6*	1=	1=	1=	2=
				Min	5.4	**~~95.5~~ 95.4**	**84.3**	51.7	76.4	1>	1>	1>	
				Max	8.9	**96.3**	**94.4**	83.3	88.9				

Table 3.2-288: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 1 application – Valid assessments – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 1 application													
LEAF4 early	15-16		*3*	*Mean*	*7*	***~~76.1~~ 76.3***	***~~77.8~~ 77.6***	*52.6*	*86.5*	1<	2=	1>	2=
				Min	4.4	**63.6**	**~~68.1~~ 67.9**	8.6	77.3	1>	1<	2=	1<
				Max	9.8	**~~93.6~~ 93.5**	**90.3**	84.1	95.2	1=			
LEAF2 late	30		*1*		*6.4*	***~~92.2~~ 92.0***	***87.5***	*23.4*	*98.4*	1>	1=	1>	1=
LEAF3 late	30-34		*2*	*Mean*	*6.4*	***~~88~~ 87.8***	***~~86.6~~ 86.4***	*28.2*	*90.1*	2>	2=	2>	2=

				Min	*4.2*	~~*81*~~ ***80.4***	~~*85.7*~~ ***85.2***	*16.7*	*84.9*				
				Max	*8.5*	***95.1***	***87.6***	*39.7*	*95.2*				
LEAF4 late	28		*1*		*7.2*	~~*77.8*~~ ***77.3***	~~*83.3*~~ **83.4**	*88.9*	*86.1*	1<	1=	1=	1=
LEAF3 very late	37		*1*		*4.1*	~~*97.6*~~ ***96.7***	~~*95.1*~~ ***95.7***	*97.6*	*97.6*	1=	1=	1=	1=
LEAF4 very late	35-37		*2*	*Mean*	*11.7*	***97.1***	~~*94.3*~~ ***94.4***	*91.2*	*97*	2=	2=	2=	2=
				Min	6.7	**94.4**	**91.1**	86.8	97				
				Max	16.7	~~100~~ **99.8**	~~97.6~~ **97.7**	95.5	97				

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date ''early'' (13-16 DA-B), in **leaf level 2**, the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 83.1% and 79.6% respectively. The level of infection observed in the untreated check was 6.4% severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 4 out of 5 the individual assessments.
Performance of CA3642 was equivalent to CA2445 with no statistically significant differences observed in the individual assessments.

In **leaf level 3**, the mean efficacy across 4 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 93.8% and 92.9% respectively. The level of infection observed in the untreated check was 11.7% severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 3 out of 4 the individual assessments.
Performance of CA3642 was equivalent to CA2445 with no statistically significant differences observed in 3 out of 4 the individual assessments.

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date ''late'' (25 DA-B), in **leaf level 1**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 95.1% and 85.4% respectively. The level of infection observed in the untreated check was 4.1% severity.
Performance of CA3642 was higher than CA2702 and this is statistically significant.
Performance of CA3642 was equivalent to CA2445 with no statistical difference.

In **leaf level 2**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 70% and 64.5% mean efficacy respectively across 3 trials. The level of infection observed in the untreated check was 10.5% severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant in the 3 individual assessments.
Performance of CA3642 was equivalent to CA2445 on average and this is statistically significant for 1 out of 3 individual assessments.
In **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 98.8% and 95.2% respectively. The level of infection observed in the untreated check was 16.7% severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant.
Performance of CA3642 was equivalent to CA2445 with no statistical difference.

At assessment date ''very late'' (38-46 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 100% mean efficacy respectively across 2 trials. The level of infection observed in the untreated check was 8.4% severity.
Performance of CA3642 was equivalent to CA2702 and CA2445 on average. No statistical differences were observed in the individual assessments.

In leaf level 2, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 97.3% and 92.9% mean efficacy respectively across 3 trials. Across 2 trials, it achieved 95.9% and 89.4% mean efficacy respectively. The level of infection observed in the untreated check was 8.2% severity across 3 trials and 7.2% across 2 trials.
Performance of CA3642 was higher to CA2702 on average of 2 trials and this is statistically significant for 1 out of the 2 individual assessments.
Performance of CA3642 was superior to CA2445 on average of 3 trials. Statistical difference was observed for 1 out of the 3 individual assessments between CA3642 at 1.4 L/ha and CA2445.

After one application of CA3642 applied at 1.2-1.4 L/ha

At assessment date ''late'' (30 DA-A), in **leaf level 2**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 92.2% and 87.5% efficacy respectively. The level of infection observed in the untreated check was 6.4% severity.
Performance of CA3642 at both rates was statistically higher to CA2702.
Performance of CA3642 was comparable to CA2445. No statistical difference was observed.

At assessment date ''late'' (30-34 DA-A), in **leaf level 3**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 88% and 86.6% mean efficacy respectively across 2 trials. The level of infection observed in the untreated check was 6.4% severity.
Performance of CA3642 was statistically higher to CA2702 in both trials.
Performance of CA3642 was equivalent to CA2445 No statistical difference was observed in the individual assessments.
At assessment date ''very late'' (37 DA-A), in **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 97.6% and 95.1% efficacy respectively. The level of infection observed in the untreated check was 4.1% severity.

Performance of CA3642 was comparable to CA2702 and CA2445 with no statistical difference.

Comments of zRMS:

9 efficacy trials were carried out to control of *Blumeria graminis* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 89,4-91,1% on L1, 92,7-94,1% on L3 and 90,6-91,4% on L4 in the early assessment. In the late assessment, the test product at claimed doses presented results of 85,8-94,5% on L1, 82,2-91,4% on L2 and 95,5-98,9% on L3. Excellent control has been noted in the very late assessment. Significant inferior effectiveness was observed in case of CA2702 compared to CA3642. No significant differences between test product and CA2445 were detected. After 1 application, test product at 1,2-1,4 l/ha achieved moderate control in the early assessment and higher effectiveness in the later observations.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of ERYSGR in winter wheat in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – ERYSGR/T – North-East EPPO zone

11 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against ERYSGR/T in the North-East EPPO zone. The trials were carried out in Poland (5), Lithuania (5) and Latvia (1) from 2019 to 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 16 - 49 days later, at BBCH 39 – 61.

Table 3.2-289: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T - 2 applications - Early assessments – North-East EPPO zone

Leaf level assment timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC * 65 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha
Efficacy after 2 applications																
LEAF 2 early	*31-50*	*13-15*	*6*	*Mean*	*8.7*	***89.6***	~~83.5~~ **83.6**	*52.7*			*5>*			*5>*		
				Min	7.3	**68.7**	**63.9**	9.6			*1=*			*1=*		
				Max	10.6	**100.0**	**100.0**	97.0								
			5	*Mean*	*8.4*	***87.5***	***80.6***	*43.9*	*81.2*		*5>*	*5=*		*5>*	*5=*	
				Min	7.3	**68.7**	**63.9**	9.6	49.4							
				Max	10.6	**100.0**	**100.0**	67.1	100.0							
			3	*Mean*	*8.6*	***97.2***	***94.2***	*76.1*		*95.7*	*2>*		*3=*	*2>*		*3=*
				Min	7.3	**91.7**	**84.5**	64.3		88.1	*1=*			*1=*		
				Max	10.1	**100.0**	**100.0**	97.0		100.0						
LEAF3 early	*30-64*	*13-15*	*8*	*Mean*	*15.1*	~~84.7~~ **84.8**	~~76.8~~ **76.7**	*59.7*			*4>*			*4>*		
				Min	5.1	~~54.9~~ **55.5**	~~23.5~~ **23.1**	0.0			4=			4=		
				Max	30.9	~~99.3~~ **99.2**	~~97.4~~ **97.5**	98.7								
			7	*Mean*	*15.1*	***82.6***	***73.8***	*54.1*	*78.7*		4>	7=		4>	7=	
				Min	5.1	~~54.9~~ **55.5**	~~23.5~~ **23.1**	0.0	51.0		3=			3=		
				Max	30.9	**97.1**	**95.4**	90.8	95.5							
			5	*Mean*	*18.7*	***95.0***	***91.7***	*79.6*		*91.5*	3=		4= 1>	3=		4= 1>
				Min	6.5	**90.1**	**81.4**	56.4		83.1	2>			2>		

				Max	30.9	~~99.3~~ **99.2**	~~97.4~~ **97.5**	98.7		99.3						
LEAF4 early	*64*	*15*	*1*		*4.8*	~~*81.3*~~ ***81.8***	~~*91.7*~~ ***92.2***	*77.1*	*93.8*	*83.3*	1=	1=	1=	1=	1=	1=

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

Table 3.2-290: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T - 2 applications - Late and Very late assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
Efficacy after 2 applications																
LEAF2 late	53	23	1		6.8	~~97.1~~ 97.2	~~94.1~~ 93.5	83.8		98.5	1=		1=	1=		1=
LEAF1 very late	70	42	1		6.4	**100.0**	**100.0**	67.2	100.0	100.0	1>	1=	1=	1>	1=	1=
LEAF2 very late	70	42	1		15.6	**100.0**	**100.0**	64.7	100.0	100.0	1>	1=	1=	1>	1=	1=

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

Table 3.2-291: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T - 1 application - Early assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
Efficacy after 1 application																
LEAF2 early	16-17		2	*Mean*	*7.4*	*~~99.1~~* ***98.9***	*~~95.5~~* ***95.9***	*41.1*	*95.6*		2>	2=		2>	2=	
				Min	4.0	~~98.1~~ **98.6**	~~93.5~~ **93.4**	29.06	95.0							
				Max	10.8	~~100.0~~ **99.1**	~~97.5~~ **98.4**	52.5	96.3							
LEAF3 early	14-17		5	*Mean*	*8.5*	*~~88.3~~* ***88.6***	*~~85.0~~* ***85.1***	*25.9*	*87.6*		5>	5=		5>	5=	
				Min	6.8	~~77.1~~ **77.2**	**67.1**	18.2	84.4							
				Max	12.1	~~98.9~~ **99.0**	~~94.3~~ **94.7**	34.5	96.6							
LEAF4 early	14-17		4	*Mean*	*10.0*	*~~79.2~~* ***79.3***	*~~77.7~~* ***77.9***	*29.5*	*75.2*		4>	4=		4>	4=	
				Min	5.5	~~65.8~~ **66.3**	~~56.5~~ **56.3**	1.4	58.9							
				Max	14.7	~~94.3~~ **94.0**	~~90.2~~ **90.6**	49.1	91.9							

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

Table 3.2-292: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T - 1 application - Late assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
Efficacy after 1 application																
LEAF3 late	25-34		4	*Mean*	*6.5*	***66.4***	***63.8***	*40.5*	*68.6*		3>	4=		3>	4=	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
				Min Max	0.0 13.1	**0.0** ~~94.7~~ **95.0**	**0.0** ~~91.6~~ **92.0**	0.0 67.5	0.0 95.0		1=			1=		
			2	*Mean* Min Max	*8.9* 4.7 13.1	***92.0*** **89.4** ~~94.7~~ **95.0**	***86.2*** **80.9** ~~91.6~~ **92.0**	*55.9* 44.7 67.2	*89.5* 85.1 93.9	*81.9* 74.5 89.3	2>	2=	2=	2>	2=	2=
LEAF4 late	25-34		3	*Mean* Min Max	*20.3* 11.9 31.8	***84.5*** **63.0** **95.6**	***76.4*** **54.9** ~~91.2~~ **91.1**	*59.8* 48.6 71.1	*80.1* 57.2 93.1		1= 2>	3=		1= 2>	3=	
			2	*Mean* Min Max	*21.9* 11.9 31.8	***95.3*** **95.0** **95.6**	***87.2*** **83.2** ~~91.2~~ **91.1**	*65.4* 59.7 71.1	*91.5* 89.9 93.1	*86.8* 84.0 89.6	2	2=	2=	2>	2=	2=

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

Table 3.2-293: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T - 1 application – Very late assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**2.0 L/ha**	**CA27**	**CA24**	**OSIRIS 65**	**CA27**	**CA24**	**OSIRIS 65**

				Rate		**210 g AZX/ha + 210 g PTZ/ha**	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**75 g EPC/ha + 55 g MTC/ha**	**02 0.8 L/ha**	**45 0.8 L/ha**	**EC 2.0 L/ha**	**02 0.8 L/ha**	**45 0.8 L/ha**	**EC 2.0 L/ha**
Efficacy after 1 application																
LEAF3 very late	35-49		2	*Mean*	*6.6*	*~~96.9~~* ***97.0***	*~~93.8~~* ***93.6***	*79.0*	*95.5*	*90.1*	1=	2=	2=	1=	2=	2=
				Min	6.4	~~95.3~~ **95.1**	~~90.6~~ **90.2**	72.1	95.3	87.5	1>			1>		
				Max	6.8	~~98.5~~ **98.9**	~~97.1~~ **96.9**	85.9	95.6	92.6						
LEAF4 very late	35-49		2	*Mean*	*10.6*	*~~94.3~~* ***94.8***	*~~90.6~~* ***90.7***	*76.4*	*86.8*	*88.5*	1=	2=	2=	1=	2=	2=
				Min	6.4	~~90.6~~ **91.2**	~~85.9~~ **86.3**	66.9	79.7	84.4	1>			1>		
				Max	14.8	~~98.0~~ **98.3**	~~95.3~~ **95.1**	85.9	93.9	92.6						

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date "early" (13-15 DA-B), when considering **leaf 2,** on average of 6 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved higher level of efficacy (respectively 89.6% and 83.5%) compared to the reference product CA2702 (52.7%). The level of infection observed in the untreated check was 8.7% severity.
When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher to the one achieved by CA2702 in 5 assessments out of 6.

On average of 5 assessments, test product CA3642 applied at 1.2 L/ha showed equivalent efficacy than CA2445 (80.6% vs 81.2%), while at 1.4 L/ha it showed higher efficacy (87.5% vs 81.2%). The level of infection observed in the untreated check was 8.4% severity.
No statistical difference was observed in the individual assessments.

On average of 3 assessments, test product CA3642 applied at 1.4 L/ha or 1.2 L/ha showed equivalent efficacy compared to OSIRIS 65 EC (97.2% and 94.2% vs 95.7%), with no statistical difference observed in all individual assessments. The level of infection observed in the untreated check was 8.6% severity.

At assessment date "early" (13-15 DA-B), when considering **leaf 3**, on average of 8 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved higher level of efficacy (respectively 84.7% and 76.8%) compared to the reference product CA2702 (59.7%). The level of infection observed in the untreated check was 15.1% severity.
When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher to the one achieved by CA2702 in 4 assessments out of 8.

On average of 7 assessments, test product CA3642 applied at 1.4 L/ha showed an efficacy comparable to CA2445 (82.6% vs 78.7%), while at 1.2 L/ha it showed slightly lower efficacy (73.8% vs 78.7%). The level of infection observed in the untreated check was 15.1% severity.
When considering the individual assessments, no statistical difference was observed in 6 assessments out of 7, at each rate.

On average of 5 assessments, test product CA3642 applied at 1.2 L/ha or 1.4 L/ha showed equivalent efficacy compared to OSIRIS 65 EC (95.0% and 91.7% vs 91.5%). The level of infection observed in the untreated check was 18.7% severity.
When considering the individual assessments, the efficacy reached by CA3642 was statistically higher to the one achieved by OSIRIS 65 EC in 1 assessment out of 5, at both rates.

At assessment date "early" (15 DA-B), when considering **leaf 4**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and other reference products, although CA3642 at the rate of 1.4 L/ha delivered a level of control numerically lower than CA2445 (81.3% vs 93.8%), and at the rate of 1.2 L/ha delivered a level of control numerically higher than CA2702 (91.7% vs 77.1%).
The level of infection observed in the untreated check was 4.8% severity.

At assessment date "late" (23 DA-B), when considering **leaf 2,** in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2445 and OSIRIS 65 EC, although CA3642 mean efficacy was numerically higher than CA2445 at both rates (97.1% and 94.1% vs 83.8%).
The level of infection observed in the untreated check was 6.8% severity.

At assessment date "very late" (42 DA-B), when considering **leaf 1,** in 1 assessment, mean efficacy of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) was comparable to the reference standards CA2445 and OSIRIS 65 EC (100.0% for all), but statistically higher than CA2702 (100.0% vs 67.2%).
The level of infection observed in the untreated check was 6.4% severity.

At assessment date “very late” (42 DA-B), when considering **leaf 2,** in 1 assessment, similar conclusions could be drawn.
Level of infection observed in the untreated check was 15.6% severity.

After one application of CA3642 applied at 1.2-1.4 L/ha
At assessment date “early” (16-17 DA-A), when considering **leaf 2,** on average of 2 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 99.1% and 95.5%) compared to the reference product CA2702 (41.1%), and it did not show any statistical difference compared to CA2445 (95.6%). The level of infection observed in the untreated check was 7.4% severity.

At assessment date “early” (14-17 DA-A), when considering **leaf 3,** on average of 5 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 88.3% and 85.0%) compared to the reference product CA2702 (25.9%), and it did not show any statistical difference compared to CA2445 (87.6%). The level of infection observed in the untreated check was 8.5% severity.

At assessment date “early” (14-17 DA-A), when considering **leaf 4,** on average of 4 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 79.2% and 77.7%) compared to the reference product CA2702 (29.5%), and it did not show any statistical difference compared to CA2445 (75.2%). The level of infection observed in the untreated check was 10.0% severity.

At assessment date “late” (25-34 DA-A), when considering leaf 3, on average of 2 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 66.4% and 63.8%) compared to the reference product CA2702 (40.5%), and it did not show any statistical difference compared to CA2445 (68.6%). The level of infection observed in the untreated check was 6.5% severity.

On average of 2 assessments, test product CA3642 applied at 1.4 L/ha or 1.2 L/ha showed equivalent efficacy compared to OSIRIS 65 EC (92.0% and 86.2% vs 81.9%), with no statistical difference observed in all individual assessments, but one performance numerically higher observed in one assessment for CA3642 applied at 1.4 L/ha. The level of infection observed in the untreated check was 8.9% severity.

At assessment date “late” (25-34 DA-A), when considering **leaf 4,** on average of 3 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 84.5% and 76.4%) compared to the reference product CA2702 (59.8%); compared to CA2445 (80.1%) it did not show any statistical difference, but one performance numerically higher was observed in one assessment for CA3642 applied at 1.4 L/ha. The level of infection observed in the untreated check was 20.3% severity.

On average of 2 assessments, test product CA3642 applied at 1.4 L/ha or 1.2 L/ha showed equivalent efficacy compared to OSIRIS 65 EC (95.3% and 87.2% vs 86.8%), with no statistical difference observed in all individual assessments, but one performance numerically higher observed in one assessment for CA3642 applied at 1.4 L/ha. The level of infection observed in the untreated check was 21.9% severity.

At assessment date “very late” (35-49 DA-A), when considering **leaf 3,** on average of 2 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a higher level of efficacy (respectively 96.9% and 93.8%) compared to the reference product CA2702 (79.0%), and it did not show any statistical difference compared to CA2445 and OSIRIS 65 EC (respectively 95.5% and 90.1%). The level of infection observed in the untreated check was 6.6% severity.

At assessment date “very late” (35-49 DA-A), when considering **leaf 4,** on average of 2 assessments, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a higher level of efficacy (respectively 94.3% and 90.6%) compared to the reference product CA2702 (76.4%), and it did not show any statistical difference compared to CA2445 and OSIRIS 65 EC (respectively 86.8% and 88.5%). The level of infection observed in the untreated check was 10.6% severity.

Comments of zRMS:

11 efficacy trials were carried out to control *of Blumeria graminis* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 83,6-89,6% on L2, 76,7-84,8% on L3 and 81,8-92,2% on L4 in the early assessment. The test product at claimed doses presented results of 93,5-97,2% on L2 in the late assessment and full control in the very late observation. No differences between CA3642 and reference products CA2445 and Osiris were observed. CA2702 achieved significant inferior results compared to the test product. The moderate to high level of control has been noted after 1 application. CA3642 presented >80% on L2 and L3 in the early assessment and >90% on L3 and L4 in the very late observations.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of ERYSGR in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – ERYSGR/T – South-East EPPO zone

8 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against ERYSGR/T in the South-East EPPO zone. The trials were carried out in Hungary (3), Romania (3) and Slovakia (2) from 2019 to 2021. The first application took place at crop stage BBCH 31 - 35 and the second application was done 15 - 28 days later, at BBCH 41 – 55.

Table 3.2-294: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 2 applications - Early assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha
Efficacy after 2 applications																
LEAF2 early	30 - 36	15	*5*	*Mean*	*6.7*	***97.1***	***96.5***	*88.2*	*92.8*		4>	3=		4>	3=	
				Min	5.2	~~92.6~~ **92.7**	**91.3**	78.8	80.9		1=	2>		1=	2>	
				Max	9.8	**100**	**100**	100	100							
			3	*Mean*	7.7	**95.1**	**94.2**	84.6	87.9	94.8	3>	1=	3=	3>	1=	3=
				Min	5.8	~~92.6~~ **92.7**	**91.3**	78.8	80.9	91.6		2>			2>	
				Max	9.8	**100**	**100**	93.3	100	100						
LEAF3 early	30 - 36	15	*7*	*Mean*	*16.4*	***92.8***	***90.8***	*74.3*			6>			6>		
				Min	12.4	**85.2**	**82.5**	54.6			1=			1=		
				Max	30.6	**100**	**100**	81.6								
			6	*Mean*	*16.5*	***92***	***89.9***	*77.6*	*88.9*		5>	4=		5>	3=	
				Min	12.4	**85.2**	**82.5**	73.2	75.4		1=	2>		1=	2>	
				Max	30.6	**100**	**100**	81.6	100						1<	
			5	*Mean*	*17.7*	***93.8***	***92.3***	*72.6*		*92.5*	4>		5=	4>		3=
				Min	12.4	**85.2**	**82.5**	54.6		85.7	1=			1=		2>
				Max	30.6	**100**	**100**	81.6		100						
LEAF4 early	32 - 43	15	*2*	*Mean*	*80.8*	***97.7***	***96.2***	*79.1*			1>			1>		
				Min	61.6	**95.4**	**92.5**	58.3			1=			1=		

				Max	100	**100**	**100**	100								
			1		*100*	***100***	***100***	*100*	*100*		1=	1=		1=	1=	
			1		*61.6*	***95.4***	***92.5***	*58.3*		*92.2*	1=		1=	1=		1=

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L

Table 3.2-295: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 2 applications – Very late assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha
Efficacy after 2 applications																
LEAF1 very late	57 - 65	36 - 45	*5*	*Mean*	*8*	~~*94.8*~~ ***95.0***	***93.8***	*75.6*	*90.7*		4>	3=		1=	2=	
				Min	5.1	~~91.2~~ **91.5**	~~89.7~~ **89.6**	68.3	79.4		1=	2>		4>	1<	
				Max	12	**100**	**100**	83.3	100						2>	
			3	*Mean*	*8*	***94.4***	***94***	*75.1*	*87.3*	*94*	1=	1=	3=	1=	1=	3=
				Min	5.1	~~91.2~~ **91.5**	~~89.7~~ **89.6**	68.3	79.4	89.7	2>	2>		2>	2>	
				Max	12	**100**	**100**	80.4	100	100						
LEAF2 very late	57 - 64	36 - 47	*7*	*Mean*	*14.7*	***87.7***	~~*85.8*~~ ***85.9***	*63.4*			7>			7>		
				Min	8.7	~~67.8~~ **67.5**	~~63.2~~ **63.9**	16.1								
				Max	26.3	**100**	**100**	78.4								
			6	*Mean*	*15.7*	***91.1***	***89.6***	*71.3*	*86.8*		6>	4=		6>	3=	
				Min	11.1	**85.3**	**81.7**	58.9	74.6			2>			1<	
				Max	26.3	**100**	**100**	78.4	100						2>	
			5	*Mean*	*14.1*	***88.7***	***87***	*60.2*		*92.6*	5>		5=	5>		5=
				Min	8.7	~~67.8~~ **67.5**	~~63.2~~ **63.9**	16.1		85.8						
				Max	26.	**100**	**100**	78.4		100						

					3											

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L

Table 3.2-296: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against ERYSGR/T – 1 application – Early assessments – South-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX* 225 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRI-AXOR 1.5 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRI-AXOR 1.5 L/ha**
Efficacy after 1 application																
LEAF3 early	15		*2*	*Mean*	*5.4*	***91.5***	***88.6***	*80.4*	*94.4*		1>	2=		1>	1>	
				Min	5.3	**91.5**	**87.5**	75.2	92.6		1=			1=	1=	
				Max	5.4	**91.5**	**89.8**	85.6	96.1							
LEAF4 early	15 - 18		*4*	*Mean*	*8.6*	~~*88.7*~~ ***88.8***	***87.8***	*64.1*			1>			1>		
				Min	7.1	**81.4**	~~83~~ **82.7**	0			3=			3=		
				Max	10	**92.8**	**92.4**	88.5								
			3	*Mean*	*9.1*	***88.5***	***87.3***	*85.5*	*88.9*		3=	3=		3=	3=	
				Min	8.4	**81.4**	~~83~~ **82.7**	82.8	83							
				Max	10	**92.8**	**92.4**	88.5	93.3							
			2	*Mean*	*8.6*	***85.2***	***86.2***	*42.5*		*79.8*	1>		2=	1>		2=
				Min	7.1	**81.4**	~~83~~ **82.7**	0		79.7	1=			1=		
				Max	10	**89.5**	**89.3**	85		80						

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L

<u>After two applications of CA3642 applied at 1.2 – 1.4 L/ha</u>

At **leaf level 2**, **assessment date "early"** (15 DA-B), the performance of CA3642 was assessed in a total of 5 trials. Infestation levels (UTC) in the trials ranged from 5.2 – 9.8 % severity. In 5 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 5 trials, the performance of CA3642 applied at both dose was compared to the reference products CA2702 and CA2445. On average of 5 trials, CA3642 applied at 1.2-1.4 L/ha showed equivalent efficacy (respectively 96.5% and 97.1%) than CA2702 and CA2445, respectively 88.2% and 92.8%. Compared at CA2702, CA3642 applied at both was statistically superior to the reference product in 4 trials out of 5. In 2 of the 5 trials, the performance of CA3642 applied at both dose rates showed a statistically significant higher efficacy than the reference product CA2445.
In 3 trials, the performance of CA3642 applied at both dose rates was compared to the reference product PRIAXOR. On average, the performance of CA3642 at both dose rates (94.2% and 95.1%) was equivalent to the reference product PRIAXOR (94.8%) and no statistically significant difference compared to the reference product was observed.

At **leaf level 3**, assessment date "early" (15 DA-B), the performance of CA3642 was assessed in a total of 7 trials. Infestation levels (UTC) in the trials ranged from 12.4– 30.6 % severity. In 7 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 7 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702. On average of these trials, CA3642 applied at 1.2-1.4 L/ha showed higher efficacy (respectively 90.8% and 92.8%) than CA2702 (74.3%). Compared at CA2702, CA3642 was statistically superior to the reference product in 6 trials out of 7.
In 6 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2445. On average of these trials, CA3642 applied at 1.2-1.4 L/ha showed a comparable efficacy of 89.9% and 92.0% than CA2445 (88.9%). CA3642 was statistically superior to the reference product in 2 trials out of 6. But in one assessment, the performance of CA3642 at 1.2L/ha was statistically inferior to the reference product CA2445.
In 5 trials, the performance of CA3642 applied at both dose was compared to the reference product PRIAXOR. On average, the performance of CA3642 applied at 1.2-1.4 L/ha was equivalent (respectively 92.3% and 93.8%) to the reference product PRIAXOR (92.5%) and no statistically significant difference compared to the reference product was observed except in 2 trials, where the tested product CA3642 at 1.2L/ha was statistically inferior to the reference product PRIAXOR.

At **leaf level 4**, assessment date "early" (15 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 61.6 – 100% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702. On average of these trials, CA3642 applied at 1.2-1.4 L/ha showed higher efficacy (respectively 96.2% and 97.7%) than CA2702 (79.1%). Compared at CA2702, CA3642 is statistically superior to the reference product in 1 trial and statistically equivalent in other trial. In 1 trial, the performance of CA3642 applied at both dose rates showed an equivalent efficacy (100%) than the reference product CA2445 (100%) and no statistically significant difference. In 1 trial, the performance of CA3642 applied at both dose rates showed an equivalent efficacy (respectively 92.5% and 95.4%) than the reference product PRIAXOR (92.2%) and no statistically significant difference compared to the reference product was observed.

At **leaf level 1**, **assessment date "very late"** (36-45 DA-B), the performance of CA3642 was assessed in a total of 5 trials. Infestation levels (UTC) in the trials ranged from 5.1 – 12.0% severity. In 5 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.

In 5 trials, the performance of CA3642 applied at both dose was compared to the reference products CA2702 and C2445. On average of these trials, CA3642 applied at 1.2-1.4 L/ha showed higher efficacy (respectively 93.8% and 94.8%) than CA2702 (75.6%) and equivalent efficacy than CA2445 (90.7%). Compared at CA2702, CA3642 was statistically superior to the reference product in 4 trials out of 5. In 2 of the 5 trials, the performance of CA3642 applied at both dose rates showed a statistically significant higher efficacy than the reference product CA2445.
In 3 trials, the performance of CA3642 applied at both dose rates was compared to the reference product PRIAXOR. On average, the performance of CA3642 applied at 1.2-1.4 L/ha (94.4%) was equivalent to the reference product PRIAXOR (94.0%) and no statistically significant difference compared to the reference product was observed.

At **leaf level 2**, assessment date “very late” (36-47 DA-B), the performance of CA3642 was assessed in a total of 7 trials. Infestation levels (UTC) in the trials ranged from 8.7 – 26.3% severity. In 7 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 7 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702. On average of these trials, CA3642 applied at 1.2-1.4 L/ha showed higher efficacy (respectively 85.8% and 87.7%) than CA2702 (63.4%). Compared at CA2702, CA3642 was statistically superior to the reference product in all trials.
In 6 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2445. On average of these trials, CA3642 applied at 1.2-1.4 L/ha showed equivalent efficacy (respectively 89.6% and 91.1%) than CA2445 (86.8%). CA3642 was statistically equivalent to the reference product in 4 trials out of 6. But in 2 of the 6 trials, the performance of CA3642 applied at both dose rates showed a statistically significant higher efficacy than the reference product CA2445.
In 5 trials, the performance of CA3642 applied at both dose rates was compared to the reference product PRIAXOR. On average, the performance of CA3642 applied at 1.2-1.4 L/ha (87.0% and 88.7%) was equivalent to the reference product PRIAXOR (92.6%) and no statistically significant difference compared to the reference product was observed.

<u>After one application of CA3642 applied at 1.2 – 1.4 L/ha</u>

At **leaf level 3**, **assessment date “early**” (15 DA-A), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 5.3 – 5.4% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference products CA2702 and CA2445. On average of these trials, CA3642 applied at 1.4 L/ha showed higher efficacy (91.5%) than CA2702 (80.4%) and equivalent efficacy than CA2445 (94.4%). Compared at CA2702, CA3642 was statistically superior to the reference product in 1 trial and equivalent in second trial. In 2 trials, the performance of CA3642 applied at 1.4L/ha showed a statistically significant equivalent efficacy than the reference product CA2445. At the dose rate 1.2L/ha, CA3642 showed comparable efficacy (88.6%) than CA2702 (80.4%) and CA2445 (94.4%). But CA3642 at 1.2L/ha showed a statistically significant higher efficacy than the reference product CA2702 in 1 trial out of 2 and a statistically significant lower efficacy than the reference product CA2445 in 1 trial out of 2.

At **leaf level 4**, assessment date “early” (15-18 DA-A), the performance of CA3642 was assessed in a total of 4 trials. Infestation levels (UTC) in the trials ranged from 7.1 – 10% severity. In 4 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 4 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702. Unfortunately in one of the trials, the reference product CA2702 did not work (0 % efficiency). So we will rely on the results of the other 3 trials.

On average of 3 trials, CA3642 applied at 1.2-1.4 L/ha showed equivalent efficacy (respectively 87.3% and 88.5%) than CA2702 (85.5%). Compared at CA2702, CA3642 was statistically equivalent to the reference product in all trials.
In 3 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2445. On average of 3 trials, CA3642 applied at 1.2-1.4 L/ha showed equivalent efficacy (respectively 87.3% and 88.5%) than CA2445 (88.9%). CA3642 was statistically equivalent to the reference product in all trials.
In 2 trials, the performance of CA3642 applied at both dose rates was compared to the reference product PRIAXOR. On average, the performance of CA3642 applied at 1.2-1.4 L/ha (respectively 86.2% and 85.2%) was equivalent to the reference product PRIAXOR (79.8%) and no statistically significant difference compared to the reference product was observed.

Comments of zRMS:

8 efficacy trials were carried out to control of *Blumeria graminis* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness after 2 applications, either in the early and very late assessments. The mean efficacy was 96,5-97,1% on L2, 90,8-92,8% on L3 and 96,2-97,7% on L4 in the early assessment. The test product at claimed doses presented results of 93,8-95% on L1 and 85,9-87,7% on L2 in the very late observation. Significant inferior effectiveness was observed in case of CA2702 compared to CA3642. Similar effect to the test product has been noted for CA2445. Good control was visible also after 1 application with the mean efficacy of 88,6-91,5% on L3 and 87,8-88,8% on L4.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of ERYSGR in winter wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

Summary of data on ERYSGR/T in wheat

Data is presented from a total of 28 trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control *Blumeria graminis* (ERYSGR/T) in winter wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

The data presented supports the claim for registration of CA3642 applied at 1.2 L/ha-1.4 L/ha for control of *Blumeria graminis* (ERYSGR/T) in wheat.

Winter Wheat (TRZAW) – Brown rust (PUCCRE/T – *Puccinia recondita*)

A total of 19 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of *Puccinia recondita* (PUCCRE/T) in winter wheat in the Maritime (7 trials), North-East (7 trials) and South-East (5 trials) EPPO zones.

The trials from the Maritime EPPO zone were carried out in the United Kingdom (1), Germany (2) and Northern France (4).
The trials from the North-East EPPO zone were carried out in Poland (7).
The trials from the South-East EPPO zone were carried out in Hungary (1), Romania (2) and Bulgaria (2).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZAW – PUCCRE/T – Maritime EPPO zone

7 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRE/T in the Maritime EPPO zone. The trials were carried out in France (4), Germany (2) and Great Britain (1) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 37 and the second application was done 15 - 35 days later, at BBCH 39 - 57.

Table 3.2-297: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type** **Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
~~LEAF2 early~~	~~43~~	~~16~~	~~*1*~~	~~-~~	~~*8.9*~~	~~***100***~~	~~***98.9***~~	~~*98.9*~~	~~*97.8*~~	~~1=~~	~~1=~~	~~1=~~	~~1=~~
~~LEAF3 early~~	~~43~~	~~16~~	~~*1*~~	~~-~~	~~*7.8*~~	~~***94.9***~~	~~***97.4***~~	~~*87.2*~~	~~*89.7*~~	~~1=~~	~~1=~~	~~1=~~	~~1=~~
LEAF1 late	57-62	30-32	~~2~~ *1*	*Mean* Min Max	~~*19*~~ 11.7 ~~26.2~~	~~***97.9***~~ ***95.5*** ~~95.7~~ **95.5** ~~100~~ **95.5**	~~***98.5***~~ ***97.3*** ~~97.4~~ **97.3** ~~99.6~~ **97.3**	~~*98.3*~~ 96.6 ~~100~~	~~*82.6*~~ 77.1 ~~88~~	~~2~~ 1=	~~2~~ 1=	~~2~~ 1=	~~2~~ 1=
~~LEAF2 late~~	~~57~~	~~30~~	~~*1*~~	~~-~~	~~*11.9*~~	~~***100***~~	~~***100***~~	~~*99.2*~~	~~*73.1*~~	~~1=~~	~~1=~~	~~1=~~	~~1=~~
LEAF1 very late	56-84	41-53	*5*	*Mean* Min Max	*15.6* 7.7 25.4	~~***85.2***~~ ***85.4*** **61.2** **100**	***84.2*** **63.1** **100**	*87.4* 73.2 100	*56.1* 35.8 88.3	5=	3= 2>	5=	3= 2>
LEAF2 very late	56-72	37-42	*3*	*Mean* Min Max	*12.5* 5.8 25.8	~~***84.4***~~ ***84.6*** **58.1** **100**	~~***79.7***~~ ***79.6*** ~~52.7~~ **52.9** **100**	*86* 61.2 100	*62.8* 29.5 84.5	3=	1= 2>	3=	2= 1>

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
At assessment date ''early'' (16 DA-B), in **leaf level 2**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 100% and 98.9% efficacy respectively. The level of infection observed in the untreated check was 8.9% severity.
Performance of CA3642 was equivalent to CA2702 and CA2445 with no statistical difference.

In **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha reached 94.9% and 97.4% efficacy respectively. The level of infection observed in the untreated check was 7.8% severity.
Performance of CA3642 was equivalent to CA2702 and CA2445 with no statistical difference.

At assessment date ''late'' (30-32 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 97.9% and 98.5% mean efficacy respectively across 2 trials. The level of infection observed in the untreated check was 19% severity.

Performance of CA3642 was equivalent to CA2702 and to CA2445. No statistical difference was observed in the individual assessments.

In **leaf level 2**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 100% for both dose rates. The level of infection observed in the untreated check was 11.9% severity.
Performance of CA3642 was equivalent to CA2702 with no statistical difference.
Performance of CA3642 was higher than CA2445, although no statistical difference was observed.

At assessment date ''very late'' (37-53 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 85.2% and 84.2% mean efficacy respectively across 5 trials. The level of infection observed in the untreated check was 15.6 % severity.

Performance of CA3642 was comparable to CA2702 on average. No statistical difference was observed in the individual assessments.
Performance of CA3642 was higher than CA2445 and this is statistically significant for 2 out of 5 individual assessments.

In **leaf level 2**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 84.4 % and 79.7 % mean efficacy respectively across 3 trials. The level of infection observed in the untreated check was 12.5 % severity.
Performance of CA3642 was comparable to CA2702 on average. No statistical difference was observed in the individual assessments.
Performance of CA3642 was higher than CA2445 and this is statistically significant for 2 out of 3 individual assessments for the 1.4 L/ha rate and in 1 assessment for the 1.2 L/ha rate.

Comments of zRMS:

7 efficacy trials were carried out to control of *Puccinia recondita* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good effectiveness after 2 applications with the mean efficacy of 95,5-97,3% on L1 in late assessment and 84,2-85,4% on L1 and 79,6-84,6% on L2 in the very late observations. No differences between test product and CA2702 and slight inferior results in case of CA2445 were observed. No results after 1 application were available.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 2 applications is effective for control of PUCCRE in winter wheat in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PUCCRE/T – North-East EPPO zone

7 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRE/T in the North-East EPPO zone. The trials were carried out in Poland (7) between 2019 and 2020. The first application took place at crop stage BBCH 30 - 32 and the second application was done 30 - 53 days later, at BBCH 52 - 59.

Table 3.2-298: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – 2 applications - Early assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC * 65 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha
Efficacy after 2 applications																
LEAF1 early	30-32	15	2	*Mean*	*20.1*		***87.6***		*85.8*						1= 1>	
				Min	18.8		**86.4**		85.4							
				Max	21.3		**88.8**		86.2							
LEAF2 early	45	15	1		*7.7*	***~~98.7~~ 99.2***	***100.0***	*94.8*		*97.4*	1=		1=	1=		1=
LEAF3 early	45	15	1		*15.8*	***~~99.4~~ 99.6***	***~~97.5~~ 97.6***	*93.7*		*99.4*	1=		1=	1=		1=

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

Table 3.2-299: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – 2 applications – Late and Very late assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC * 65 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha
Efficacy after 2 applications																
LEAF1 late	53-87	23-34	4	*Mean*	*10.9*	***94.9***	***~~94.4~~ 94.7***	*96.4*		*95.2*	4=		4=	4=		4=

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
				Min Max	4.4 16.4	~~87.2~~ **87.0** **100.0**	~~89.6~~ **89.8** ~~98.6~~ **98.8**	93.2 100.0		89.7 100.0						
LEAF2 late	53	23	1		8.8	~~*98.9*~~ ***98.6***	~~*96.6*~~ ***97.1***	*96.6*		*98.9*	1=		1=	1=		1=
LEAF1 very late	84	35	1		8.6	~~*89.5*~~ ***89.1***	***94.2***	*93.0*	*89.5*	*83.7*	1=	1=	1=	1=	1=	1=
LEAF2 very late	84	35	1		5.9	~~*89.8*~~ ***90.4***	~~*93.2*~~ ***93.6***	*93.2*	*88.1*	*86.4*	1=	1=	1=	1=	1=	1=

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date "early" (15 DA-B), when considering **leaf 1,** on average of 2 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha (87.6%) was comparable to the reference standard CA2445 (85.8%). The level of infection observed in the untreated check was 20.1% severity.
When considering the individual assessments, significantly higher efficacy was observed for CA3642 compared to CA2445 in 1 trial.

At assessment date "early" (15 DA-B), when considering **leaf 2,** in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 100.0% and 98.7%) and reference products CA2702 (94.8%) and OSIRIS 65 EC (97.4%).
The level of infection observed in the untreated check was 7.7% severity.

At assessment date "early" (15 DA-B), when considering **leaf 3,** in 1 assessment, similar conclusions could be drawn.
The level of infection observed in the untreated check was 15.8% severity.
At all assessments CA3642 signficantly reduced disease severity compared to the untreated.

At assessment date "late" (23-34 DA-B), when considering **leaf 1,** on average of 4 assessments, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 94.4% and 94.9%) and reference products CA2702 (96.4%) and OSIRIS 65 EC (95.2%).
The level of infection observed in the untreated check was 10.9% severity.

At assessment date "late" (23 DA-B), when considering **leaf 2,** in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 96.6% and 98.9%) and reference products CA2702 (96.6%) and OSIRIS 65 EC (98.9%).
The level of infection observed in the untreated check was 8.8% severity.

At assessment date "very late" (35 DA-B), when considering **leaf 1,** in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 94.2% and 89.5%) and reference products CA2702 (93.0%), CA2445 (89.5%), and OSIRIS 65 EC (83.7%), although a distinct numerical difference was observable with this latter showing a (numerically) lower efficacy than the test product applied at 1.2 L/ha.
The level of infection observed in the untreated check was 8.6% severity.

At assessment date "very late" (35 DA-B), when considering **leaf 2,** in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 93.2% and 89.8%) and reference products CA2702 (93.2%), CA2445 (88.1%), and OSIRIS 65 EC (86.4%).
The level of infection observed in the untreated check was 5.9% severity.

At all assessments CA3642 signficantly reduced disease severity compared to the untreated.

Comments of zRMS:

7 efficacy trials were carried out to control of *Puccinia recondita* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 87,6% on L1 (only at 1,2 l/ha), 99,2-100% on L2 and 97,6-99,6% on L3 in the early assessment. The test product at claimed doses presented results >90% in the late observations. No significant differences between CA3642 and reference products were observed. No results after 1 application were available.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 2 applications is effective for control of PUCCRE in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PUCCRE/T – South-East EPPO zone

5 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRE/T in the South-East EPPO zone. The trials were carried out in Bulgaria (2), Hungary (1) and Romania (2) between 2019 and 2021. The first application took place at crop stage BBCH 31 - 33 and the second application was done 15 - 41 days later, at BBCH 47 – 59.

Table 3.2-300: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – 2 applications - Early assessments – South-East EPPO zone

Leaf level assm. Tim-ing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PRIAXOR PCS + FLX* 225 g/L EC 1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	RIZA 20 EC TBC 200 g/L EC 1.25 L/ha 250 g TBC/ha	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC 1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha	NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC 0.6 L/ha 90 g TFS/ha + 105 g PTZ/ha
Efficacy after 2 applications													
LEAF 1 early	56	15	*1*		*12.6*	*~~61.9~~* ***61.7***	*~~61.1~~* ***61.2***	*60.3*					*61.1*
LEAF 2 early	30 - 56	15	*2*	*Mean*	*11.9*	***83.6***	*~~83.6~~* ***83.8***	*77.2*					
				Min	6	~~67.2~~ **67.1**	~~67.2~~ **67.5**	62.7					
				Max	17.7	**100**	**100**	91.7					
			1		*6*	*100*	*100*	*91.7*	*100*				
			1		*17.7*	*~~67.2~~* ***67.1***	*~~67.2~~* ***67.5***	*62.7*					*66.7*
LEAF 3 early	30	15	*1*		-	*~~88.4~~* ***88.3***	*~~85.4~~* ***85.6***	*74.4*	*89*				

Leaf level assm. Tim-ing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	CA3642 at 1.4 L/ha compared to CA2702 0.8 L/ha	CA3642 at 1.4 L/ha compared to CA2445 0.8 L/ha	CA3642 at 1.4 L/ha compared to PRI-AXOR 1.5 L/ha	CA3642 at 1.4 L/ha compared to RIZA 20 EC 1.25 L/ha	CA3642 at 1.4 L/ha compared to AVIATOR XPRO 225 EC 1.25 L/ha	CA3642 at 1.4 L/ha compared to NATIVO PRO 325 SC 0.6 L/ha	CA3642 at 1.2 L/ha compared to CA2702 0.8 L/ha	CA3642 at 1.2 L/ha compared to CA2445 0.8 L/ha	CA3642 at 1.2 L/ha compared to PRI-AX-OR 1.5 L/ha	CA3642 at 1.2 L/ha compared to RIZA 20 EC 1.25 L/ha	CA3642 at 1.2 L/ha compared to AVIATOR XPRO 225 EC 1.25 L/ha	CA3642 at 1.2 L/ha compared to NATIVO PRO 325 SC 0.6 L/ha
Efficacy after 2 applications																
LEAF 1 early	56	15	*1*		1=					1=	1=					1=
LEAF 2 early	30 - 56	15	*2*	*Mean*	1>						1>					

				Min Max	1=						1=					
			1		1>	1=					1>	1=				
			1		1=					1=	1=					1=
LEAF 3 early	30	15	*1*		1>	1=					1>	1=				

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-301: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – 2 applications - Late assessments – South-East EPPO zone

Leaf lev-el ass m. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX* 225 g/L EC**	**RIZA 20 EC TBC 200 g/L EC**	**AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC**	**NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC**
						1.4 L/ha	**1.2 L/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**1.25 L/ha 250 g TBC/ha**	**1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha**	**0.6 L/ha 90 g TFS/ha + 105 g PTZ/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**						
Efficacy after 2 applications													
Leaf 1 late	55 - 69	28 - 33	*2*	*Mean*	*11.5*	***69.3***	*~~67.5~~* ***67.7***	*68.4*					
				Min	6.4	~~38.6~~ **38.7**	~~34.9~~ **35.3**	36.7					
				Max	16.6	**100**	**100**	100					
			1		*6.4*	***100***	***100***	*100*				*96.9*	
			1		*16.6*	***~~38.6~~ 38.7***	***~~34.9~~ 35.3***	*36.7*					*43.4*
LEAF2 late	49	32	*1*		*9.9*	***100***	***100***	*100*		*100*			
LEAF3	49	32	*1*		-	***100***	***100***	*100*		*100*			

late																
Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**						**CA3642 at 1.2 L/ha compared to**					
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**RIZA 20 EC 1.25 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**RIZA 20 EC 1.25 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**
Efficacy after 2 applications																
Leaf 1 late	55 - 69	28 - 33	*2*	*Mean* Min Max	2=						2=					
			1		1=				1=		1=				1=	
			1		1=					1=	1=					1<
LEAF2 late	49	32	*1*		1=		1=				1=		1=			
LEAF3 late	49	32	*1*		1=		1=				1=		1=			

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-302: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – 2 applications – Very late assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	RIZA 20 EC TBC 200 g/L EC	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC	NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC
						1.4 L/ha	1.2 L/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	1.25 L/ha 250 g TBC/ha	1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha	0.6 L/ha 90 g TFS/ha + 105 g PTZ/ha
						210 g AZX/ha + 210 g PTZ/ha	180 g AZX/ha + 180 g PTZ/ha						
Efficacy after 2 applications													
LEAF1 very late	54 - 60	37 - 43	*3*	*Mean*	*24*	***92.6***	***87.7***	*80.6*					
				Min	9.6	**81.4**	**76.3**	55.7					
				Max	52.6	**99.6**	**99.2**	99.6					
			1		*52.6*	***99.6***	***99.2***	*99.6*		*97.9*			
			1		*9.6*	***96.9***	***87.5***	*86.5*			*85.4*		
			1		*9.7*	***81.4***	***76.3***	*55.7*	*82.5*				
LEAF2 very late	54 - 60	37 - 43	*3*	*Mean*	*30.7*	***88.2***	~~86.5~~ **86.4**	*84.1*					
				Min	13	**81.5**	**78.5**	74.1					
				Max	56.8	**100**	~~99.6~~ **99.7**	99.6					
			1		*22.4*	***83***	***81.3***	*74.1*	*83*				
			1		*13*	***81.5***	***78.5***	*78.5*			*71.5*		
			1		*56.8*	***100***	~~99.6~~ **99.7**	*99.6*		*99.3*			
LEAF3 very late	54	37	*1*		*20.8*	***75***	***71.6***	*72.1*			*71.2*		

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**						**CA3642 at 1.2 L/ha compared to**					
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRI-AXOR 1.5 L/ha**	**RIZA 20 EC 1.25 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRI-AX-OR 1.5 L/ha**	**RIZA 20 EC 1.25 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**NATIVO PRO 325 SC 0.6 L/ha**
Efficacy after 2 applications																
LEAF1 very late	54 - 60	37 - 43	*3*	*Mean* Min Max	1= 2>						2= 1>					
			1		1=		1=				1=		1=			
			1		1>			1>			1=			1=		
			1		1>	1=					1>	1<				
LEAF2 very late	54 - 60	37 - 43	*3*	*Mean* Min Max	2= 1>						2= 1>					
			1		1>	1=					1>	1>				
			1		1=			1>			1=			1=		
			1		1=		1=				1=		1=			
LEAF3 very late	54	37	*1*		1=			1=			1=			1=		

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

Table 3.2-303: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCRE/T – 1 application - Early assessments – South-East EPPO zone

Leaf level assm. Tim-ing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	RIZA 20 EC TBC 200 g/L EC	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC	NATIVO PRO 325 SC TFS + PTZ*** 325 g/L SC
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	1.25 L/ha 250 g TBC/ha	1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha	0.6 L/ha 90 g TFS/ha + 105 g PTZ/ha
Efficacy after 1 application													
LEAF 3 early	15		*1*		-	*~~95.9~~* ***95.1***	*~~89.8~~* ***89.0***	*67.3*	*93.9*				
LEAF 4 early	15		*1*		*10.9*	*~~91.7~~* ***91.6***	*~~87.2~~* ***87.6***	*81.7*	*95.4*				

Leaf level assm. Tim-ing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	CA3642 at 1.4 L/ha compared to						CA3642 at 1.2 L/ha compared to					
					CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AXOR 1.5 L/ha	RIZA 20 EC 1.25 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	NATIVO PRO 325 SC 0.6 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRI-AX-OR 1.5 L/ha	RIZA 20 EC 1.25 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	NATIVO PRO 325 SC 0.6 L/ha
Efficacy after 1 application																
LEAF 3 early	15		*1*		1>	1=					1>	1=				
LEAF 4 early	15		*1*		1=	1=					1=	1=				

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L
*** TFS + PTZ: Trifloxystrobin 150 g/L + Prothioconazole 175 g/L

<u>After 2 applications of CA3642 applied at 1.2 – 1.4 L/ha</u>

At assessment date “early” (15 DA-B), when considering **leaf 1**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and NATIVO PRO 352 SC, CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (respectively 61.1% – 61.9%) than CA2702 (60.3%) and NATIVO PRO 352 SC (61.1%). The level of infection observed in the untreated check was 12.6% severity.

At leaf level 2, assessment date “early” (15 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 6.0 – 17.7% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose rates was compared to the reference product CA2702.
On average of 2 trials, CA3642 applied at 1.2-1.4 L/ha showed equivalent efficacy (83.6% for both) than CA2702 (77.2%). Compared at CA2702, CA3642 was statistically superior to the reference product in 1 trial out of 2.
In one trial, the performance of CA3642 applied at both dose rates showed no significant difference when compared to the reference product CA2445.
In one trial, the performance of CA3642 applied at both dose rates showed no significant difference when compared to the reference product NATIVO PRO 352 SC.

At assessment date “early” (15 DA-B), when considering **leaf 3**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2445. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (respectively 85.4% – 88.4%) than CA2445 (89.0%). A statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically higher (respectively 85.4% – 88.4%) than CA2702 (74.4%) The level of infection observed in the untreated check was 16.4% severity.

At **leaf level 1**, **assessment date “late”** (28-33DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 6.4 – 16.6% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose rates was compared to the reference product CA2702.
On average of 2 trials, CA3642 applied at 1.2-1.4 L/ha showed equivalent efficacy (respectively 67.5% and 69.3%) than CA2702 (68.4%). Compared at CA2702, CA3642 was statistically equivalent to the reference product in 2 trials.
In 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product AVIATOR XPRO 225 EC. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent than AVIATRO XPRO 225 EC (100% vs 96.9%).
In 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product NATIVO PRO 325 SC. CA3642 at the rate of 1.4 L/ha delivered a level of control numerically equivalent than NATIVO PRO 325 SC (38.6% vs 43.4%). CA3642 at 1.2L/ha was statistically inferior to the reference product NATIVO PRO 325 SC.

At assessment date “late” (32 DA-B), when considering **leaf 2**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and PRIAXOR. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (100%) than CA2702 (100%) and PRIAXOR (100%). The level of infection observed in the untreated check was 9.9% severity.

At assessment date “late” (32 DA-B), when considering **leaf 3**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and PRIAXOR. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (100%) than CA2702 (100%) and PRIAXOR (100%). The level of infection observed in the untreated check was 19.6% severity.

At **leaf level 1**, **assessment date “very late”** (37-43 DA-B), the performance of CA3642 was assessed in a total of 3 trials. Infestation levels (UTC) in the trials ranged from 9.6 – 52.6% severity. In 3 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 3 trials, the performance of CA3642 applied at both rates was compared to the reference product CA2702.
On average of 3 trials, CA3642 applied at 1.2 L/ha showed equivalent efficacy (87.7%) compared to CA2702 (80.6%). Compared at CA2702, CA3642 at 1.2L/ha was statistically superior to the reference product in 1 trial out of 3. On average of 3 trials, CA3642 applied at 1.4 L/ha showed higher efficacy (92.6%) than CA2702 (80.6%). Compared at CA2702, CA3642 at 1.4L/ha was statistically superior to the reference product in 2 trials out of 3.
In 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product PRIAXOR. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent compared to PRIAXOR (respectively 99.2% - 99.6% vs 97.9%).
In 1 assessment, statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product RIZA 20EC. CA3642 at the rate of 1.4 L/ha delivered a level of control statistically higher than RIZA 20EC (96.9% vs 85.4%). The test product CA3642 applied at 1.2L/ha delivered a level of control numerically equivalent (87.5%) than RIZA 20EC (85.4%), no statistical difference was detected in this trial.
In 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product CA2445. CA3642 at the rate of 1.4 L/ha delivered a level of control numerically equivalent than CA2445 (81.4% vs 82.5%). The test product CA3642 applied at 1.2L/ha was statistically inferior to the reference product CA2445.

At **leaf level 2**, assessment date “very late” (37-43 DA-B), the performance of CA3642 was assessed in a total of 3 trials. Infestation levels (UTC) in the trials ranged from 13.0 – 56.8% severity. In 3 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 3 trials, the performance of CA3642 applied at both rates was compared to the reference product CA2702.
On average of 3 trials, CA3642 applied at 1.2 L/ha and 1.4 L/ha showed slightly higher efficacy (respectively 86.5% and 88.2%) compared to CA2702 (84.1%). Compared at CA2702, CA3642 at 1.2 L/ha and 1.4 L/ha was statistically superior to the reference product in 1 trial out of 3.
In 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product PRIAXOR. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent compared to PRIAXOR (respectively 99.6% - 100% vs 99.3%).
In 1 assessment, statistical difference was detected between test product CA3642 applied at 1.4 L/ha and reference product RIZA 20EC. CA3642 at the rate of 1.4 L/ha delivered a level of control numerically higher than RIZA 20EC (81.5% vs 71.5%). The test product CA3642 applied at 1.2 L/ha delivered a level of control numerically equivalent (78.5%) than RIZA 20EC (71.5%), no statistical difference was detected in this trial.
In 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha and 1.4 L/ha and reference product CA2445. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent than CA2445 (respectively 81.3% - 83.0% vs 83.0%).

At assessment date “very late” (37 DA-B), when considering **leaf 3**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and RIZA 20EC. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (respectively 71.6% – 75.0%) than CA2702 (72.1%) and RIZA 20EC (71.2%).

After 1 application of CA3642 applied at 1.2 – 1.4 L/ha

At assessment date "early" (15 DA-A), when considering **leaf 3**, in 1 assessment, statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product CA2702. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically higher (respectively 89.8% – 95.9%) than CA2702 (67.3%).
Compared to CA2445, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically comparable (respectively 89.8% – 95.9%) than CA2445 (93.9%). The level of infection observed in the untreated check was 4.9% severity.

At assessment date "early" (15 DA-A), when considering **leaf 4**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and CA2445. CA3642 at the rate of 1.2 L/ha 1.4 L/ha delivered a level of control numerically equivalent (respectively 87.2% – 91.7%) than CA2702 (81.7%) and CA2445 (94.5%). The level of infection observed in the untreated check was 10.9% severity.

Comments of zRMS:

5 efficacy trials were carried out to control of *Puccinia recondita* in winter wheat in the South-Eats EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 61,2-61,7% on L1, 83,6-83,8% on L2 and 85,6-88,3% on L3 in the early assessment. In the later observation, the test product at claimed doses presented 67,7-69,3% on L1 and full control on L2 and L3. Moderate effectiveness was observed on L3 and >86% on L1-L2 in the very late assessment. Also after 1 application, good results have been noted in the early assessment. The mean efficacy was 91,6-95,1% at 1,4 l/ha and 87,6-89% at 1,2 l/ha on L3 and L4. Similar effect was visible for the reference products in most trials.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of PUCCRE in winter wheat in the SE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

Summary of data on PUCCRE/T in wheat

Data is presented from a total of 19 trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control *Puccinia recondita* (PUCCRE/T) in winter wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

The data presented supports the claim for registration of CA3642 applied at 1.2 L/ha-1.4 L/ha for control of *Puccinia recondita* (PUCCRE/T) in wheat.

Winter Wheat (TRZAW) – Yellow rust (PUCCST/I – *Puccinia striiformis*)

A total of 14 trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 for the control of *Puccinia striiformis* (PUCCST/I) in winter wheat in the Maritime (11 trials), North-East (1 trial) and South-East (2 trials) EPPO zones.

The trials from the Maritime EPPO zone were carried out in the United Kingdom (10) and Germany (1).

The trial from the North-East EPPO zone was carried out in Poland (1).
The trials from the South-East EPPO zone were carried out in Romania (2).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZAW – PUCCST/I – Maritime EPPO zone

11 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCST/I in the Maritime EPPO zone. The trials were carried out in Germany (1) and Great Britain (10) between 2019 and 2020. The first application took place at crop stage BBCH 31 - 35 and the second application was done 16 - 35 days later, at BBCH 39 - 59.

Table 3.2-304: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – 2 applications – Early assessment timing – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
Efficacy after 2 applications																
LEAF1 early	31-51	14-17	*6*	*Mean*	*21.3*	***98***	***95.2***	*85.9*			3=			3=		
				Min	4.7	**88.7**	**79.5**	63.5			3>			3>		
				Max	50.6	**100**	**100**	99								
			5	*Mean*	*23.9*	***97.6***	***95.7***	*90.4*	*96.2*			5=			5=	
				Min	4.7	**88.7**	**79.5**	83.2	84.5							
				Max	50.6	**100**	**100**	99	100							
			1		*8.5*	***100***	***92.9***	*63.5*		*97.6*			1=			1=
LEAF2 early	31-51	14-17	*6*	*Mean*	*46.7*	***96.8***	***94.3***	*74.4*	*92.7*		3=			3=		
				Min	4.2	~~89.6~~ **89.7**	**80.2**	46.9	84.2		3>			3>		
				Max	87.5	**100**	**100**	86.7	100							
			5	*Mean*	*54.8*	***96.1***	***93.8***	*73*	*92.7*		2=	3=		2=	4=	
				Min	4.2	~~89.6~~ **89.7**	**80.2**	46.9	84.2		3>	2>		3>	1>	
				Max	87.5	**100**	**100**	86.7	100							
			1		*6.5*	***100***	***96.9***	*81.5*		*100*	1=		1=	1=		1=
LEAF3 early	31-49	14-15	*4*	*Mean*	*71.8*	***89.4***	***83***	*49.5*	*78.8*		4>	3=		1=	3=	
				Min	19.1	**74.5**	**58.7**	15.6	42.1			1>		3>	1>	
				Max	96.9	**100**	**100**	85.3	100							

Leaf level assm. timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
			5	*Mean*	*59.1*	***87.1***	***81.3***	*54.8*			1=			2=		
				Min	8.5	**74.5**	**58.7**	15.6			4>			3>		
				Max	96.9	**100**	**100**	85.3								
			1		*8.5*	***77.9***	***74.4***	*76*		*70.8*	1=		1=	1=		1=
LEAF4 early	40	17	*1*		*24.1*	***89.7***	~~86.5~~ **86.4**	*4.6*	*83*		1>	1=		1>	1=	

Table 3.2-305: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – 2 applications – Late assessment timing – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
Efficacy after 2 applications																
LEAF1 late	48-61	27-34	*3*	*Mean*	*40.6*	***96.5***	***94.5***	*80.8*	*91.9*		1=	2=		2=	2=	
				Min	21.4	**90.3**	**84.4**	77.4	88.2		2>	1>		1>	1>	
				Max	53	**99.9**	**99.8**	87.4	98.7							
			4	*Mean*	*41*	***92.3***	***89.3***	*73*			1=			2=		
				Min	21.4	**79.5**	**73.8**	49.5			3>			2>		
				Max	53	**99.9**	**99.8**	87.4								

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
			1		*42*	***79.5***	***73.8***	*49.5*		*75.5*	1>		1=	1>		1=
LEAF2 late	48-61	27-34	*4*	*Mean*	*55.6*	***89.2***	***86.6***	*67.6*	*86*		1=			1=		
				Min	17.1	**71.6**	**66.8**	42.2	70.5		3>			3>		
				Max	82.1	**99.5**	**99.1**	82.1	97							
			3	*Mean*	*46.8*	***90.1***	***88.3***	*68*	*86*		1=	2=		1=	2=	
				Min	17.1	**71.6**	**66.8**	42.2	70.5		2>	1>		2>	1>	
				Max	73.2	**99.5**	**99.1**	82.1	97							
			1		*82.1*	***86.7***	***81.4***	*66.6*		*83.3*	1>		1=	1>	1=	

Table 3.2-306: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – 2 applications – Very late assessment timing – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRO-LINE 275 0.72 L/ha**
Efficacy after 2 applications																
LEAF1 very late	59-77	36-46	*4*	*Mean*	*42.2*	***96.8***	***96.8***	*69.8*	*80.7*		2>	2=		2>	2=	
				Min	9.1	**94.5**	**94.4**	36.1	51.7		2=	2>		2=	2>	
				Max	88.9	**100**	**100**	97.2	99.4							
			6	*Mean*	*30.8*	***96.9***	~~*87.3*~~ ***87.4***	*59.9*			2=			3=		

Leaf level assm. timing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PROLINE 275 PTZ 275 g/L EC 0.72 L/ha 198 g PTZ/ha	CA3642 at 1.4 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA3642 at 1.2 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRO-LINE 275 0.72 L/ha
				Min	5.6	~~94.1~~ **94.3**	~~61.8~~ **62.2**	30.4			4>			3>		
				Max	88.9	**100**	**100**	97.2								
			2	*Mean*	*7.9*	***97.1***	***68.4***	*40.2*		*85.2*	2>		1=		1=	1=
				Min	5.6	~~94.1~~ **94.3**	~~61.8~~ **62.2**	30.4		79.4			1>		1>	1<
				Max	10.2	**100**	**75**	50		91.1						
LEAF2 very late	54-77	36-46	*4*	*Mean*	*64.1*	***96***	***95.3***	*59.6*	*73.7*		4>	2=		4>	2=	
				Min	8.4	**91.7**	**91.9**	29	19.1			2>			2>	
				Max	100	**100**	**100**	89.3	100							
			7	*Mean*	*41.4*	***91.7***	***85.6***	*55.9*			1=			2=		
				Min	5 .2	~~58.1~~ **58.4**	~~18.1~~ **18.0**	18.1			6>			5>		
				Max	100	**100**	**100**	100								
			3	*Mean*	*11.2*	***86***	***72.7***	*50.9*		*81.5*	1=		2=	2=		2=
				Min	5.2	~~58.1~~ **58.4**	~~18.1~~ **18.0**	18.1		44.5	2>		1>	1>		1<
				Max	22.7	**100**	**100**	100		100						
LEAF3 very late	54-77	36-43	*3*	*Mean*	*93.4*	***90.8***	***78.2***	*39.5*	*58.4*		3>	1=		3>	1=	
				Min	83.5	**80.9**	**50.2**	4.6	11.4			2>			2>	
				Max	100	**100**	**100**	86.3	100							
			4	*Mean*	*71.6*	***93.1***	***83.6***	*54.6*			1=			1=		
				Min	5.9	**80.9**	**50.2**	4.6			3>			3>		
				Max	100	**100**	**100**	100								
			1		*5.9*	***100***	***100***	*100*		*100*	1=		1=	1=		1=
LEAF4 very late	68	43	*1*		*100*	***81.8***	***77.1***	*7.1*	*37*		1>	1>		1>	1>	

Table 3.2-307: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – 1 application – Early assessment timing – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
Efficacy after 1 application															
LEAF2 early	16		*1*		*32.7*	***86.9***	~~80.7~~ **80.8**	*89*	*84.4*	1=	1=		1=	1=	
LEAF3 early	14-16		*3*	*Mean* Min Max	*23.4* 6.4 55.3	***94.8*** **84.3** **100**	***91.7*** **75** **100**	*79.4* 64.1 100	*93.3* 79.9 100	2= 1>	3=		2= 1>	3=	
LEAF4 early	14-16		*5*	*Mean* Min Max	*38.9* 11.8 85.2	***92.3*** ~~65.8~~ **65.9** **100**	***88.2*** **54.1** **100**	*59.1* 29.5 83.9	*75.9* 0 100	1= 4>	5=		1= 4>	5=	

Table 3.2-308: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – 1 application – Late assessment timing – Maritime EPPO zone

Leaf level assm. tim-ing	DA-A	DA-B	No. of tri-als & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PROLINE 275 0.72 L/ha
Efficacy after 1 application																
LEAF1 late	27		*1*		*11.5*	~~97.4~~ 97.2	~~97.4~~ 97.7	*42.6*	*86.1*		1>	1>		1>	1>	
LEAF2 late	27-34		*2*	*Mean*	*20.4*	*89.2*	~~92.5~~ 92.8	*48.1*	*81.2*		2>	1=		2>	2>	

Leaf level assm. tim-ing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
				Min	20	**88.2**	**87.2**	24	76.4			1>				
				Max	20.8	~~89.9~~ **90.1**	**98.3**	72.1	86							
LEAF3 late	25-34		*3*	*Mean*	*51.8*	***91.4***	***89***	*31.1*	*83.8*		3>	2=		3>	2=	
				Min	12.2	**82**	**79.3**	19	71.3			1>			1>	
				Max	86.8	**96.3**	**99.1**	48.9	95.7							
LEAF4 late	25-34		*2*	*Mean*	*61.3*	***87.5***	***78.4***	*20.6*	*70*		2>	1=		2>	1=	
				Min	22.5	**86.2**	**76.4**	20.4	59.5			1>			1>	
				Max	100	**88.9**	**80.4**	20.7	80.4							

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date ''early'' (14-17 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 98% and 95.2% mean efficacy respectively across 6 trials. Across 5 trials, it achieved 97.6% and 95.7% respectively and in 1 trial, it reached 100 % and 92.9% respectively. The level of infection observed in the untreated check was 21.3% severity across 6 trials, 23.9% across 5 trials and 8.5% in 1 trial.

Performance of CA3642 was higher compared to CA2702 on average and this is statistically significant for 3 out of 6 individual assessments.

Performance of CA3642 was equivalent to CA2445. No statistical difference was observed in the individual assessments.

Performance of CA3642 was equivalent to PROLINE 275 with no statistical difference.

In **leaf level 2**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 96.8% and 94.3% mean efficacy respectively across 6 trials. Across 5 trials, it achieved 96.1% and 93.8% respectively and across in trial, it reached 100 % and 96.9%. The level of infection observed in the untreated check was 46.7% severity across 6 trials, 54.8% across 5 trials and 6.5% in 1 trial.

Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 3 out of 6 individual assessments.

Performance of CA3642 was overall equivalent to CA2445.However, CA3642 applied at 1.4 L/ha was significantly higher in 2 trials and applied at 1.2 L/ha was significantly higher in 1 trial.

Performance of CA3642 was equivalent to PROLINE 275 with no statistical difference.

In **leaf level 3**, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 89.4% and 83% mean efficacy respectively across 4 trials. Across 5 trials, it achieved 87.1% and 81.3% respectively and in 1 trial, 77.9 % and 74.4% respectively. The level of infection observed in the untreated check was 71.8% severity across 4 trials, 59.1% across 5 trials and 8.5% in 1 trial.

Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 4 out of 5 individual assessments for 1.4 L/ha and 3 of 5 for 1.2 L/ha.

Performance of CA3642 was higher than CA2445. A statistical difference was observed for 1 out of 4 individual assessments.

CA3642 significantly reduced disease severity compared to the untreated at all assessments.

At assessment date ''late'' (27-34 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha the mean efficacy across 3 trials, achieved 96.5% and 94.5% respectively, across 4 trials achieved 92.3% and 89.3% respectively and across 1 trial achieved 79.5 % and 73.8%. The level of infection observed in the untreated check was 40.6% severity across 3 trials, 41% across 4 trials and 42% across 1 trial.

Performance of CA3642 was higher than CA2702 on average, with statistical differences observed for 2 out of 4 the individual assessments.

Performance of CA3642 was equivalent to CA2445. No statistical difference was observed for 2 out of 3 the individual assessments.

Performance of CA3642 was equivalent to PROLINE 275 with statistical difference.

In **leaf level 2**, the test product CA3642 applied at 1.4 and 1.2 L/ha the mean efficacy across 4 trials, achieved 89.2% and 86.6% respectively, across 3 trials achieved 90.1% and 88.3% respectively and across 1 trial achieved 86.7 % and 81.4%. The level of infection observed in the untreated check was 55.6% severity across 4 trials, 46.8% across 3 trials and 82.1% across 1 trial.

Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 3 out of 4 the individual assessments.

Performance of CA3642 was equivalent to CA2445. No statistical difference was observed for 2 out of 3 the individual assessments.

Performance of CA3642 was equivalent to PROLINE 275 with no statistical difference.

CA3642 significantly reduced disease severity compared to the untreated at all assessments.

At assessment date ‘’very late’’ (36-46 DA-B), in **leaf level 1**, the test product CA3642 applied at 1.4 and 1.2 L/ha the mean efficacy across 4 trials, achieved 96.8% for both applications, across 6 trials achieved 96.9% and 87.3% respectively and across 2 trials achieved 97.1 % and 68.4%. The level of infection observed in the untreated check was 42.2% severity across 4 trials, 30.8% across 6 trials and 7.9% across 2 trials.

Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 4 out of 6 the individual assessments.
Performance of CA3642 was higher than CA2445, with statistical differences observed for 2 out of 4 the individual assessments.
Performance of CA3642 applied at 1.4 L/ha was significantly higher than PROLINE 275 in 1 trial and significantly lower when applied at 1.2 L/ha in the same trial.

In **leaf level 2**, the test product CA3642 applied at 1.4 and 1.2 L/ha the mean efficacy across 4 trials, achieved 96% and 95.3% respectively, across 7 trials achieved 91.7% and 85.6% respectively and across 3 trial achieved 86% and 72.7%. The level of infection observed in the untreated check was 64.1% severity across 4 trials, 41.1% across 7 trials and 11.2% across 3 trials.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 6 out of 7 the individual assessments.
Performance of CA3642 was higher than CA2445 and this is statistically significant for 2 out of 4 the individual assessments.
Performance of CA3642 was overall equivalent to PROLINE 275. Performance of CA3642 applied at 1.4 L/ha was significantly higher than PROLINE 275 in 1 trial and significantly lower when applied at 1.2 L/ha in the same trial.

In **leaf level 3**, the test product CA3642 applied at 1.4 and 1.2 L/ha the mean efficacy across 3 trials, achieved 90.8% and 78.2% respectively, across 4 trials achieved 93.1% and 83.6% respectively and across 1 trial achieved 100% on both dose rates. The level of infection observed in the untreated check was 93.4% severity across 3 trials, 71.6% across 4 trials and 5.9% across 1 trial.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 3 out of 4 the individual assessments.
Performance of CA3642 was higher than CA2445 and this is statistically significant for 2 out of 3 the individual assessments.
Performance of CA3642 was equivalent to PROLINE 275 with no statistical difference.

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
At assessment date ‘’early’’ (14-16 DA-A), in **leaf level 2**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 86.9% and 80.7% respectively. The level of infection observed in the untreated check was 32.7% severity.
Performance of CA3642 was equivalent to CA2702 with no statistical difference.
Performance of CA3642 was equivalent to CA2445 with no statistical difference.

In **leaf level 3**, the mean efficacy across 3 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 94.8% and 91.7% respectively. The level of infection observed in the untreated check was 23.4% severity.
Performance of CA3642 was higher than CA2702 on average with no statistically significant differences observed in 2 out of 3 of the individual assessments.
Performance of CA3642 was equivalent to CA2445 with no statistically significant differences observed in the individual assessments.

In **leaf level 4**, the mean efficacy across 5 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 92.3% and 88.2% respectively. The level of infection observed in the untreated check was 38.9% severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant for 4 out of 5 the individual assessments.
Performance of CA3642 was equivalent to CA2445 with no statistical difference observed in the individual assessments.

At assessment date ''late'' (27-34 DA-A), in **leaf level 1**, in trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 97.4% for both application rates. The level of infection observed in the untreated check was 11.5% severity.

Performance of CA3642 was higher than CA2702 with statistical difference.
Performance of CA3642 was higher than CA2445 with statistical difference.

In **leaf level 2**, the mean efficacy across 2 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 89% and 92.5% respectively. The level of infection observed in the untreated check was 20.4% severity.
Performance of CA3642 was higher than CA2702 on average with statistically significant differences observed in the individual assessments.
Performance of CA3642 was higher than CA2445 with statistically significant differences observed in the individual assessments.

In **leaf level 3**, the mean efficacy across 3 trials, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 91.4% and 89% respectively. The level of infection observed in the untreated check was 51.8% severity.
Performance of CA3642 was higher than CA2702 on average and this is statistically significant observed in the individual assessments.
Performance of CA3642 was higher than CA2445 with a statistical difference observed in 1 out 3 of the individual assessments.

Comments of zRMS:

11 efficacy trials were carried out to control of *Puccinia striiformis* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 95,2-98% on L1, 94,3-96,8% on L2, 83-89,4% on L3 and 86,4-89,7% on L4 in the early assessment. In late observation, the test product at claimed doses presented results of 94,5-96,5% on L1 and 86,6-89,2% on L2. This trend was visible also in very late observations (>96% on L1 and >95% on L2). No significant differences between CA3642 and reference products CA2445 and Proline have been noted. CA2702 achieved inferior effectiveness compared to the test product. Good level of control was observed after 1 application. The mean efficacy was 80,8-86,9% on L2, 91,7-94,8% on L3 and 88,2-92,3% on L4 in the early assessment. In the late observations, CA3642 presented results of 97,2-97,7% on L1, 89,2-92,8% on L2, 89-91,4% on L3 and 78,4-87,5% on L4.
Based on the above summary, CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control of PUCCST in winter wheat in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PUCCST/I – North-East EPPO zone

1 trial is available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCST/I in the North-East EPPO zone. The trial was carried out in Poland (1) in 2020. The first application took place at crop stage BBCH 30 and the second application was done 57 days later, at BBCH 30.

Table 3.2-309: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – valid assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC * 65 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
Efficacy after 2 applications																
LEAF1 very late	84	35	1		7.1	~~*94.4*~~ ***94.7***	~~*84.5*~~ ***85.0***	*88.7*	*90.1*	*84.5*	1=	1=	1=	1=	1=	1=

* EPC + MTC: Epoxiconazole 37.5 g/L + Metconazole 27.5 g/L

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date "very late" (35 DA-B), when considering **leaf 2,** in 1 assessment, no statistical difference was detected between the test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 84.5% and 94.4%) and reference products CA2702 (88.7%), CA2445 (90.1%), and OSIRIS 65 EC (84.5%), although a distinct numerical difference was observable with this latter showing a (numerically) lower efficacy than the test product applied at 1.4 L/ha.
The level of infection observed in the untreated check was 7.1% severity.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Puccinia striiformis* in winter wheat in the North-East EPPO climatic zone. Also 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved good results of 85-94,7% after 2 applications in the very late assessment. No significant differences between test and reference products were observed. Due to limited number of trials, this use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

TRZAW – PUCCST/I – South-East EPPO zone

2 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCST/I in the South-East EPPO zone. The trials were carried out in Romania in 2019. The first application took place at crop stage BBCH 33-34 and the second application was done 21 - 28 days later, at BBCH 59 – 61.

Table 3.2-310: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – Late assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 2 applications													
LEAF1 late	55	27	*1*		*20.9*	***99.8***	***99.8***	*98.8*	*99.7*	1>	1=	1>	1=
LEAF2 late	55	27	*1*		*29.6*	***99.7***	***99.5***	*97.9*	*99.5*	1>	1=	1>	1=
LEAF3 late	55	27	*1*		*57.9*	***100***	***99.7***	*99.1*	*99.7*	1=	1=	1=	1=

Table 3.2-311: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PUCCST/I – Very late assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 2 applications													
LEAF2 very late	57	36	*1*		*5.2*	***99.4***	***99.4***	*99.2*	*99.6*	1=	1=	1=	1=

<u>**After 2 applications of CA3642 applied at 1.2 – 1.4 L/ha**</u>

At assessment date “late” (27 DA-B), when considering **leaf 1**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and CA2445. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (99.8%) than CA2702 (98.8%) and CA2445 (99.7%). However, a significant difference was observed on efficacy between CA3642 and CA2702. The level of infection observed in the untreated check was 20.9% severity.

At assessment date “late” (27 DA-B), when considering **leaf 2**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and CA2445. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (respectively 99.5% and 99.7%) than CA2702 (97.9%) and CA2445 (99.5%). However, a significant difference was observed on efficacy between CA3642 and CA2702. The level of infection observed in the untreated check was 29.6% severity.

At assessment date “late” (27 DA-B), when considering **leaf 3**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and CA2445. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (respectively 99.7% and 100%) than CA2702 (99.1%) and CA2445 (99.7%). The level of infection observed in the untreated check was 57.9% severity.

At assessment date “very late” (36 DA-B), when considering **leaf 2**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and CA2445. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (99.4%) than CA2702 (99.2%) and CA2445 (99.6%). The level of infection observed in the untreated check was 5.2% severity.

Comments of zRMS:

2 efficacy trials were carried out to control of *Puccinia striiformis* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness after 2 applications, either in the late and very late assessments. The mean efficacy was 99,8% on L1, 99,5-99,7% on L2 and 99,7-100% on L3 in the late assessment. The test product at claimed doses presented results of 99,4% on L2 in the very late observation. Similar level of control was visible in case of reference products. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Summary of data on PUCCST/I in wheat

Data is presented from a total of 14 trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control *Puccinia striiformis* (PUCCST/I) in winter wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

The data presented supports the claim for registration of CA3642 applied at 1.2 L/ha-1.4 L/ha for control of *Puccinia striiformis* (PUCCST/I) in wheat.

Winter Wheat (TRZAW) – Tan spot (PYRNTR – *Pyrenophora tritici-repentis*)

A total of 14 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of *Pyrenophora tritici-repentis* (PYRNTR) in winter wheat in the Maritime (1 trial), North-East (10 trials) and South-East (3 trials) EPPO zones.

The trial from the Maritime EPPO zone was carried out in the Czech Republic.
The trials from the North-East EPPO zone were carried out in Lithuania (3) and Latvia (7).
The trials from the South-East EPPO zone were carried out in Bulgaria (2) and Slovakia (1).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZAW – PYRNTR – Maritime EPPO zone

The results from 1 trial are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PYRNTR in the Maritime EPPO zone. The trial was carried out in Czech Republic in 2019. The first application took place at crop stage BBCH 32 and the second application was done 24 days later, at BBCH 41.

Table 3.2-312: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF3 early	41	17	*1*		*7.1*	~~*90.1*~~ ***89.9***	~~*87.3*~~ ***87.1***	*63.4*	*83.1*	1>	1=	1>	1=
LEAF4 early	41	17	*1*		*16.7*	~~*89.2*~~ ***89.5***	~~*84.4*~~ ***84.3***	*58.7*	*79.6*	1>	1=	1>	1=
LEAF1 very late	59	35	*1*		*58.4*	***63.4***	***61.5***	*53.4*	*49.7*	1=	1=	1=	1=

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date ''early'' (17 DA-B), in **leaf level 3**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 90.1% and 87.3% efficacy respectively. The level of infection observed in the untreated check was 7.1% severity.

Performance of CA3642 at both rates was statistically higher compared to CA2702.

Performance of CA3642 at both rates was comparable to CA2445 with no statistical difference.

At assessment date ''very late'' (35 DA-B), in **leaf level 1**, in 1 trial, the test product CA3642 applied at 1.4 and 1.2 L/ha achieved 63.4% and 61.5% efficacy respectively. The level of infection observed in the untreated check was 58.4% severity.

Performance of CA3642 was numerically higher compared to CA2702 and CA2445, although no statistical difference was detected.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Pyrenophora tritici-repentis* in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results of 87,1-89,9% on L3 and 84,3-89,5% on L4 after 2 applications in the early assessment. In the very late assessment, the test product presented moderate effectiveness (61,5-63,4%) on L1. Similar effect was visible in case of CA2445. CA2702 achieved significant inferior results compared to the test product. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

TRZAW – PYRNTR – North-East EPPO zone

10 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PYRNTR in the North-East EPPO zone. The trials were carried out in Lithuania (3) and Latvia (7) between 2019 and 2021. The first application took place at crop stage BBCH 32 - 37 and the second application was done 16 - 33 days later, at BBCH 39 - 59.

Table 3.2-313: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 2 applications – Early assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF1 early	41-49	13-21	3	*Mean*	*10.1*	~~84.4~~ ***84.7***	***82.3***	*39.1*	*82.9*	3>	3=	3>	3=
				Min	6.5	~~80.0~~ **80.3**	**76.9**	26.3	75.4				
				Max	13.8	~~89.9~~ **90.4**	~~85.9~~ **85.8**	57.2	92.9				
LEAF2 early	31-44	13-15	4	*Mean*	*17.2*	~~76.3~~ ***76.5***	~~77.3~~ ***77.4***	*31.5*	*73.5*	4>	4=	4>	4=
				Min	5.0	~~60.0~~ **60.3**	~~62.0~~ **63.1**	12.0	46.0				
				Max	29.0	**86.6**	**85.4**	42.1	85.1				
LEAF4 early	41	14	1		*11.0*	~~11.8~~ ***11.9***	~~31.8~~ ***32.3***	*4.5*	*28.2*	1=	1=	1=	1=

Table 3.2-314: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 2 applications – Late assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF1 late	41-56	25-31	4	*Mean*	*15.8*	~~52.8~~ ***52.9***	~~54.0~~ ***54.1***	*31.8*	*40.2*	3=	3=	3=	3=
				Min	6.8	~~25.6~~ **25.8**	~~16.9~~ **17.2**	5.6	9.5	1>	1>	1>	1>
				Max	31.8	~~77.9~~ **78.0**	~~80.9~~ **81.2**	41.7	77.9				
LEAF2 late	51-70	21-37	4	*Mean*	*39.5*	***50.7***	***50.7***	*20.9*	*49.6*	3>	4=	3>	4=
				Min	14.1	**28.4**	**23.9**	8.9	22.5	1=		1=	
				Max	80.6	~~66.0~~ **65.8**	~~72.3~~ **72.7**	31.2	63.1				

Table 3.2-315: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 2 applications – Very late assessments – North-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 **L/ha** **210 g AZX/ha +**	**1.2** **L/ha** **180 g AZX/ha +**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**

						210 g PTZ/ha	180 g PTZ/ha						
Efficacy after 2 applications													
LEAF1 very late	60-70	35-37	3	*Mean*	*9.9*	***65.2***	~~*59.2*~~ ***59.9***	*39.7*	*58.7*	1=	3=	1=	3=
				Min	4.1	~~29.3~~ **30.5**	~~24.4~~ **25.6**	22.0	24.4	2>		2>	
				Max	16.1	**86.3**	~~82.6~~ **82.9**	52.8	84.5				

Table 3.2-316: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 1 application – Early assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 1 application													
LEAF 4 early	15-17		2	*Mean*	*4.8*	***45.2***	~~*48.4*~~ ***49.0***	*35.7*	*50.3*	2=	2=	2=	2=
				Min	4.2	**16.7**	~~27.8~~ **28.4**	16.7	31.5				
				Max	5.4	~~73.8~~ **73.7**	~~69.0~~ **69.5**	54.8	69.0				

Table 3.2-317: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 1 application – Late assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 1 application													
LEAF2 late	27		2	*Mean*	*5.2*	***73.9***	***73.4***	*35.8*	*77.3*	2>	2=	2>	2=
				Min	5.0	**70.0**	~~64.8~~ **65.7**	29.6	66.7				
				Max	5.4	~~77.8~~ **78.2**	**82.0**	42.0	88.0				
LEAF3 late	27-30		3	*Mean*	*8.9*	~~*79.1*~~ ***79.0***	***75.1***	*34.6*	*78.2*	3>	3=	3>	3=
				Min	7.0	~~68.6~~ **68.2**	**61.4**	16.8	67.1				

				Max	11.3	~~88.1~~ **87.8**	~~86.9~~ **87.5**	65.5	90.5				
LEAF4 late	30		1		*15.5*	*~~65.2~~* ***65.3***	*~~59.4~~* ***59.7***	*25.8*	*65.2*	1>	1=	1>	1=

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date "early" (13-21 DA-B), when considering **leaf 1,** on average of 3 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 82.3% and 84.4%) was comparable to the reference standard product CA2445 (82.9%) but numerically higher than CA2702 (39.1%).
The level of infection observed in the untreated check was 10.1% severity.
When considering the individual assessments, no statistical difference was detected between CA3642 and CA2445, but the efficacy reached by CA3642 at both rates was statistically higher to the one achieved by CA2702 in all 3 assessments. CA3642 significantly reduced disease severity compared to the untreated at all assessments.

At assessment date "early" (13-15 DA-B), when considering **leaf 2,** on average of 4 assessments, test product CA3642 applied at 1.2 or 1.4 L/ha achieved higher level of efficacy (respectively 77.3% and 76.3%) compared to the reference product CA2702 (31.5%), and equivalent efficacy than CA2445 (73.5%).
The level of infection observed in the untreated check was 17.2% severity.
When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher to the one achieved by CA2702 in all 4 assessments, while no statistical difference was detected compared to CA2445. CA3642 significantly reduced disease severity compared to the untreated at all assessments.

At assessment date "early" (14 DA-B), when considering **leaf 4,** in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 31.8% and 11.8%) and reference products CA2702 (4.5%), and CA2445 (28.2%), although a distinct numerical difference was observable with CA2702 showing a numerically lower efficacy than the test product applied at 1.2 L/ha.
The level of infection observed in the untreated check was 11.0% severity.

At assessment date "late" (25-31 DA-B), when considering **leaf 1,** on average of 4 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 54.0% and 52.8%) was higher than the reference standard products CA2702 (31.8%), and CA2445 (40.2%).
The level of infection observed in the untreated check was 15.8% severity. CA3642 significantly reduced disease severity compared to the untreated in 3 of 4 assessments.
When considering the individual assessments, a statistical difference was detected compared to CA2702 in 1 assessment out of 4.
The efficacy reached by CA3642 at both rates was statistically higher than the one achieved by CA2445 in 1 assessment out of 4.

At assessment date "late" (21-37 DA-B), when considering **leaf 2,** on average of 4 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (50.7% at both rates) was higher than the reference standard product CA2702 (20.9%), and equivalent to CA2445 (49.6%).
The level of infection observed in the untreated check was 39.5% severity. . CA3642 significantly reduced disease severity compared to the untreated at all assessments.
When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher than the one achieved by CA2702 in 3 assessments out of 4, and no statistical difference was detected between test product and CA2445 in all 4 assessments.

After two applications of CA3642 applied at 1.2-1.4 L/ha

At assessment date "very late" (35-37 DA-B), when considering **leaf 1,** on average of 3 assessments, mean efficacy of test product CA3642 applied at 1.2 L/ha or 1.4 L/ha (respectively 59.2% and 65.2%) was higher than the reference standard product CA2702 (39.7%), and equivalent to CA2445 (58.7%).
The level of infection observed in the untreated check was 9.9% severity. CA3642 significantly reduced disease severity compared to the untreated at all assessments.

When considering the individual assessments, the efficacy reached by CA3642 at both rates was statistically higher than the one achieved by CA2702 in 2 assessments out of 3, and no statistical difference was detected between test product and CA2445 in all 3 assessments.

After one application of CA3642 applied at 1.2-1.4 L/ha
At assessment date "early" (15-17 DA-A), when considering **leaf 4,** on average of 2 assessments, no difference was detected between test product CA3642 applied at 1.4 L/ha or 1.2 L/ha (respectively 45.2% and 48.4%) and reference products CA2702 (35.7%) and CA2445 (50.3%). No statistical difference was detected in the individual assessments. The level of infection observed in the untreated check was 4.8% severity. CA3642 significantly reduced disease severity compared to the untreated in both trials.

At assessment date "late" (27 DA-A), when considering 2 assessments on **leaf 2,** test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 73.9% and 73.4% on average) compared to the reference product CA2702 (35.8% on average), and it did not show any statistical difference compared to CA2445 (77.3%). The level of infection observed in the untreated check was 5.2% severity. CA3642 significantly reduced disease severity compared to the untreated in both trials.

At assessment date "late" (27-30 DA-A), when considering 3 assessments on **leaf 3,** test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 79.1% and 75.1% on average) compared to the reference product CA2702 (34.6% on average), and it did not show any statistical difference compared to CA2445 (78.2%). The level of infection observed in the untreated check was 8.9% severity. CA3642 significantly reduced disease severity compared to the untreated in all trials.

At assessment date "late" (30 DA-A), when considering **leaf 4,** in 1 assessment, test product CA3642 applied at 1.4 or 1.2 L/ha achieved a statistically significant higher level of efficacy (respectively 65.2% and 59.4%) compared to the reference product CA2702 (25.8%), and it did not show any statistical difference compared to CA2445 (65.2%). The level of infection observed in the untreated check was 15.5% severity. CA3642 significantly reduced disease severity compared to the untreated in this trial.

Comments of zRMS:

10 efficacy trials were carried out to control of *Pyrenophora tritici-repentis* in winter wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved low to moderate effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 82,3-84,7% on L1 and 76,5-77,4% on L2 in the early assessment. The test product at claimed doses presented results of 52,9-54,1% on L1 and 50,7% on L2 in the late observation. Also low control was observed in the very late assessment. Moderate effectiveness has been noted after 1 application in the late observation. CA3642 achieved results of 73,4-73,9% on L2 and 75,1-79% on L3. Similar effect was visible for CA2445. CA2702 achieved significant inferior efficacy compared to the test product.
Based on the above results, CA3642 at 1,2-1,4 l/ha in 1-2 applications is moderately effective for control of PYRNTR in winter wheat in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TRZAW – PYRNTR – South-East EPPO zone

3 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PYRNTR in the South-East EPPO zone. The trials were carried out in Bulgaria and Slovakia in 2020 and 2021. The first application took place at crop stage BBCH 31 - 32 and the second application was done 21 - 22 days later, at BBCH 49 - 58.

Table 3.2-318: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 2 applications - Early assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC 1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC 0.8 L/ha 200 g PTZ/ha	PRIAXOR PCS + FLX* 225 g/L EC 1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC 1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha
Efficacy after 2 applications											
LEAF1 early	37	15	*1*		*12.1*	~~83.5~~ **83.7**	~~80.2~~ **80.5**	*81.8*			*80.2*
LEAF2 early	36 - 37	15	*2*	*Mean*	*13.4*	***75.5***	***71.7***	*69.5*			
				Min	7	~~61.4~~ **61.7**	~~54.8~~ **54.9**	60.4			
				Max	19.7	~~88.6~~ **89.3**	~~88.6~~ **88.4**	78.6			
			1		*19.7*	~~61.4~~ ***61.7***	~~54.8~~ ***54.9***	*60.4*			*52.3*
			1		*7*	~~88.6~~ ***89.3***	~~88.6~~ ***88.4***	*78.6*	*78.6*	*87.1*	
LEAF3 early	36 - 37	15	*2*	*Mean*	*18.7*	~~64.2~~ ***64.5***	~~63.5~~ ***64.4***	*58.3*			
				Min	15	~~40.4~~ **40.6**	~~40.4~~ **40.3**	41.3			
				Max	22.3	**88.3**	~~86.7~~ **88.3**	75.3			
			1		*22.3*	~~40.4~~ ***40.6***	~~40.4~~ ***40.3***	*41.3*			*40.8*
			1		*15*	***88.3***	~~86.7~~ ***88.3***	*75.3*	*71.3*	*83.3*	

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	CA3642 at 1.4 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAXOR 1.5 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha	CA3642 at 1.2 L/ha compared to CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAX-OR 1.5 L/ha	AVIATOR XPRO 225 EC 1.25 L/ha
Efficacy after 2 applications												
LEAF1 early	37	15	*1*		1=			1=	1=			1=
LEAF2 early	36 - 37	15	*2*	*Mean*	1>				1>			
				Min	1=				1=			
				Max								
			1		1=			1=	1=			1=
			1		1>	1>	1=		1>	1>	1=	
LEAF3 early	36 - 37	15	*2*	*Mean*	1>				1>			
				Min	1=				1=			
				Max								
			1		1=			1=	1=			1=

			1		1>	1>	1>		1>	1>	1>	

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L

Table 3.2-319: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 2 applications - Late assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX* 225 g/L EC	AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha** 180 g AZX/ha + 180 g PTZ/ha	**0.8 L/ha** 200 g AZX/ha	**0.8 L/ha** 200 g PTZ/ha	**1.5 L/ha** 225 g PCS/ha + 112.5 g FLX/ha	**1.25 L/ha** 93.75 g BXF/ha + 187.50 g PTZ/ha
Efficacy after 2 applications											
LEAF1 late	53 - 55	31 - 33	*2*	*Mean* Min Max	*8.8* 5.7 11.8	***76.2*** ~~71.9~~ **71.2** **80.5**	***73.7*** **72** ~~75.4~~ **76.2**	*71.5* 68.4 74.6			*75.5* 72 78.9
LEAF2 late	53 - 55	31 – 33	*2*	*Mean* Min Max	*13.9* 7.7 20	***65.7*** **60** **71.4**	***53.5*** **46** **61.8**	*55.5* 46 64.9			*59.9* 47 72.7

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type Rate	CA3642 at 1.4 L/ha compared to				CA3642 at 1.2 L/ha compared to			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**
Efficacy after 2 applications												
LEAF1 late	53 - 55	31 - 33	*2*	*Mean* Min Max	2=			2=	2=			2=
LEAF2 late	53 - 55	31 - 33	*2*	*Mean* Min Max	2=			2=	2=			2=

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L / ** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L

Table 3.2-320: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 2 applications - Very late assessments – South-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX* 225 g/L EC**	**AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC**
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**1.25 L/ha 93.75 g BXF/ha + 187.50 g PTZ/ha**
Efficacy after 2 applications											
LEAF1 very late	57	36	*1*		*25*	***82.8***	***80***	*65.6*	*73.2*	*70.8*	
LEAF2 very late	57	36	*1*		-	***82.7***	***77.8***	*60.5*	*69.3*	*69.8*	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAX-OR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**
Efficacy after 2 applications												
LEAF1 very late	57	36	*1*		1>	1>	1>		1>	1>	1>	
LEAF2 very late	57	36	*1*		1>	1>	1>		1>	1>	1>	

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g/L

Table 3.2-321: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW against PYRNTR – 1 application – Early assessments – South-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX* 225 g/L EC**	**AVIATOR XPRO 225 EC BXF + PTZ** 225 g/L EC**
						1.4 L/ha	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.5 L/ha**	**1.25 L/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**225 g PCS/ha + 112.5 g FLX/ha**	**93.75 g BXF/ha + 187.50 g PTZ/ha**
Efficacy after 1 application											
LEAF2 early	22		*1*		*8.3*	~~*91.6*~~ **92.1**	~~*92.8*~~ **92.4**	*96.4*			*86.7*
LEAF3 early	22		*1*		-	***80.2***	***84***	*83.2*			*78.6*
LEAF4 early	22		*1*		*19.6*	***68.4***	***73***	*64.3*			*63.3*

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM**	**Name Conc Type Rate**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
					CA2702 0.8 L/ha	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**AVIATOR XPRO 225 EC 1.25 L/ha**
Efficacy after 1 application												
LEAF2 early	22		*1*		1=			1=	1=			1=
LEAF3 early	22		*1*		1=			1=	1=			1=
LEAF4 early	22		*1*		1=			1=	1=			1=

* PCS + FLX: Pyraclostrobin 150 g/L + Fluxapyroxad 75 g/L
** BXF + PTZ: Bixafen 75 g/L + Prothioconazole 150 g

<u>**After 2 applications of CA3642 applied at 1.2 – 1.4 L/ha**</u>

At assessment date "early" (15 DA-B), when considering leaf 1, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and AVIATOR XPRO 225EC. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (respectively 80.2% and 83.5%) than CA2702 (81.8%) and AVIATOR XPRO 225EC (80.2%). The level of infection observed in the untreated check was 12.1% severity.

At leaf level 2, assessment date "early" (15 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 7.0 – 19.7% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 71.7% and 75.0%) compared to CA2702 (69.5%). Compared at CA2702, CA3642 at 1.2 L/ha and 1.4L/ha was statistically superior to the reference product in 1 trial out of 2.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference products CA2445 and PRIAXOR. CA3642 applied at 1.2 L/ha and 1.4L/ha showed significantly higher efficacy (88.6%) compared to CA2445 (78.6%) and a comparable efficacy with PRIAXOR (87.1%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically superior to the reference product CA2445 and no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product PRIAXOR.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 54.8% and 61.4%) compared to AVIATOR XPRO 225EC (52.3%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically equivalent to the reference product AVIATOR XPRO 225EC in this trial.

At leaf level 3, assessment date "early" (15 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 15.0 – 22.3% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference product CA2702.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 63.5% and 64.2%) compared to CA2702 (58.3%). Compared at CA2702, CA3642 at 1.2 L/ha and 1.4L/ha was statistically superior to the reference product in 1 trial out of 2.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference products CA2445 and PRIAXOR. CA3642 applied at 1.2 L/ha and 1.4L/ha showed higher efficacy (respectively 86.7% and 88.0%) compared to CA2445 (71.3%) and a comparable efficacy with PRIAXOR (83.3%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically superior to the reference products CA2445 and PRIAXOR in this trial.
In 1 trial, the performance of CA3642 applied at both dose was compared to the reference product AVIATOR XPRO 225EC. CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (40.4%) compared to AVIATOR XPRO 225EC (40.8%). CA3642 at 1.2 L/ha and 1.4L/ha was statistically equivalent to the reference product AVIATOR XPRO 225EC in this trial.

At the early assessment timing CA3642 applied at both dose rates significantly reduced disease severity compared to the untreated at all leaf levels.

At leaf level 1, **assessment date "late"** (31-33 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 5.7-11.8% severity. In 2 trials, the

reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference products CA2702 and AVIATOR XPRO 225EC.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 73.7% and 76.2%) compared to CA2702 (71.5%) and AVIATOR XPRO 225EC (75.5%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and AVIATOR XPRO 225EC.

At leaf level 2, assessment date "late" (31-33 DA-B), the performance of CA3642 was assessed in a total of 2 trials. Infestation levels (UTC) in the trials ranged from 7.7-20.0% severity. In 2 trials, the reduction of infestation from applications of CA3642 was statistically significant compared to the untreated control for all assessments.
In 2 trials, the performance of CA3642 applied at both dose was compared to the reference products CA2702 and AVIATOR XPRO 225EC.
On average of 2 trials, CA3642 applied at 1.4L/ha showed higher efficacy (65.7%) compared to CA2702 (55.5%). CA3642 at the rate of 1.2 L/ha delivered a level of control numerically equivalent (53.5%) than CA2702 (55.5%). CA3642 applied at both dose was statistically equivalent to the reference product in these trials.
On average of 2 trials, CA3642 applied at 1.2 L/ha and 1.4L/ha showed equivalent efficacy (respectively 53.5% and 65.7%) compared to AVIATOR XPRO 225EC (59.9%). No statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference product AVIATOR XPRO 225EC.

At assessment date "very late" (36 DA-B), when considering **leaf 1**, in 1 assessment, statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702, CA2445 and PRIAXOR. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically superior (respectively 80.0% and 82.8%) than CA2702 (65.6%), CA2445 (73.2%) and PRIAXOR (70.8%). The level of infection observed in the untreated check was 25.0% severity.

At assessment date "very late" (36 DA-B), when considering **leaf 2**, in 1 assessment, statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702, CA2445 and PRIAXOR. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically superior (respectively 77.8% and 82.7%) than CA2702 (60.5%). CA3642 at the rate of 1.4 L/ha delivered a level of control numerically superior (82.7%) than CA2445 (69.3%) and PRIAXOR (69.8%). At 1.2L/ha, CA3642 showed a comparable efficacy (77.8%) than CA2445 (69.3%) and PRIAXOR (69.8%) but statistical difference was detected between test product CA3642 applied at 1.2 L/ha and reference products CA2445 and PRIAXOR. The level of infection observed in the untreated check was 46.3% severity.

In both trials CA3642 significantly reduced disease severity compared to the untreated.

<u>After 1 application of CA3642 applied at 1.2 – 1.4 L/ha</u>
At assessment date "early" (22 DA-A), when considering **leaf 2**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and AVIATOR XPRO 225EC. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (respectively 92.8% and 91.6%) than CA2702 (96.4%) and AVIATOR XPRO 225EC (86.7%). The level of infection observed in the untreated check was 8.3% severity.
At assessment date "early" (22 DA-A), when considering **leaf 3**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and AVIATOR XPRO 225EC. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (respectively 84.0% and 80.2%) than CA2702 (83.2%) and AVIA-

TOR XPRO 225EC (78.6%). The level of infection observed in the untreated check was 13.1% severity.
At assessment date “early” (22 DA-A), when considering **leaf 4**, in 1 assessment, no statistical difference was detected between test product CA3642 applied at 1.2 L/ha or 1.4 L/ha and reference products CA2702 and AVIATOR XPRO 225EC. CA3642 at the rate of 1.2 L/ha and 1.4 L/ha delivered a level of control numerically equivalent (respectively 73.0% and 68.4%) than CA2702 (64.3%) and AVIATOR XPRO 225EC (63.3%). The level of infection observed in the untreated check was 19.6% severity.
At all leaf levels CA3642 significantly reduced disease severity compared to the untreated.

Comments of zRMS:

3 efficacy trials were carried out to control of *Pyrenophora tritici-repentis* in winter wheat in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications, either in the early and late assessments. The mean efficacy was 80,5-83,7% on L1, 71,7-75,5% on L2 and 64,4-64,5% on L3 in the early assessment. The test product at claimed doses presented results of 73,7-76,2% on L1 and 53,5-65,7% on L2 in the late observations. Acceptable control was observed in the very late assessment (>80% on L1 and 77,8-82,7% on L2). Significant inferior results have been noted in case of CA2702. No differences between CA3642 and other reference products were detected. Also good effectiveness was visible after 1 application in the early assessment. CA3642 achieved results of >92% on L2 and 80,2-84% on L3. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Summary of data on PYRNTR in wheat

Data is presented from a total of 14 trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control *Pyrenophora tritici-repentis* (PYRNTR) in winter wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

The data presented supports the claim for registration of CA3642 applied at 1.2 L/ha-1.4 L/ha for control of *Pyrenophora tritici-repentis* (PYRNTR) in wheat.

Winter Wheat (TRZAW) – Head blight of cereals (FUSASP – *Fusarium* spp.)

A total of 6 trials were carried out in 2019 to evaluate the efficacy of CA3642 for the control of *Fusarium* spp. (FUSASP / FUSACU) (2 trials) and *Fusarium graminearum* (GIBBZE) (4 trials) in winter wheat in the Maritime (3 trials) and North-East (3 trials) EPPO zones.

The trials from the Maritime EPPO zone were carried out in the United Kingdom (1) and Germany (2).
The trials from the North-East EPPO zone were carried out in Poland (3).

In all trials the test product CA3642 was applied 2 times at dose rate of 1.2 and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZAW – FUSASP – Maritime EPPO zone

3 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rate of 1.2 L/ha against FUSASP in the Maritime EPPO zone. The trials were carried out in Germany (2) and

Great Britain (1) in 2019. The first application took place at crop stage BBCH 37 - 41 and the second application was done 19 - 29 days later, at BBCH 61 - 69.

Table 3.2-322: Summary - Efficacy of CA3642 (1.2 L/ha) in TRZAW against FUSACU – 2 applications - Early assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.2 L/ha compared to
				Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 'L/ha 200 g PTZ/ha	CA2445 0.8 L/ha
Efficacy after 2 applications								
EAR early	*44*	*15*	*1*		*~~8~~ 62.7*	*~~73.8~~ **71.3***	*~~81.3~~ 73.7*	1=

Table 3.2-323: Summary - Efficacy of CA3642 (1.2 L/ha) in TRZAW against GIBBZE – 2 applications - Late assessment timing – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials & ARM	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.2 L/ha compared to
				Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	CA2445 0.8 L/ha
Efficacy after 2 applications								
EAR late	52-53	33	*2*	*Mean*	*13.8*	*~~77.1~~ **71.8***	*~~76.8~~ 75.3*	2=
				Min	4.2	~~61.9~~ **51.4**	~~59.5~~ 56.4	
				Max	23.3	~~92.3~~ **92.1**	94.1	

After two applications of CA3642 applied at 1.2 L/ha
At assessment date ‘’early’’ (15 DA-B), in 1 trial, the test product CA3642 applied at 1.2 L/ha achieved 73.8% efficacy. The level of infection observed in the untreated check was 8% severity.
Performance of CA3642 was equivalent to CA2445 with no statistical difference.

After two applications of CA3642 applied at 1.2 L/ha
At assessment date ‘’late’’ (33 DA-B), the test product CA3642 applied at 1.2 L/ha achieved 77.1% mean efficacy across 2 trials. The level of infection observed in the untreated check was 13.8% severity.
Performance of CA3642 was equivalent to CA2445 with no statistical difference.

Comments of zRMS:

3 efficacy trials were carried out to control of *Fusarium* sp. in winter wheat in the Maritime EPPO climatic zone. CA3642 at 1,2 l/ha presented moderate effectiveness after 2 applications, either in the early and late assessments. No significant differences between test and reference products were observed. No results after 1 application were available. Also no higher doses have been tested in the submitted trials. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

TRZAW – FUSASP – North-East EPPO zone

3 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 L/ha against FUSASP and GIBBZE in the North-East EPPO zone. The trials were carried out in Poland (3) in 2019. The first application took place at crop stage BBCH 39 and the second application was done 14 - 17 days later, at BBCH 65.

Table 3.2-324: Summary - Efficacy of CA3642 (1.2 L/ha) in TRZAW against FUSASP – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.2 L/ha compared to
				Rate		1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	CA2445 0.8 L/ha
Efficacy after 2 applications								
EAR early	29-30	15	3	*Mean* Min Max	*19.0* 5.7 34.3	~~78.4~~ ***78.7*** ~~75.4~~ **76.0** ~~80.1~~ **80.4**	~~76.3~~ *76.1* ~~70.2~~ 69.5 ~~80.7~~ 80.5	3=

<u>After two applications of CA3642 applied at 1.2 L/ha</u>

At assessment date "early" (15 DA-B), when considering ear, on average of 3 assessments, test product CA3642 applied at 1.2 L/ha showed an efficacy equivalent to CA2445 (78.4% vs 76.3%). The level of infection observed in the untreated check was 19.0% severity.
When considering the individual assessments, no statistical difference was detected.

Comments of zRMS:

3 efficacy trials were carried out to control of *Fusarium* sp. in winter wheat in the North-East EPPO climatic zone. Also 2 trials conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1,2 l/ha achieved moderate effectiveness after 2 applications, in the early and late assessments. No significant differences between test and reference products were observed. No results after 1 application were available. Also no higher doses have been tested in the submitted trials. Due to limited number of trials, this use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

Summary of data on FUSASP in wheat

Data is presented from a total of 6 trials to evaluate the efficacy of CA3642 applied at 1.2 L/ha to control *Fusarium* spp. in winter wheat. In all trial assessments across all EPPO zones, two applications of CA3642 significantly reduced disease severity compared to the untreated control.
The efficacy obtained from applications of CA3642 comparable to that observed from applications of the reference products across the EPPO zones.

The data presented supports the claim for registration of CA3642 applied at 1.2 L/ha-1.4 L/ha for control of *Fusarium* spp. in wheat.

Comments of zRMS:

No efficacy trials were carried out to control of *Fusarium* sp. in winter wheat in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level. Furthermore, dose rate of 1,4 l/ha has not been tested in the submitted trials in any EPPO zones. Because the dose rate of 1,2 l/ha achieved moderate level of control, it is expected that the higher dose (1,4 l/ha) would be more effective.

Winter Wheat (TRZAW) – Green leaf area

A total of 95 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 in terms of green leaf area in winter wheat in the Maritime (38 trials), North-East (32 trials) and South-East (25 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in the Czech Republic (1), Germany (10), Southern France (7) and the United Kingdom (20).
Trials from the North-East EPPO zone were carried out in Poland (23), Latvia (7) and Lithuania (2).
Trials from the South-East EPPO zone were carried out in Bulgaria (3), Hungary (10), Romania (10) and Slovakia (2).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better retention of green leaf area compared to the used reference standard on all presented leaf levels.

TRZAW – Green leaf area – Maritime EPPO zone

In 38 trials from the Maritime EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in the Czech Republic (1), Germany (10), Southern France (7) and the United Kingdom (20) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 37 and the second application was done 15 - 37 days later, at BBCH 39 - 69.

Table 3.2-325: Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW assessed as green leaf area – valid assessments – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 AZX/L SC**	**CA2445 PTZ 250 g/L EC**	**Proline 275 PTZ 275 g/L EC**	**Joao PTZ 250 g/L EC**	**Summarized PTZ Products EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g PTZ /ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	
PLOT													
PLOT	DEU	57	29			82.5 f 100	**96.0 ab 116.4**	**91.0 cde 110.3**	90.0 de 109.1	95.0 abc 115.2			95.0 abc 115.2
	DEU	45	30			82.5 a 100	**82.5 a 100.0**	**82.5 a 100.0**	80.0 a 97.0	81.3 a 98.5			81.3 a 98.5
	FRA	63	45			32.5 b 100	**63.8 a 196.3**	**65.0 a 200.0**	57.5 a 176.9			65.0 a 200.0	65.0 a 200.0
Mean % Relative UTC				3	Mean Min Max	65.8 32.5 82.5	***137.6*** 100.0 196.3	***136.8*** 100.0 200.0	*127.7* 97.0 176.9				*137.9* 98.5 200.0
Mean % Relative UTC				2	Mean Min Max	82.5 82.5 82.5	***108.2*** 100.0 116.4	***105.2*** 100.0 110.3	*103.0* 97.0 109.1	*106.8* 98.5 115.2			*134.3* 65.0 200.0
Mean % Relative UTC				1		32.5	**196.3**	**200.0**	176.9			200.0	200.0
PLANT													
PLANT	DEU	46	27			81.3 c 100		**87.5 b 107.6**		93.8 a 115.4			93.8 a 115.4
	GBR	54	36			22.5 c 100	**99.0 a 440.0**	**98.3 a 436.9**	75.0 b 333.3	96.3 a 428.0			96.3 a 428.0
	GBR	55	30			47.5 f 100	**75.0 a 157.9**	**73.8 ab 155.4**	63.8 de 134.3		70.0 a-d 147.4		70.0 a-d 147.4
	DEU	56	38			93.0 ab 100	**90.8 bc 97.6**	**92.8 ab 99.8**	90.0 c 96.8	93.0 ab 100.0			93.0 ab 100.0
	FRA	56	41			70.0 c 100	**91.0 a 130.0**	**88.8 ab 126.9**	82.5 b 117.9	87.5 ab 125.0			87.5 ab 125.0
	GBR	56	41			75.0 c 100	**85.0 a 113.3**	**83.0 ab 110.7**	85.0 a 113.3	80.0 b 106.7			80.0 b 106.7
	DEU	57	28			17.5 b 100		**50.0 a 285.7**		40.0 a 228.6			40.0 a 228.6
	DEU	57	29			60.0 b 100	**70.0 a 116.7**	**70.0 a 116.7**	65.0 a 108.3	70.0 a 116.7			70.0 a 116.7
	CZE	59	35			7.5 e 100	**42.5 a 566.7**	**37.5 b 500.0**	32.5 bc 433.3	30.0 c 400.0			30.0 c 400.0

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 AZX/L SC**	**CA2445 PTZ 250 g/L EC**	**Proline 275 PTZ 275 g/L EC**	**Joao PTZ 250 g/L EC**	**Summarized PTZ Products EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g PTZ /ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	
	GBR	59	41			42.5 e 100	**75.0 a 176.5**	**60.0 cd 141.2**	55.0 d 129.4		68.8 abc 161.9		68.8 abc 161.9
	GBR	59	42			66.3 c 100	**81.3 a 122.6**	**77.5 ab 116.9**	73.8 b 111.3		73.8 b 111.3		73.8 b 111.3
	DEU	60	25			100.0 a 100.0	**100.0 a 100.0**	**100.0 a 100.0**	100.0 a 100.0	100.0 a 100.0			100.0 a 100.0
	GBR	61	27			35.0 c 100	**61.3 a 175.1**	**52.5 a 150.0**	38.8 bc 110.9		52.5 a 150.0		52.5 a 150.0
	FRA	61	34			75.5 a 100	**91.8 a 121.6**	**86.8 a 115.0**	87.5 a 115.9	93.5 a 123.8			93.5 a 123.8
	FRA	62	39			15.0 d 100	**55.0 ab 366.7**	**52.5 bc 350.0**	22.5 d 150.0			65.0 a 433.3	65.0 a 433.3
	DEU	62	42			88.8 c 100	**100.0 a 112.6**	**100.0 a 112.6**	100.0 a 112.6	97.8 a 110.1			97.8 a 110.1
	GBR	64	41			11.3 d 100	**90.0 a 796.5**	**90.0 a 796.5**	47.5 c 420.4	45.0 c 398.2			45.0 c 398.2
	GBR	65	43			23.8 c 100	**68.8 a 289.1**	**66.3 a 278.6**	56.3 ab 236.6		56.3 ab 236.6		56.3 ab 236.6
	DEU	66	49			46.3 i 100	**76.3 cd 164.8**	**72.5 def 156.6**	62.5 h 135.0	70.0 d-g 151.2			70.0 d-g 151.2
	FRA	70	43			5.0 f 100	**79.3 a 1586.0**	**65.0 ab 1300.0**	38.8 cd 776.0			50.0 bc 1000.0	50.0 bc 1000.0
	GBR	71	41			31.3 c 100	**69.0 a 220.4**	**66.3 a 211.8**	47.8 b 152.7		62.3 a 199.0		62.3 a 199.0
	GBR	74	40			63.8 c 100	**88.8 a 139.2**	**90.0 a 141.1**	71.3 bc 111.8		86.3 a 135.3		86.3 a 135.3
	GBR	74	47			12.5 d 100	**95.0 a 760.0**	**95.0 a 760.0**	40.0 c 320.0	47.5 c 380.0			47.5 c 380.0
	GBR	77	42			8.8 d 100	**88.8 a 1009.1**	**85.0 a 965.9**	31.3 c 355.7	55.0 b 625.0			55.0 b 625.0
	DEU	82	45			14.5 d 100	**46.3 a 319.3**	**37.5 abc 258.6**	31.3 c 215.9	46.3 a 319.3			46.3 a 319.3
	GBR	84	52			20.0 a 100	**25.0 a 125.0**	**25.0 a 125.0**	25.0 a 125.0	25.0 a 125.0			25.0 a 125.0
	FRA	89	58			12.5 e	**40.0 a**	**33.8 ab**	17.5 de	27.5 bc			27.5 bc

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 AZX/L SC	CA2445 PTZ 250 g/L EC	Proline 275 PTZ 275 g/L EC	Joao PTZ 250 g/L EC	Summarized PTZ Products EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g PTZ /ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	
						100	**320.0**	**270.4**	140.0	220.0			220.0
	FRA	92	62			18.8 f 100	**78.8 a 419.1**	**75.0 ab 398.9**	58.8 de 312.8			70.0 abc 372.3	70.0 abc 372.3
Mean % Relative UTC				28	Mean Min Max	43.0 5.0 100.0		***303.3*** 99.8 1300.0					*249.5* 100.0 1000.0
Mean % Relative UTC				26	Mean Min Max	41.0 5.0 100.0	***344.1*** 97.6 1586.0	***319.0*** 99.8 1300.0	*210.3* 96.8 776.0				*260.6* 100.0 1000.0
Mean % Relative UTC				19	Mean Min Max	47.3 7.5 100.0		***292.2*** 99.8 965.9		*225.7* 100.0 625.0			*225.7* 100.0 625.0
Mean % Relative UTC				*7*	*Mean* Min Max	*44.3* 23.8 66.3	***183.0*** **122.6** **289.1**	***170.7*** **116.9** **278.6**	*141.0* 110.9 236.6		*163.1* 111.3 236.6		*163.1* 111.3 236.6
Mean % Relative UTC				*3*	*Mean* Min Max	*12.9* 5.0 18.8	***790.6*** **366.7** **1586.0**	***683.0*** **350.0** **1300.0**	*412.9* 150.0 776.0			*601.9* 372.3 1000.0	*601.9* 372.3 1000.0
LEAF													
LEAF1	GBR	48	32		 TA	43.8 b 100 b	**94.3 a 215.3 a**	**90.5 a 206.6 a**	85.0 a 194.1 a	90.8 a 207.3			90.8 a 207.3
	GBR	60	41			56.3 b 100	**67.5 a 119.9**	**71.3 a 126.6**	72.5 a 128.8	68.8 a 122.2			68.8 a 122.2
	GBR	63	42			58.8 f 100	**95.5 a 162.4**	**87.5 bc 148.8**	73.8 e 125.5	90.5 b 153.9			90.5 b 153.9
	DEU	67	39		 TA	72.5 f 100 g	**90.0 cd 124.1 de**	**92.8 abc 128.0 bcd**	88.0 de 121.4 cde	95.0 ab 131.0			95.0 ab 131.0
	GBR	67	47			27.5 b 100	**71.3 a 259.3**	**68.8 a 250.2**	58.8 a 213.8	61.3 a 222.9			61.3 a 222.9
	GBR	68	43			66.3 d 100	**94.3 a 142.2**	**95.5 a 144.0**	73.8 c 111.3	90.0 a 135.7			90.0 a 135.7
	GBR	72	46			5.5 d 100	**25.0 bc 454.5**	**30.0 ab 545.5**	27.5 abc 500.0		22.5 bc 409.1		22.5 bc 409.1

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 AZX/L SC**	**CA2445 PTZ 250 g/L EC**	**Proline 275 PTZ 275 g/L EC**	**Joao PTZ 250 g/L EC**	**Summarized PTZ Products EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g PTZ /ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	
	GBR	95	72			25.0 a 100	**25.0 a 100.0**	**25.0 a 100.0**	25.0 a 100.0		25.0 a 100.0		25.0 a 100.0
Mean % Relative UTC				*8*	*Mean* Min Max	*44.5* 5.5 72.5	***197.2*** **100.0** **454.5**	***206.2*** **100.0** **545.5**	*186.9* 100.0 500.0				*185.3* 100.0 409.1
Mean % Relative UTC				*6*	*Mean* Min Max	*54.2* 27.5 72.5	***170.5*** **119.9** **259.3**	***167.4*** **126.6** **250.2**	*149.1* 111.3 213.8	*162.2* 122.2 222.9			*162.2* 122.2 222.9
Mean % Relative UTC				*2*	*Mean* Min Max	*15.3* 5.5 25.0	***277.3*** **100.0** **454.5**	***322.7*** **100.0** **545.5**	*300.0* 100.0 500.0		*254.5* 100.0 409.1		*254.5* 100.0 409.1
LEAF2	GBR	48	32			19.0 d 100	**66.3 abc 348.9**	**62.5 abc 328.9**	56.3 abc 296.3	68.8 ab 362.1			68.8 ab 362.1
	GBR	60	41			42.5 b 100	**61.3 a 144.2**	**62.5 a 147.1**	62.5 a 147.1	65.0 a 152.9			65.0 a 152.9
	GBR	63	42			20.0 f 100	**89.3 a 446.5**	**85.0 a 425.0**	38.8 d 194.0	85.0 a 425.0			85.0 a 425.0
	DEU	67	39			7.5 e 100	**20.0 cd 266.7**	**25.0 bc 333.3**	11.3 de 150.7	27.5 bc 366.7			27.5 bc 366.7
	GBR	67	47			16.3 b 100	**65.0 a 398.8**	**62.5 a 383.4**	51.3 a 314.7	53.8 a 330.1			53.8 a 330.1
	GBR	68	43			33.8 e 100	**92.5 a 273.7**	**92.5 a 273.7**	70.0 d 207.1	83.8 b 247.9			83.8 b 247.9
Mean % Relative UTC				*6*	*Mean* Min Max	*23.2* 7.5 42.5	***313.1*** **144.2** **446.5**	***315.2*** **147.1** **425.0**	*218.3* 147.1 314.7	*314.1* 152.9 425.0			*314.1* 152.9 425.0
LEAF3	GBR	60	41			17.5 b 100	**42.5 a 242.9**	**46.3 a 264.6**	46.3 a 264.6	45.0 a 257.1			45.0 a 257.1
	GBR	67	47			7.5 b 100	**36.3 a 484.0**	**33.8 a 450.7**	25.0 a 333.3	27.5 a 366.7			27.5 a 366.7
	GBR	68	43			18.8 f 100	**91.3 a 485.6**	**83.8 b 445.7**	43.8 e 233.0	68.8 d 366.0			68.8 d 366.0
Mean % Relative UTC				*3*	*Mean* Min	*14.6* 7.5	***404.2*** **242.9**	***387.0*** **264.6**	*277.0* 233.0	*329.9* 257.1			*329.9* 257.1

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 AZX/L SC	CA2445 PTZ 250 g/L EC	Proline 275 PTZ 275 g/L EC	Joao PTZ 250 g/L EC	Summarized PTZ Products EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g PTZ /ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	
					Max	18.8	**485.6**	**450.7**	333.3	366.7			366.7

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Plot level

Efficacy in terms of green leaf area was assessed on three trials at the plot level at 29- 45 DA-B. There was one trial that included several pathogens and the other two only one. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 37-38 % compared to the untreated control. The increase in GLA compared to the untreated was statistically significant in 2 of the 3 trials. There was a significantly higher green leaf area in one trial for 1.4 L/ha compared to CA2702 and a numerically higher green leaf area in another for 1.2 and 1.4 L/ha compared to CA2702.

Plant level

Efficacy in terms of green leaf area was assessed on 26 trials for 1.4 L/ha CA3642 and an extra two trials for 1.2 L/ha CA3642 at the plant level at 25- 62 DA-B. Of the 28 trials (26 +2 trials for 1.2 L/ha), 14 had more than one pathogen present and 13 for 1.4 L/ha. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 244% for 1.4 L/ha and 203 % for 1.2 L/ha compared to the untreated control. The increase in GLA compared to the untreated was statistically significant in 24 of the 28 trials which included the 1.2 L/ha rate, and in 22 of the 26 trials that included the 1.4 L/ha rate. A significantly higher green leaf area was found 18 out of 26 assessment and 14 out of 28 assessments for 1.4 and 1.2 L/ha CA3642 respectively when compared to CA2702. A significantly higher green leaf area was found 8 out of 26 assessment and 4 out of 28 assessments for 1.4 and 1.2 L/ha CA3642 respectively when compared to one of the three PTZ reference products. In one assessment for 1.2 L/ha there was a significantly higher green leaf area for the PTZ reference products.

Leaf level

Efficacy in terms of green leaf area was assessed on eight trials for leaf level 1, six for leaf level 2 and three for leaf level 3 at 32- 72 DA-B, 32- 47 DA-B and 41- 47 DA-B respectively. There were two trials at each leaf level with more than one pathogen included. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 97-106 % for leaf level 1, 213-215 % for leaf level 2 and 287-304 % for leaf level 3 compared to the untreated control. At leaf level 1 there was a significantly higher green leaf area in three and two trials for CA3642 at 1.2 and 1.4 L/ha respectively when compared to CA2702 and a significantly higher green leaf area in two trials for 1.4 L/ha CA3642 compared to CA2445. The increase in GLA for CA3642 compared to the untreated were statistically significant in 7 of the 8 trials. At leaf level 2 there was a significantly higher green leaf area in three and two trials for CA3642 at 1.2 and 1.4L/ha respectively when compared to CA2702 and a significantly higher green leaf area in one trial for 1.2 and 1.4 L/ha CA3642 compared to CA2445. The increase in GLA for CA3642 compared to the untreated were statistically significant in all 6 trials. At leaf level 3 there was a significantly higher green leaf area for 1.2 and 1.4 L/ha CA3642 compared to both CA2702 and CA2445. The increase in GLA for CA3642 compared to the untreated were statistically significant in all 3 trials.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in winter wheat affected by a range of pathogens in the Maritime EPPO zone.

Comments of zRMS:

The mean green leaf area of plot increased by 37,6% at 1,4 l/ha and 36,8% at 1,2 l/ha after 2 applications of CA3642. In case of whole plant, the increase was 244,1% at 1,4 l/ha and 219% at 1,2 l/ha. In case of leaves, the mean increase was 97,2% and 106,2% on L1, 213,1% and 215,2% on L2 and 304,2% and 287% on L3. No differences between test and reference products (excluding CA2702) were observed in most trials in the Maritime EPPO climatic zone. CA2702 presented inferior results. Significant positive impact on green leaf area has been noted for CA3642.

TRZAW – Green leaf area – North-East EPPO zone

In 32 trials from the North-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Poland (23), Latvia (7) and Lithuania (2) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 39 and the second application was done 14 - 53 days later, at BBCH 39 - 65.

Table 3.2-326: Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW assessed as green leaf area – valid assessments – North-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**DELARO 325 SC 325 g/L SC**	**OSIRIS 65 EC 65 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1 l/ha 175 g/L PTC + 150 g/L TFS**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
PLOT	LVA	60	35			35.0 a 35.0	**60.0 a 171.4**	**60.0 a 171.4**	55.0 a 157.1	45.0 a 128.6		
Mean % Relative UTC				*1*		*35.0*	***171.4***	***171.4***	*157.1*	*128.6*		
PLANT	POL	29	15			30.0 c 100		**60.0 a 200.0**		60.0 a 200.0		
	POL	30	15			11.3 b 100		**32.5 a 287.6**		32.5 a 287.6		
	POL	32	15			35.0 b 100		**75.0 a 214.3**		75.0 a 214.3		
	LVA	49	21			25.0 b 100	**40.0 a 160.0**	**37.5 a 150.0**	35.0 a 140.0	38.8 a 155.2		
	LVA	49	21			31.3 a 100	**37.5 a 119.8**	**42.5 a 135.8**	36.3 a 116.0	37.5 a 119.8		
	LVA	51	21			28.8 c 100	**42.5 ab 147.6**	**50.0 ab 173.6**	35.0 bc 121.5	51.3 a 178.1		
	POL	51	36			26.3 a 100	**26.3 a 100.0**	**30.0 a 114.1**	27.5 a 104.6			26.3 a 100.0
	POL	53	23			10.0 d 100	**43.8 ab 438.0**	**33.8 bc 338.0**	32.5 bc 325.0			48.8 a 488.0
	LTU	56	31			15.3 e 100	**37.2 ab 242.7**	**39.7 a 259.0**	27.5 cd 179.4	31.9 abc 208.0		
	POL	56	35			53.8 a 100	**46.3 a 86.1**	**68.8 a 127.9**	56.3 a 104.6		30.0 a 55.8	
	POL	57	35			35.0 a 100	**35.0 a 100.0**	**41.3 a 118.0**	32.5 a 92.9			33.8 a 96.6
	POL	59	45			31.3 b 100	**42.5 a 136.0**	**35.0 b 112.0**	32.5 b 104.0		35.0 b 112.0	
	POL	61	34			23.8 b 100	**71.3 a 299.6**	**75.0 a 315.1**	70.0 a 294.1	65.0 a 273.1		75.0 a 315.1
					TA	b	**a**	**a**	a	a		a
	LVA	62	37			13.8 a 100	**15.0 a 108.7**	**16.3 a 118.1**	16.3 a 118.1	16.3 a 118.1		
	POL	63	37			25.0 a 100	**28.8 a 115.2**	**23.8 a 95.2**	30.0 a 120.0		27.5 a 110.0	
	POL	64	36			37.5 b 100	**42.5 ab 113.3**	**45.0 a 120.0**	38.8 ab 103.5		43.8 ab 116.8	
	LVA	69	42			42.3 a 100	**44.5 a 105.2**	**48.5 a 114.7**	41.0 a 96.9	45.5 a 107.6		
	LVA	69	44			11.3 a 100	**13.8 a 122.1**	**16.3 a 144.2**	16.3 a 144.2	16.3 a 144.2		
	LVA	70	37			40.0 c 100	**51.3 a 128.3**	**51.3 a 128.3**	42.5 bc 106.3	50.0 ab 125.0		
	POL	70	39			20.0 d 100	**32.5 abc 162.5**	**32.5 abc 162.5**	35.0 ab 175.0		37.5 ab 187.5	
	POL	70	42			81.3 c 100	**95.0 a 116.9**	**93.8 ab 115.4**	90.0 b 110.7	91.3 ab 112.3		95.0 a 116.9
	LTU	72	45			23.8 d 100	**41.3 a 173.7**	**38.8 ab 163.2**	33.1 c 139.5	36.9 abc 155.3		

	POL	72	38			50.0 a 100	**42.5 a** **85.0**	**43.8 a** **87.6**	32.5 a 65.0	42.5 a 85.0		35.0 a 70.0
	POL	74	40			66.3 c 100	**78.8 ab** **118.9**	**75.0 ab** **113.1**	72.5 b 109.4	78.8 ab 118.9		80.0 a 120.7
	POL	75	40			77.5 d 100	**93.8 a** **121.0**	**90.0 b** **116.1**	86.3 bc 111.4	88.8 bc 114.6		90.0 b 116.1
	POL	82	31			32.5 a 100	**50.0 a** **153.8**	**42.5 a** **130.8**	45.0 a 138.5	40.0 a 123.1		47.5 a 146.2
	POL	83	32			50.0 b 100	**70.0 a** **140.0**	**62.5 ab** **125.0**	60.0 ab 120.0	50.0 b 100.0		67.5 a 135.0
	POL	84	32			25.0 a 100	**32.5 a** **130.0**	**52.5 a** **210.0**	42.5 a 170.0			37.5 a 150.0
	POL	84	32			62.5 b 100	**70.0 ab** **112.0**	**70.0 ab** **112.0**	70.0 ab 112.0	72.5 ab 116.0		77.5 a 124.0
	POL	84	35			20.0 c 100	**42.5 a** **212.5**	**38.8 ab** **194.0**	35.0 b 175.0	37.5 ab 187.5		40.0 ab 200.0
	POL	85	32			12.5 b 100	**55.0 a** **440.0**	**50.0 a** **400.0**	43.0 a 344.0			35.0 ab 280.0
	POL	87	34			10.0 c 100	**40.0 ab** **400.0**	**30.0 abc** **300.0**	32.5 abc 325.0			27.5 abc 275.0
Mean % Relative UTC				*30*	*Mean* Min Max	*33.5* 10.0 81.3	***173.2*** **85.0** **440.0**	***170.6*** **87.6** **400.0**	*155.7* 65.0 344.0			
Mean % Relative UTC				*22*	*Mean* Min Max	*36.1* 11.3 81.3		***169.2*** **87.6** **324.2**		*160.2* 85.0 287.6		
Mean % Relative UTC				*16*	*Mean* Min Max	*37.9* 10.0 81.3	***204.7*** **85.0** **440.0**	***194.6*** **87.6** **400.0**	*181.4* 65.0 344.0			*191.1* 70.0 488.0
Mean % Relative UTC				*5*	*Mean* Min Max	*33.5* 20.0 53.8	***122.6*** **86.1** **162.5**	***123.5*** **95.2** **162.5**	*121.4* 103.5 175.0		*116.4* 55.8 187.5	

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Plot level
Efficacy in terms of green leaf area was assessed on one trial at the plot level at 35 DA-B. Only a single pathogen is included in the trial. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 71 % compared to the untreated control.
No significant difference was observed at this level between dose rates 1.4 or 1.2 L/ha, or the untreated and the comparative reference products.

Plant level
Efficacy in terms of green leaf area was assessed at the plant level on 30 trials at 21-45 DA-B for 1.4 L/ha and 33 trials at 15-45 DA-B for 1.2 L/ha. Of the 30 trials for 1.4 L/ha CA3642, eleven had more than one pathogen present while the 33 trials for 1.2 L/ha CA3642 had 12 trials with more than one pathogen. After two applications of CA3642 at 1.2-1.4 L/ha for the 30 trials they (1.2 and 1.4 L/ha) are both included in, the mean green leaf area increased by 71-73 % compared to the untreated control. The increase in GLA for CA3642 compared to the untreated were statistically significant in 17 of 33 trials including the 1.2 L/ha rate and in 16 of the 30 trials including 1.4 L/ha. In three and seven trials 1.2 and 1.4 L/ha CA3642 respectively had a significantly higher green leaf area compared to CA2702. For 1.4 L/ha CA3642 there was a significantly higher green leaf area in two trials compared to CA2445, one trial compared to DELARO and one compared to OSIRIS 65. There was a significantly higher green leaf area for 1.2 L/ha CA3642 for one trial compared to OSIRIS 65.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in winter wheat affected by a range of pathogens in the North-east EPPO zone

Comments of zRMS:

The mean green leaf area of plot increased by 71,4% at 1,2-1,4 l/ha after 2 applications of CA3642. In case of whole plant, the increase was 73,2% at 1,4 l/ha and 70,6% at 1,2 l/ha. No differences between test and reference products (excluding CA2702) were observed in most trials in the North-East EPPO climatic zone. CA2702 presented slight inferior results. Positive impact on green leaf area has been noted for CA3642.

TRZAW – Green leaf area – South-East EPPO zone

In 25 trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Bulgaria (3), Hungary (10), Romania (10) and Slovakia (2) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 35 and the second application was done 15 - 41 days later, at BBCH 39 - 61.

Table 3.2-327: Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZAW assessed as green leaf area – valid assessments – South-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Priaxor summary 225 g/L EC**	**Riza 20 EC TBZ 200 g/L EC**	**Nativo Pro 325 EC PTZ + TFS 325 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.5 l/ha 337 g ai/ha 224.7 PCS/ha + 112.3 FLX/ha**	**1.5 l/ha 338 g ai/ha 225.3 PCS/ha + 112.7 FLX/ha**		**1.25 l/ha 250 g TBZ /ha**	**0.6 l/ha 195 g ai/ha 105 PTZ/ha + 90 TFS/ha**
PLOT	ROU	60	38			7.5 b 100	**15.0 a** **200.0**	**15.0 a** **200.0**	13.8 a 184.0						15.0 a 200.0
Mean % Relative UTC				1		7.5	**200.0**	**200.0**	184.0						200.0
PLANT	BGR	53	31			16.3 c 100	**26.3 abc 161.3**	**21.3 abc 130.7**	31.3 ab 192.0						
	BGR	54	37			6.3 c 100	**20.0 a** **317.5**	**20.0 a** **317.5**	20.0 a 317.5					15.0 ab 238.1	
	ROU	55	27			8.8 e 100	**75.0 abc 852.3**	**73.8 bc** **838.6**	81.3 ab 923.9	83.8 a 952.3					
	BGR	55	33			21.3 b 100	**31.3 a** **146.9**	**33.8 a** **158.7**	31.3 a 146.9						
	ROU	57	36			6.3 e 100	**76.3 ab** **1211.1**	**72.5 bc** **1150.8**	73.8 bc 1171.4	73.8 bc 1171.4					
	SVK	57	36			56.0 f 10	**90.0 a** **160.7**	**88.5 b** **158.0**	82.3 d 147.0	84.0 c 150.0	85.0 c 151.8		85.0 c 151.8		

Part Rated	**Country**	**DAA**	**DAB**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Priaxor summary 225 g/L EC**	**Riza 20 EC TBZ 200 g/L EC**	**Nativo Pro 325 EC PTZ + TFS 325 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.5 l/ha 337 g ai/ha 224.7 PCS/ha + 112.3 FLX/ha**	**1.5 l/ha 338 g ai/ha 225.3 PCS/ha + 112.7 FLX/ha**		**1.25 l/ha 250 g TBZ /ha**	**0.6 l/ha 195 g ai/ha 105 PTZ/ha + 90 TFS/ha**
						0									
	SVK	57	36			46.0 g 100	**92.3 a** **200.7**	**91.5 a** **198.9**	88.0 c 191.3	85.0 d 184.8	92.0 a 200.0		92.0 a 200.0		
	ROU	58	43			35.0 c 100	**67.5 ab** **192.9**	**66.3 ab** **189.4**	61.3 b 175.1	70.0 a 200.0					
	ROU	58	43			43.8 d 100	**67.5 abc** **154.1**	**62.5 bc** **142.7**	60.0 c 137.0	71.3 a 162.8					
	ROU	58	43			46.3 d 100	**72.5 abc** **156.6**	**70.0 bc** **151.2**	68.8 c 148.6	73.8 ab 159.4					
	ROU	60	32			8.8 d 100	**71.3 a** **810.2**	**72.5 a** **823.9**	75.0 a 852.3	70.0 a 795.5					
	HUN	60	40			20.0 a 100	**30.0 a** **150.0**	**30.0 a** **150.0**	30.0 a 150.0	30.0 a 150.0		35.0 a 175.0	35.0 a 175.0		
	HUN	60	43			27.5 c 100	**80.0 a** **290.9**	**80.0 a** **290.9**	80.0 a 290.9			78.8 a 286.5	78.8 a 286.5		
	HUN	62	42			10.0 d 100	**30.0 a** **300.0**	**30.0 a** **300.0**	30.0 a 300.0	25.0 b 250.0		30.0 a 300.0	30.0 a 300.0		
	HUN	62	45			32.5 b 100	**45.0 a** **138.5**	**47.5 a** **146.2**	47.5 a 146.2			50.0 a 153.8	50.0 a 153.8		
	HUN	64	47			81.3 a 100	**92.0 a** **113.2**	**86.3 a** **106.2**	76.3 a 93.8			87.0 a 107.0	87.0 a 107.0		
	HUN	65	45			10.0 a 100	**30.0 a** **300.0**	**30.0 a** **300.0**	20.0 a 200.0	30.0 a 300.0		40.0 a 400.0	40.0 a 400.0		
	HUN	66	48			37.5 b 100	**57.5 a** **153.3**	**62.5 a** **166.7**	50.0 a 133.3			62.5 a 166.7	62.5 a 166.7		
	HU	67	40			92.	**98.5 a**	**98.0 a**	96.3 a	97.3 a		98.5 a	98.5 a		

Part Rat-ed	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	Priaxor PCS + FLX 225 g/L EC	Priaxor PCS + FLX 225 g/L EC	Priaxor sum-mary 225 g/L EC	Riza 20 EC TBZ 200 g/L EC	Nativo Pro 325 EC PTZ + TFS 325 g/L EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.5 l/ha 337 g ai/ha 224.7 PCS/ha + 112.3 FLX/ha**	**1.5 l/ha 338 g ai/ha 225.3 PCS/ha + 112.7 FLX/ha**		**1.25 l/ha 250 g TBZ /ha**	**0.6 l/ha 195 g ai/ha 105 PTZ/ha + 90 TFS/ha**
	N				TA	0 a 100 a	**107.1** **a**	**106.5** **a**	104.7 a	105.8 a		107.1 a	107.1 a		
	ROU	69	28			18.8 a 100	**20.0 a** **106.4**	**20.0 a** **106.4**	20.0 a 106.4						27.5 a 146.3
	HUN	69	47			72.5 b 100	**80.0 ab** **110.3**	**77.5 ab** **106.9**	80.0 ab 110.3			81.3 ab 112.1	81.3 ab 112.1		
	HUN	79	43			100.0 a 100.0	**100.0 a** **100.0**	**100.0 a** **100.0**	100.0 a 100.0	100.0 a 100.0		100.0 a 100.0	100.0 a 100.0		
Mean % Relative UTC				*22*	*Mean* Min Max	*36.2* 6.3 100.0	***283.4*** **100.0** **1211.1**	***279.1*** **100.0** **1150.8**	*279.0* 93.8 1171.4						
Mean % Relative UTC				*13*	*Mean* Min Max	*37.2* 6.3 100.0	***361.2*** **100.0** **1211.1**	***354.6*** **100.0** **1150.8**	*353.9* 100.0 1171.4	*360.1* 100.0 1171.4					
Mean % Relative UTC				*12*	*Mean* Min Max	*48.8* 10.0 100.0	***177.1*** **100.0** **300.0**	***177.5*** **100.0** **300.0**	*164.0* 93.8 300.0				*188.3* 100.0 400.0		
Mean % Relative UTC				*10*	*Mean* Min Max	*48.3* 10.0 100.0	***176.3*** **100.0** **300.0**	***177.3*** **100.0** **300.0**	*162.9* 93.8 300.0			*190.8* 100.0 400.0	*190.8* 100.0 400.0		
Mean % Relative UTC				*2*	*Mean* Mi	*51.0* 46.	***180.7*** **160.7**	***178.5*** **158.0**	*169.1* 147.0	*167.4* 150.0	*175.9* 151.8		*175.9* 151.8		

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Priaxor summary 225 g/L EC**	**Riza 20 EC TBZ 200 g/L EC**	**Nativo Pro 325 EC PTZ + TFS 325 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.5 l/ha 337 g ai/ha 224.7 PCS/ha + 112.3 FLX/ha**	**1.5 l/ha 338 g ai/ha 225.3 PCS/ha + 112.7 FLX/ha**		**1.25 l/ha 250 g TBZ /ha**	**0.6 l/ha 195 g ai/ha 105 PTZ/ha + 90 TFS/ha**
					n Max	0 56.0	**200.7**	**198.9**	191.3	184.8	200.0		200.0		
Mean % Relative UTC				1		6.3	**317.5**	**317.5**	317.5					238.1	
Mean % Relative UTC				1		18.8	**106.4**	**106.4**	106.4						146.3
LEA F1	ROU	55	27			20.5 d 100	**77.8 a** **379.5**	**75.5 ab** **368.3**	68.0 c 331.7	70.5 bc 343.9					
Mean % Relative UTC				1		20.5	**379.5**	**368.3**	331.7	343.9					
LEA F2	ROU	55	27			3.3 e 100	48.8 a 1478.8	47.5ab 1439.4	30.0 d 909.1	36.0 cd 1090.9					
Mean % Relative UTC				1		3.3	~~48.8~~ **1478.8**	~~47.5~~ 1439.4	~~30.0~~ 909.1	~~36.0~~ 1090.9					
LEA F3	ROU	56	28		TA	3.8 e 3.8 e	62.3 a 1639.5 a	58.0 b 1526.3 b	44.0 d 1157.9 d	52.0 c 1368.4 c					
Mean % Relative UTC				1		3.8	**1639.5**	**1526.3**	1157.9	1368.4					

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

<u>Plot level</u>
Efficacy in terms of green leaf area was assessed on one trial at the plot level at 38 DA-B. Only a single pathogen is included in the trial. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 100 % compared to the untreated control. All treatments significantly increased GLA compared to the untreated.
No significant difference was observed at this level between dose rates 1.4 or 1.2 L/ha and the comparative reference products.

<u>Plant level</u>
Efficacy in terms of green leaf area was assessed on 22 trials at the plant level at 27- 48 DA-B. Of the 22 trials, seven had more than one pathogen present while the rest had only one. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 179-183 % compared to the untreated control. The increase in GLA for CA3642 compared to the untreated was statistically significant in 14 of the 22 trials. There was a significantly higher green leaf area in two trials for both doses of CA3642 when compared to CA2702. In four and three trials 1.2 and 1.4 L/ha CA3642 respectively

had a significantly higher green leaf area compared to CA2445. Both doses of CA3642 were found to have a significantly higher green leaf area in one trial compared to Priaxor.

Leaf level

Efficacy in terms of green leaf area was assessed on one trial at 27, 28 and 27 DA-B for leaf level 1, 2 and 3 each respectively. There was one pathogen in each trial at all leaf levels. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 268-280 % for leaf level 1, 1339-1379 % for leaf level 2 and 1426-1540 % for leaf level 3 compared to the untreated control. In each trial the increase in GLA compared to the untreated was statistically significant. At leaf level 1 there was a significantly higher green leaf area for both dose rates of CA3642 compared to CA2702 and only 1.4 L/ha had a significantly higher green leaf area compared to CA2445. At leaf level 2 and 3 there was as significantly higher green leaf area for both dose rates compared to CA2702 and CA2445. This unusually high relative green leaf area is due to a very low green leaf area in the untreated control.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in winter wheat affected by a range of pathogens in the South-east EPPO zone.

Comments of zRMS:

The mean green leaf area of plot increased by 100% at 1,2-1,4 l/ha after 2 applications of CA3642. In case of whole plant, the increase was 183,4% at 1,4 l/ha and 179,1% at 1,2 l/ha. In case of leaves, the mean increase was 279,5% and 268,3% on L1, 1378,8% and 1339,4% on L2 and 1539,5% and 1426,3% on L3. No differences between test and reference products were observed in most trials in the South-East EPPO climatic zone. Significant positive impact on green leaf area has been noted.

Spelt (TRZSP)

Spelt (TRZSP) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

A total of one trial were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Septoria leaf blotch (SEPTTR) in spelt in the North-East (1 trial) EPPO zone.

The trial from the North-East EPPO zone was carried out in Poland (1 trial).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or higher mean efficacy compared to the used reference standard on all three presented leaf levels (L1, L2 and L3).

TRZSP – SEPTTR – Maritime EPPO zone

No data were available to support the efficacy claim of CA3642 against *Zymoseptoria tritici* on spelt in Maritime EPPO zone. However, the species *Zymoseptoria tritici* is also the causal agent of Septoria leaf blotch on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on spelt from the robust dataset presented for the closely related crops wheat as well.

The dataset presented in – **Wheat (TRZAW) /** *Zymoseptoria tritici* **(SEPTTR)** – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved. For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on spelt in the Maritime EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Zymoseptoria tritici* in spelt wheat in the Maritime EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

TRZSP – SEPTTR – North-East EPPO zone

One trial from the North-East EPPO zone is available to justify the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in Spelt against SEPTTR. The trial was carried out in Poland in 2021.
The first application took place at crop stage BBCH 32 and the second application was done 18 days later at BBCH 53.

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
Applications of CA3642 at 1.2-1.4 L/ha significantly reduced SEPTTR compared to the untreated control. A good level of control (86.4 – 92.9 %) was observed on leaf levels 1 and 2.
For leaf level 1, the efficacy of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) ranged between 91 % and 93 %. At this assessment efficacy of CA3642 was higher compared to the straight azoxystrobin (CA2702) reference product, although differences were not statistically significant. Compared to the reference product containing pyraclostrobin & fluxapyroxad, efficacy was lower but not significantly so.

For leaf level 2, the efficacy of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) ranged between 86 % and 89 %. For the performance of the reference standards, no statistically significant difference was assessed.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on spelt in the North-East EPPO zone.

Table 3.2-328: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZSP against SEPTTR – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 150g/L AZX + 150g/L PTZ 300 g/L SC		CA2702 250g/L AZX 250 g/L SC	PRIAXOR PYR + FLU* 225g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	1.5 L/ha 225 g PYR/ha + 112.5 g FLU/ha	CA2702 0.8 L/ha	PRIAXOR 1.5 L/ha	CA2702 0.8 L/ha	PRIAXOR 1.5 L/ha

Efficacy after 2 applications													
LEA F1 late	47	29	1	*Me-an*	*5.6*	~~*92.9*~~ ***92.2***	***91.1***	~~*85.7*~~ *86.6*	~~*98.2*~~ *97.8*	=	=	=	=
LEA F2 late	47	29	1	*Me-an*	*6.6*	~~*89.4*~~ ***88.9***	~~*86.4*~~ ***86.2***	~~*89.4*~~ *89.1*	~~*93.9*~~ *93.4*	=	=	=	=

[b] UTC: % infestation in untreated control at assessment date
* PYR + FLU: 150 g/L Pyraclostrobin +75 g/L Fluxapyroxad

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Zymoseptoria tritici* in spelt wheat in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results with mean efficacy of >86% after 2 applications in the late assessments. No significant differences between test and reference products have been noted. No results after 1 application was available. Limited number of trials was presented in the NE zone and an extrapolation from other cereals is not possible. Spelt wheat is minor crop in Poland and the registration under art. 51 can be used for this species.

TRZSP – SEPTTR – South-East EPPO zone

No data were available to support the efficacy claim of CA3642 against *Zymoseptoria tritici* on spelt in South-East EPPO zone. However, the species *Zymoseptoria tritici* is also the causal agent of Septoria leaf blotch on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on spelt from the robust dataset presented for the closely related crops wheat as well.

The dataset presented in – **Wheat (TRZAW) /** *Zymoseptoria tritici* **(SEPTTR)** – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved. For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on spelt in the South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Zymoseptoria tritici* in spelt wheat in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Spelt (TRZSP) – Yellow rust of wheat (PUCCSI - *Puccinia striiformis f. sp. tritici*)

No data were available to support the efficacy claim of CA3642 against *Puccinia striiformis f. sp. tritici* on spelt in Central Regulatory zone. However, the species *Puccinia striiformis f. sp. tritici* is also the causal agent of yellow rust of wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on spelt from the robust dataset presented for the closely related crops wheat as well.

The dataset presented in – **Wheat (TRZAW) / *Puccinia striiformis f. sp. tritici* (PUCCSI)** – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved. For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease

severity compared to the untreated control. This was observed where either a single application or two applications.
For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control *Puccinia striiformis f. sp. tritici* on spelt in the Maritime, North-East and South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Puccinia striiformis f.sp. tritici* in spelt wheat in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. Spelt wheat is minor crop in Poland and the registration under art. 51 can be used for this species.

Spelt (TRZSP) – Powdery mildew of cereals (ERYSGR - *Blumeria graminis*)

No data were available to support the efficacy claim of CA3642 against *Blumeria graminis* on spelt in Central Regulatory zone. However, the species *Blumeria graminis* is also the causal agent of powdery mildew of cereals on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on spelt from the robust dataset presented for the closely related crops wheat as well.

The dataset presented in – **Wheat (TRZAW) / *Blumeria graminis* (ERYSGR)** – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved. For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control *Blumeria graminis* on spelt in the Maritime, North-East and South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Blumeria graminis* in spelt wheat in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. Spelt wheat is minor crop in Poland and the registration under art. 51 can be used for this species.

Spelt (TRZSP) – Tan spot of cereals (PYRNTR - *Pyrenophora tritici-repentis*)

No data were available to support the efficacy claim of CA3642 against *Pyrenophora tritici-repentis* on ~~winter triticale~~ spelt. However, the species *Pyrenophora tritici-repentis* is also the causal agent of tan spot on wheat, barley and rye. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on ~~winter triticale~~ spelt from the robust dataset presented for the closely related crops wheat, winter and spring barley-as well.

The dataset presented in – **Wheat (TRZSS) / *Pyrenophora tritici-repentis* (PYRNTR)** – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved. For the rates of 1.2 and 1.4 L/ha it was often observed that the performance of the product was statistically equivalent or superior to the tested reference standards and achieved adequate control of *Pyrenophora tritici-repentis* on winter wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Pyrenophora tritici-repentis* on ~~winter triticale~~ spelt in all EPPO zones.

Comments of zRMS:

No efficacy trials were carried out to control of *Pyrenophora tritici-repentis* in spelt wheat in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. Spelt wheat is minor crop in Poland and the registration under art. 51 can be used for this species.

Spelt (TRZSP) – Green leaf area

A total of one trial was carried out in 2021 to evaluate the efficacy of CA3642 in terms of green leaf area in Spelt in the North-East (1 trials) EPPO zone.

The trials from the North-East EPPO zone were carried out in Poland (1 trial).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.
In some trial valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or higher retention of green leaf area compared to the used reference standards on the plant.

TRZSP – Green leaf area – North-East EPPO zone

In one trial from the North-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. The trial was carried out in Poland (1 trial) in 2021.
The first application took place at crop stage BBCH 32 and the second application was done 18 days later at BBCH 53.

Efficacy in terms of green leaf area was assessed on the whole plant at 29 DA-B. In this trial, only one disease, SEPPTR, was present. After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 0-6 % compared to the untreated control.

No statistically significant difference between the performance of CA3642 compared to the used reference standards was assessed.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in spelt affected by a range of pathogens in the North-East EPPO zone.

Table 3.2-329: Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZSP assessed as green leaf area – valid assessments – North-East EPPO zone

Part rated assm. timing	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC		PRIAXOR PYR + FLU* 225 g/L EC	CA2702 AZX 250 g/L SC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.5 L/ha 225 g PYR/ha + 112.5 g FLU/ha	0.8 L/ha 200 g AZX/ha
Plant late	POL	47	29		GRNARE cf UTC	40.0 a 100	**42.5 a 106.3**	**40.0 a 100.0**	41.3 a 103.3	40.0 a 100.0
Mean efficacy				*1*	*Mean*	*40.0*	***106.3***	***100.0***	*103.3*	*100.0*

[b]UTC: % infestation in untreated control at assessment date
* PYR + FLU: 150 g/L Pyraclostrobin + 75 g/L Fluxapyroxad

Comments of zRMS:

The mean green leaf area increased by 6,3% after 2 applications of CA3642 at 1,4 l/ha. No increase was visible for dose rate of 1,2 l/ha. No statistical differences between test and reference products can be observed in the North-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Wheat Durum (TRZDU)

Durum wheat (TRZDU) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

A total of eight trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Septoria leaf blotch (SEPTTR) in durum wheat in the Maritime (5 trials) and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (3 trials) and France (2 trials).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials) and Romania (1 trial).

In addition, 1 trial is available from the Maritime zone (Germany) on spring-sown durum wheat. The data from this trial is also presented within this section, but in separate tables.

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all presented leaf levels (L1, L2, L3 and L4).

TRZDU – SEPTTR – Maritime EPPO zone

Five trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the Maritime EPPO zone. Three trials were carried out in Germany and two trials were carried out in France in 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2 14: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU against SEPTTR – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTC 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
Leaf 1 early	52	16	1	*Mean*	*6.8*	*~~64.7~~* ***64.4***	*~~57.4~~* ***56.8***	*~~58.8~~ 58.7*	*~~63.2~~ 63.5*	1=	1=	1=	1=
Leaf 1 late	45	31	1	*Mean*	*4.2*	*~~73.8~~* ***74.0***	*~~88.1~~* ***87.9***	*~~59.5~~ 61.0*	*~~69.0~~ 70.0*	1=	1=	1=	1=
Leaf 1 very late	62-76	36-42	3	*Mean* Min Max	*43.7* 12.5 69.4	*~~65.4~~* ***65.6*** ~~55.5~~ **55.6** ~~74.4~~ **74.8**	*~~69.2~~* ***69.3*** **53.5** ~~77.6~~ **78.0**	~~53.4~~ 53.2 ~~37.5~~ 37.4 ~~69.9~~ 69.8	*~~72.7~~ 72.9* 62.2 ~~81.6~~ 82.0	1> 2=	3=	3=	1< 2=
Leaf 2 early	50-52	16	2	*Mean* Min Max	*11.3* 6.3 16.2	*~~55.1~~* ***55.2*** ~~46.0~~ **46.3** ~~64.2~~ **64.1**	*~~38.3~~* ***37.9*** ~~22.2~~ **21.6** ~~54.3~~ **54.1**	*~~30.5~~ 30.7* ~~4.8~~ 5.0 ~~56.2~~ 56.4	*~~50.4~~ 50.6* ~~38.9~~ 39.0 ~~61.9~~ 62.1	2=	2>	2=	1> 1=
Leaf 2 late	45	31	1	*Mean*	*14.1*	*~~65.2~~* ***65.3***	*~~65.2~~* ***64.9***	*~~52.5~~ 52.0*	*~~48.9~~ 49.0*	1=	1=	1=	1=
Leaf 2 very late	62-70	36-42	2	*Mean* Min Max	*53.0* 34.0 71.9	***51.4*** **23.1** **79.7**	***37.3*** **22.5** ~~52.1~~ **52.0**	~~27.9~~ 27.8 27.5 ~~28.2~~ 28.1	*~~47.6~~ 47.7* 31.3 ~~63.8~~ 64.0	2=	2=	2=	2=
Leaf 3 early	35	15	3	*Mean* Min Max	*28.5* 4.1 65.7	~~49.8~~ **48.9** ~~36.6~~ **37.3** ~~60.1~~ **60.4**	*~~56.7~~* ***56.8*** ~~48.8~~ **49.1** ~~69.0~~ **69.2**	*~~29.8~~ 30.3* ~~13.2~~ 13.3 ~~46.8~~ 46.9	*~~32.6~~ 32.7* ~~22.2~~ 22.3 39.0	1= 2>	2= 1>	1= 2>	2= 1>
Leaf 4 early	28-35	14-15	2	*Mean* Min Max	6.5 4.4 8.6	*~~51.7~~* ***52.1*** **48.8** ~~54.5~~ **55.4**	*~~57.5~~* ***58.0*** ~~52.3~~ **53.4** ~~62.8~~ **62.5**	*~~37.3~~ 37.6* ~~33.7~~ 34.0 ~~40.9~~ 41.2	*~~48.3~~ 48.8* ~~45.5~~ 45.8 ~~51.2~~ 51.7	2=	2=	2=	2=
Efficacy after 1 application													
Leaf 2 late	34	-	1	*Mean*	5.8	*~~41.4~~* ***42.4***	*~~15.5~~* ***15.9***	*0*	*~~46.6~~ 47.1*	1>	1=	1>	1<
Leaf 4 very late	43	-	1	*Mean*	6.8	*~~91.2~~* ***91.1***	*~~95.6~~* ***95.7***	*~~58.8~~ 59.3*	*~~85.3~~ 85.2*	1=	1=	1=	1=

After two applications of CA3642 applied at 1.2-1.4 L/ha

At an early assessment date (14-19 DA-B) an efficacy of 57-65 %, 38-55%, 50-57 % and 52-58% was observed in leaf level 1, 2, 3 and 4, respectively, when CA3642 was applied at a dose rate of 1.2 L/ha and 1.4 L/ha. In all early assessments, CA3642 demonstrated a higher or equivalent efficacy compared to the reference standards CA2702 and CA2445.

In leaf level 1, efficacy was also assessed late (31 DA-B) and very late (36-42 DA-B). In these assessments, a mean efficacy ranging from 65-74% for the higher intended dose rate and 69-88% for the lower intended dose rate was observed. In 3 of the 4 trials efficacy was comparable to both reference products. In 1 trial CA3642 applied at 1.4 L/ha gave significantly higher efficacy compared to CA2702, and when applied at 1.2 L/ha efficacy was comparable to CA2702 but significantly lower compared to CA2445.

In leaf level 2, efficacy was also assessed late (31 DA-B) and very late (36-42 DA-B). In these assessments, a mean efficacy ranging from 51-65% for the higher intended dose rate and 37-65% for the lower intended dose rate was observed. The observed efficacy was in all these assessments comparable to both reference standards.

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>

Efficacy after one application was assessed 34 and 43 days after application in two trials on leaf level 2 and 4. After the first application of CA3642 at 1.2-1.4 L/ha, efficacy of 15.5% - ~~95.6~~ 95.7% was observed.
The used reference standards achieved an efficacy ranging from 0-~~58.8~~ 59.3 % (CA2702) and ~~46.6~~ 47.1 - ~~85.3~~ 85.2 % (CA2445), but no statistically significant differences were observed compared to CA3642 except for one trial: in leaf 2 late where CA3642 and CA2445 showed significantly higher values for efficacy compared to the product CA2702.

Overall, CA3642 applied at 1.2-1.4 L/ha achieved already after one application control levels of up to ~~95.6~~ 95.7 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

In most assessments, with either 1 or 2 applications, both rates of CA3642 reduced disease severity compared to untreated plots. The efficacy against SEPTTR was comparable to, or higher than, that derived from applications of the authorised reference products.

Comments of zRMS:

5 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter durum wheat in the Maritime EPPO climatic zone. CA3642 achieved moderate level of control on L1 after 2 applications with mean efficacy of 65,6% and 69,3% at 1,2 and 1,4 l/ha, respectively. Slight lower results have been noted for other leaf: 37,9%-55,2% for L2, 48,9-56,8% for L3 and 52,1-58% for L4. Also moderate effectiveness was presented after 1 application in 2 trials. Significant differences between test and reference products were observed in submitted trials. CA3642 at 1,2-1,4 l/ha was superior compared to CA2702 and CA2445. Limited number of trials was available in the MAR zone but an extrapolation from winter wheat is possible in opinion of zRMS. Taking into account all trials, it can be concluded that CA3642 at 1,2-1,4 l/ha in 1-2 applications is moderately effective for control of SEPTTR in winter durum wheat in the MAR zone.*

**Accordance to table 3.2-12, durum wheat has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TRZDU spring – SEPTTR – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to evaluate the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat-spring against SEPTTR. This trial was carried out in Germany in 2020.
The first application took place at crop stage BBCH 31 and the second application was done 17 days later, at BBCH 53.

Table 3.2-330: Summary - Efficacy of CA3642 (1.2 L/ha, 1.4 L/ha) in TRZDU spring against SEPTTR – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTC 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF3 late	45	28	1	*Mean*	*10.3*	*~~92.2~~ 92.3*	*~~85.4~~ 85.2*	*~~74.8~~ 87.9*	*~~40.8~~ 40.7*	1=	1>	1=	1>

[b] UTC: % infestation in untreated control at assessment date

One assessment on leaf level 3 is available. A mean efficacy of ~~85.4~~ 85.2 - ~~92.2~~ 92.3% was observed for this assessment. Performance of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) and assessed at a late date was comparable to the reference CA2702 with no statistically significant differences. Compared to CA2445, CA3642 applied at both rates performed better with statistically significant differences at level 3.

Both rates of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against SEPTTR was comparable to or better than that derived from applications of the authorised reference products.

~~**Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control SEPTTR on durum wheat-spring in the Maritime EPPO zone.**~~

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on wheat durum in the Maritime EPPO zone.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Zymoseptoria tritici* in spring durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results with mean efficacy of 85,2 and 92,3% after 2 applications. Similar effect was presented for the reference product CA2702. The test product had superior effectiveness compared to CA2445. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

TRZDU – SEPTTR – North-East EPPO zone

No trials are available for the North-East EPPO Zone. However, according to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, three additional trials from Germany are presented to justify the minimum effective dose of 1.2-1.4 L/ha CA3642 applied up to two times in durum wheat against SEPTTR. CA3642 was first applied at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2-14: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU against SEPTTR – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTC 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
Leaf 1 early	52	16	1	*Mean*	*6.8*	*~~64.7~~* ***64.4***	*~~57.4~~* ***56.8***	*~~58.8~~ 58.7*	*~~63.2~~ 63.5*	1=	1=	1=	1=
Leaf 1 very late	62-76	36-42	3	*Mean* Min Max	59.3 ~~42.9~~ 49.2 69.4	*~~61.0~~* ***61.1*** ~~55.5~~ **55.6** ~~66.4~~ **66.5**	***65.0*** **53.5** ~~76.4~~ **76.5**	~~53.4~~ 53.6 ~~37.5~~ 37.4 ~~69.9~~ 69.8	~~72.7~~ 68.3 62.2 ~~81.6~~ 74.4	1> 1=	2=	2=	1< 1=
Leaf 2 early	50-52	16	2	*Mean* Min Max	*11.3* 6.3 16.2	*~~55.1~~* **55.2** ~~46.0~~ **46.3** ~~64.2~~ **64.1**	*~~38.3~~* ***37.9*** ~~22.2~~ **21.6** ~~54.3~~ **54.1**	*~~30.5~~ 30.7* ~~4.8~~ 5.0 ~~56.2~~ 56.4	*~~50.4~~* 50.6 ~~38.9~~ 39.0 ~~61.9~~ 62.1	2=	2>	2=	1> 1=
Leaf 2 very late	70	36	1	*Mean*	71.9	*23.1*	*22.5*	*27.5*	*31.3*	1=	1=	1=	1=
Leaf 3 early	35	15	2	*Mean* Min Max	*~~28.5~~* *40.8* ~~4.1~~ 15.8 65.7	*~~49.8~~ 56.7* ~~36.6~~ **52.9** ~~60.1~~ **60.4**	*~~56.7~~* ***60.7*** ~~48.8~~ **52.2** ~~69.0~~ **69.2**	*~~29.8~~ 30.1* ~~13.2~~ 13.3 ~~46.8~~ 46.9	*~~32.6~~ 29.5* ~~22.2~~ 22.3 ~~39.0~~ 36.7	2>	1= 1>	2>	1= 1>
Efficacy after 1 application													
Leaf 2 late	34	-	1	*Mean*	*5.8*	*~~41.4~~* ***42.4***	*~~15.5~~* ***15.9***	*0*	*~~46.6~~ 47.1*	1>	1=	1>	1<
Leaf 4 very late	43	-	1	*Mean*	*6.8*	*~~91.2~~* ***91.1***	*~~95.6~~* ***95.7***	*~~58.8~~ 59.3*	*~~85.3~~ 85.2*	1=	1=	1=	1=

In the supporting trials, at an early assessment date (14-16 DA-B) an efficacy of 57-65 %, 22-64%, 50-57 % was observed in leaf level 1, 2, 3, respectively, when CA3642 was applied at a dose rate of 1.2 L/ha and 1.4 L/ha. In one assessment, the test product was statistically significantly inferior compared to the reference standards CA2445. In the other assessments, CA3542 obtained a higher or equivalent efficacy compared to the reference standards CA2702 and CA2445.

In leaf level 2, efficacy was also assessed very late (36-42 DA-B). In these assessments, a mean efficacy of 23% for the higher intended dose rate and 22.5% for the lower intended dose rate was observed. The observed efficacy was in all these assessments comparable to both reference standards.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on wheat durum in the North-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Zymoseptoria tritici* in winter durum wheat in the North-East EPPO climatic zone. 3 trials conducted in Germany have been included to the overall calculation as support for the Polish registration. The moderate effectiveness was observed after 1-2 applications. CA3642 at 1,2-1,4 l/ha achieved similar results compared to the reference products CA2702 and CA2445. However, limited number of trials was available in the NE zone and an extrapolation from other cereals is not possible. Durum wheat is minor crop in Poland and the registration under art. 51 can be used for this species.

TRZDU – SEPTTR – South-East EPPO zone

Three trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the South-East EPPO zone. Trials were carried out in Hungary (2 trials) and Romania (1 trial) in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 24-28 days later, at BBCH 39-59.

Table 3.2-18: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU against SEPTTR – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445 PTZ 250 g/L EC	CA2702 AZX 250 g/L SC	PRIAXOR PCS + FLX** 225 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	PRIAXOR 1.5 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAXOR 1.5 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 2 applications																
Leaf 1 late	58	34	1		22.1	**82.4**	~~69.7~~ **69.8**	-	~~26.2~~ 16.3	~~91.9~~ 91.8	1=	1>	-	1=	1>	-
Leaf 1 very late	61	37	1		19.4	~~90.7~~ **91.0**	~~95.4~~ **95.5**	-	~~56.7~~ 56.9	97.9	1=	1>	-	1=	1>	-
Leaf 2 late	60	32	1		6.9	~~99.1~~ **99.2**	**99.0**	~~98.5~~ 98.6	~~98.7~~ 98.8	-	-	1=	1=	-	1=	1=

UTC: % infestation in untreated control at assessment date
** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots. At 37 DA-B, efficacy of up to ~~95.4~~ 95.5 % was observed on leaf level 1 and with the lower intended dose rate (1.2 L/ha). Statistically significant differences among application of CA3642 for both dose rates (1.4 L/ha and 1.2 1. L/ha) and the reference product CA2702 were found on leaf 1 at late and very late assessment dates. On leaf 2 late, an equivalent efficacy was observed for CA3642 applied either at 1.4 L/ha or 1.2 L/ha and CA2702 and CA2445.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on wheat durum in the South-East EPPO zone.

Comments of zRMS:

3 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter durum wheat in the South-East EPPO climatic zone. CA3642 achieved good results of 82,4-99,2% at 1,4 l/ha and 69.8-99.0% at 1,2 l/ha after 2 applications, in the late assessments. The test product was significantly superior compared to the reference product CA2702 in 2 trials. No results after 1 application were available. Limited number of trials was presented in the SE zone but an extrapolation from winter wheat is possible in opinion of zRMS. Taking into account all trials, it can be concluded that CA3642 at 1,2-1,4 l/ha in 2 applications is effective for control of SEPTTR in winter durum wheat in the SE zone.*

**Accordance to table 3.2-12, durum wheat has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Summary of data on SEPTTR in wheat durum

Data is presented from a total of eight trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control SEPTTR in durum wheat. In almost all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 from either dose rate was overall comparable to that observed from applications of the reference products across the EPPO zones. Statistically significant differences were detected between the reference product CA2702 and CA3642 in the datasets from the Maritime and the South-East EPPO zones, whereby CA3642 gave higher efficacy.

Only in a couple of assessments in the presented datasets for SEPTTR there were statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, however a consistent trend of increased disease control was generally observed.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 4 at early or late assessments ranged from 49.8% to 91.2% for applications of CA3642 at 1.4 L/ha, and 37.3 % to 95.6 % for applications at 1.2 L/ha. In these trials disease severity ranged from 4.1 % to 71.9 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 2 at late assessments ranged from 82.4% to 99.1% for applications of CA3642 at 1.4 L/ha, and 69.7 % to 99 % for applications at 1.2 L/ha. In these trials disease severity ranged from 6.9 % to 22.1 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of SEPTTR in wheat durum.

Durum wheat (TRZDU) – (PUCCSI - *Puccinia striiformis f. sp. tritici*)

One trial was carried out in 2021 to evaluate the efficacy of CA3642 for the control of PUCCSI in durum wheat in the Maritime EPPO zone. The trial was carried out in Germany.

In this trial, the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to commercially used reference standards applied at the registered dose rates at the time of application. Valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

TRZDU – PUCCSI – Maritime EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCSI in the Maritime EPPO zone. This trial was carried out in Germany in

2021.
The first application took place at crop stage BBCH 31 and the second application was done 34 days later, at BBCH 45.

Table 3.2-331: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU against PUCCSI – valid assessments – Maritime EPPO zone

Leaf level ass m. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ ha	CA2445 PTZ 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 PTZ 200 g PTZ/ha	CA2702 0.8 L/ha
Efficacy after 1 application													
Leaf 2 early	50	16	1	*Mean*	4.5	~~44.4~~ 44.2	~~42.2~~ 42.5	0.0	44.4	1=	1>	1=	1>
Leaf 3 early	50	16	1	*Mean*	5.6	100.0	100.0	~~80.4~~ 80.2	100.0	1=	1=	1=	1=
Efficacy after 1 application													
Leaf 2 late	34	-	1	*Mean*	4.8	~~29.2~~ 29.1	~~27.1~~ 27.0	0.0	~~33.3~~ 32.6	1=	1>	1=	1>
Leaf 3 late	34	-	1	*Mean*	5.6	100.0	100.0	~~55.4~~ 56.0	100.0	1=	1>	1=	1>

[b] UTC: % infestation in untreated control at assessment date

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
At an early assessment date (16 DA-B) ~~42.2~~ 42.5-100 % efficacy was observed in leaf level 2 and 3. Performance of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) and assessed at an early date was comparable to the used reference standards. In one assessment (16 DA-B) on leaf level 2 early, the efficacy of CA3642 at both dose rates was better compared to CA2702 with a statistically significant difference. CA3642 achieved already at an early assessment date (16 DA-B) acceptable control (100 %) on leaf 3 level.

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
Efficacy after one application was assessed 34 days after application on leaf level 2 and 3.
With an initial mean infestation of ~~4.1~~ 4.8 % on leaf level 2, the efficacy of CA3642 applied at 1.2 L/ha or 1.4 L/ha ranged between ~~27.1~~ 27.0 or ~~29.2~~ 29.1 %.
For the evaluation on leaf level 3, a mean efficacy of 100 % was observed after one application of CA3642 at 1.2-1.4 L/ha. Statistically significant differences were observed between the efficacy of CA2702 and the efficacy of CA3642 at two tested dose rates whereby CA3642 was significantly better, but differences were not observed when comparing CA3642 with CA2445.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Puccinia striiformis* f.sp. *tritici* in winter durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate level of control with results of 42,5-44,2% in the first trial and 100% in the second trial after 2 applications, in the early assessment. Also after 1 application, high differences between trials were visible (27-29,1% vs 100%). The test product was superior compared to the reference product CA2702. Similar effect was observed between CA3642 and CA2445. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

TRZDU – PUCCSI – South-East EPPO Zone

No data is available in support of the efficacy for control of yellow rust (PUCCSI - *Puccinia striiformis f. sp. tritici)* in South-East EPPO Zone. However, the species *Puccinia striiformis f. sp. tritici* is also the pathogen agent that causes yellow rust on wheat, rye and triticale. It therefore seems reasonable from an agronomic perspective to assume the same rate effects of CA3642 applied at 1.2 - 1.4 L/ha on winter wheat from the robust dataset proposed for the closely related crop durum wheat. Furthermore, existing authorisations for prothioconazole and azoxystrobin products also indicates that performance is comparable between the pathogen/crop pairs."

The dataset presented in winter wheat / PUCCSI - *Puccinia striiformis f. sp. tritici*) – showed that sufficient efficacy of the dose rates from 1.2 - 1.4 L/ha is achieved.

Comments of zRMS:

No efficacy trials were carried out to control of *Puccinia striiformis* f.sp. *tritici* in winter durum wheat in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Summary of data on PUCCSI in wheat durum

Overall, CA3642 applied at 1.2-1.4 L/ha achieved already after one application control levels of 100 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

In three assessments out of 4, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. In three out of four assessments CA3642 showed statistically higher efficacy than the authorised reference standard CA2702.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Puccinia striiformis f. sp. tritici* on durum wheat in the Central Regulatory Regulatory zone.

Durum wheat (TRZDU) – (ERYSGT - *Blumeria graminis f.sp. tritici)*

A total of four trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of powdery mildew of cereals (ERYSGT) in durum wheat in the Maritime (2 trials) and the South-East EPPO (2 trials) zones.

The trials from the Maritime EPPO zone were carried out in Germany (2 trials).
The trials from the South-East EPPO zone were carried out in in Hungary (2 trials).

In addition, 1 trial is available from the Maritime zone (Germany) on spring-sown durum wheat. The data from this trial is also presented within this section, but in separate tables.

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to commercially used reference standards applied at the registered dose rates at the time of application.
In some trials valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Overall, CA3642 applied at both dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all presented leaf levels (L1, L2, L3 and L4).

TRZDU – ERYSGT – Maritime EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against ERYSGT in the Maritime EPPO zone. The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2-28: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU against ERYSGT– valid assessments – Maritime EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2445 PTC 250 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g ai/ha**	**0.8 L/ha 200 g ai/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**
Efficacy after 2 applications													
Leaf 1 early	50	16	1		5.5	**100**	~~80~~ **79.9**	100	100	1=	1=	1<	1<
Leaf 1 very late	70	36	1		5.9	**100**	~~81.4~~ **81.3**	100	100	1=	1=	1<	1<
~~Leaf 2 early~~	~~50~~	~~16~~	~~1~~		~~6.3~~	~~46.0~~	~~22.2~~	~~62.2~~	~~5.4~~	~~1>~~	~~1=~~	~~1=~~	~~1<~~
Leaf 2 very late	70	36	1		26.2	~~70.2~~ **70.3**	~~70.2~~ **70.4**	~~69.8~~ 69.7	~~2.7~~ 2.5	1=	1>	1=	1>
Leaf 3 early	50	16	1		50.4	**36.3**	**51.0**	74.4	0.0	1<	1>	1<	1>
Efficacy after 1 application													
Leaf 3 late	34	34	1		4.0	~~25.0~~ **24.1**	~~22.5~~ **21.9**	0.0	~~10.0~~ 10.3	1>	1=	1>	1=
Leaf 4 very late	43	43	1		7.4	~~50.0~~ **50.1**	~~51.4~~ **51.8**	~~40.5~~ 41.2	~~16.2~~ 16.6	1=	1=	1=	1=

After two applications of CA3642 applied at 1.2-1.4 L/ha

At an early assessment date (16 DA-B) mean efficacy of 36.3-100 % was observed in leaf level 3 and leaf level 1, respectively. Statistically significant differences were observed between efficacy of CA3642 applied at 1.4 or 1.2 L/ha compared to both reference products (CA2702 and CA2445). In one assessment in leaf level 1, the efficacy of the reference products (100%) was significantly higher than the efficacy with the lower proposed dose (1.2 L/ha, 80% efficacy). In most assessments on leaf level 2, a higher efficacy was recorded for CA3642 compared to CA2702, and for CA2445 the efficacy was comparable. For leaf level 2 early, CA2445 was statistically significant superior to the 1.2 L/ha dose rate of CA3642 in one assessment. On leaf level 3, both rates of CA3642 gave significantly higher control compared to CA2702 and lower compared to CA2445.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots and were comparable to the reference standards.

Comments of zRMS:

2 efficacy trials were carried out to control of *Blumeria graminis* in winter durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,4 l/ha achieved full effectiveness after 2 applications on L1, either in the early and late assessments. The moderate control was visible for the dose rate of 1,2 l/ha. Significant inferior efficacy has been noted for L2 and L3 for both test and reference products CA2445 and CA2702. Insufficient results were presented after 1 application. CA3642 at 1,2-1,4 l/ha achieved control of 50,1-51,8% in 1 out of 2 trials. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, durum wheat has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TRZDU spring – ERYSGT – Maritime EPPO zone

One trial from the Maritime EPPO zone is available to evaluate the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in durum wheat-spring against ERYSGT. This trial was carried out in Germany in 2020.
The first application took place at crop stage BBCH 31 and the second application was done 17 days later, at BBCH 53.

Table 3.2-332: Summary - Efficacy of CA3642 (1.2 L/ha, 1.4 L/ha) in TRZDU spring against ERYSGT – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTC 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha
Efficacy after 2 applications													
LEAF1 very late	56	39	1	*Mean*	6.9	***~~95.6~~ 96.4***	***~~88.4~~ 87.9***	~~76.8~~ 93.9	*~~97.1~~ 94.2*	1=	1=	1=	1=
LEAF2 very late	56	39	1	*Mean*	*9.1*	***95.6***	***~~87.9~~ 88.1***	~~81.3~~ 89.7	~~93.4~~ 91.2	1=	1=	1=	1=
LEAF3 early	31	14	1	*Mean*	*4.9*	***100***	***~~91.8~~ 91.4***	~~91.8~~ 64.9	~~91.8~~ 92.1	~~1=~~ 1>	1=	~~1=~~ 1>	1=
LEAF3 late	45	28	1	Mean	7.3	**100**	**~~93.2~~ 93.5**	~~89.0~~ 85.5	~~94.5~~ 90.7	1=	1=	1=	1=

[b] UTC: % infestation in untreated control at assessment date

In leaf level 1 mean efficacy of ~~88.4~~ 87.9-~~95.6~~ 96.4% was observed and on leaf level 2 the efficacy was ~~87.9~~ 88.1-95.6 % at very late assessment dates (39 DA-B). Performance of CA3642 applied at both intended dose rates (1.2 and 1.4 L/ha) was comparable to the reference CA2445 with no statistically significant differences. Compared to CA2702, CA3642 applied at both rates no statistically significant differences at leaf level 1 and 2 were observed, however, for the higher application rates (1.4 L/ha) a numerically higher efficacy was observed for CA3642.
At early (14 DA-B) and late assessment dates (28 DA-B), ~~92~~ 91 – 100 % efficacy was observed for CA3642 on leaf level 3 applied at the two dose rates (1.2 and 1.4 L/ha). The performance of CA3642 was equivalent to the efficacy of both reference standards.

Both rates of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against ERYSGT was comparable to that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control ERYSGT on durum wheat-spring in the Maritime EPPO zone.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Blumeria graminis* in spring durum wheat in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results after 2 applications. Dose rate of 1,4 l/ha presented 95,6-100% and 87,9-93,5% at 1,2 l/ha. Similar effect with slight differences were observed for the test products. The test product and CA2445 had comparable results. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

TRZDU – ERYSGT – South-East EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against ERYSGT in the South-East EPPO zone. The trials were carried out in Hungary in 2019. The first application took place at crop stage BBCH 31 and the second application was done 24 days later, at BBCH 49.

Table 3.2-333: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU against ERYSGT– valid assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC		PRIAXOR 225 g/L EC	CA2702 AZX 250 g/L SC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	0.8 L/ha 200 g AZX/ha	PRI-AXOR 1.5 L/ha	CA2702 0.8 L/ha	PRI-AXOR 1.5 L/ha	CA2702 0.8 L/ha
Efficacy after 2 applications													
LEAF2 early	39	15	2	*Mean* Min Max	*20.9* 18.7 23.0	*~~80.4~~ 80.5* *~~77.4~~ 77.6* *~~83.4~~ 83.33*	*~~76.4~~ 76.5* *~~72.6~~ 72.7* *~~80.2~~ 80.3*	*~~84.5~~ 84.7* *~~78.7~~ 78.8* *~~90.4~~ 90.6*	*~~45.5~~ 45.4* *~~37.4~~ 37.3* *53.5*	1= 1<	1= 1>	1= 1<	1= 1>
LEAF3 early	39	15	2	*Mean* Min Max	*52.2* 49.5 54.8	*73.3* *68.3* *78.3*	*61.5* *~~56.8~~ 56.7* *66.3*	*~~77.9~~ 78.0* *~~77.0~~ 77.1* *78.8*	*24.3* *~~18.2~~ 18.3* *30.3*	2=	2>	1= 1<	2>
Efficacy after 1 application													
LEAF3 early	21	21	1	*Mean*	*16.4*	*~~68.9~~ 69.1*	*~~60.4~~ 60.2*	*~~55.5~~ 55.7*	*~~21.3~~ 21.8*	1=	1>	1=	1>
LEAF4 early	24	24	2	*Mean* Min Max	*24.4* 9.6 39.2	*~~78.4~~ 78.6* *~~72.4~~ 72.6* *~~84.4~~ 84.5*	*~~66.4~~ 66.6* *~~62.0~~ 61.9* *~~70.8~~ 71.3*	*~~65.0~~ 65.1* *~~60.2~~ 60.3* *69.8*	*~~41.1~~ 41.2* *~~29.1~~ 29.2* *53.1*	2=	2>	2=	1= 1>

UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.2-1.4 L/ha

In trials carried out in the South-East EPPO zone, efficacy of ~~76.4~~ 76.5 % and ~~80.4~~ 80.5% was observed on leaf level 2, 15 DA-B after application of 1.2 and 1.4 L/ha CA3642, respectively.

In the 2 trials assessed for leaf 2, CA3642 at both dose rates gave significantly higher efficacy compared to CA2702 in 1 trial, and lower compared to Priaxor in the same trial. In the other trial there were no significant differences among CA3642 or the reference standards.
Early assessments on leaf 3 from the same 2 trials are also presented after 2 applications. In both trials both rates of CA3642 gave significantly higher efficacy compared to CA2702. In one of these trials efficacy of CA3642 at 1.2 L/ha was significantly lower compared to Priaxor, and was comparable in the other trial.

A similar trend was found already after one application, at leaf level 3 and 4, there was a significantly higher efficacy of CA3642 applied at 1.4 L/ha when compared to CA2702 in all assessments, and also when applied at 1.2 L/ha in 1 assessment.CA3642 was comparable to Priaxor at all assessments after 1 application.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control ERYSGT on wheat durum in the South-East EPPO zone.

Comments of zRMS:

2 efficacy trials were carried out to control of *Blumeria graminis* in winter durum wheat in the South-East EPPO climatic zone. CA3642 achieved moderate effectiveness after 2 applications, in the early assessments. Dose rate of 1,4 l/ha presented the mean efficacy of 73,3-80,5% and dose of 1,2 l/ha had 61,5-76,5%. No significant differences were observed between test and reference products on L2. CA3642 was high superior compared to CA2702 on L3. Similar effect has been noted after 1 application with moderate control of CA3642. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, durum wheat has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Summary of data on ERYSGT in durum wheat

Data is presented from a total of four trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control ERYSGT in durum wheat. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control.

The efficacy obtained from applications of CA3642 from either dose rate was overall comparable or higher to that observed from applications of the reference products across the EPPO zones. Significant differences in efficacy were found in the two EPPO zones evaluated (Maritime and South-East). In general, there was a trend of higher efficacy of the proposed doses of CA3642 compared to CA2702. Meanwhile, the efficacy of PRIAXOR or CA2445 and CA3642 is generally comparable.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 4 at early or late assessments ranged from 25.0% to 100% for applications of CA3642 at 1.4 L/ha, and 22.5% to 81.4% for applications at 1.2 L/ha. In these trials disease severity ranged from 4.0% to 50.4%.

The mean efficacy in the South-East EPPO zone on leaf levels 2 to 4 at early assessments ranged from 68.9% to 80.4% for applications of CA3642 at 1.4 L/ha, and from 60.4% to 76.4% for applications at 1.2 L/ha. In these trials disease severity ranged from 9.6% to 54.8%.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of ERYSGT in durum wheat.

Durum Wheat (TRZDU) – Green leaf area

A total of eight trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 in terms of green leaf area in winter rye in the Maritime (5 trials) and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in France (2 trials) and Germany (3 trials).
Trials from the South-East EPPO zone were carried out in Romania (1 trials) and Hungary (2 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.
In some trial valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better retention of green leaf area compared to the used reference standard.

TRZDU – Green leaf area – Maritime EPPO zone

In five trials from the Maritime EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in France (2 trials) and Germany (3 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-43 days later, at BBCH 45-55.

Table 3.2-334: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU assessed as green leaf area – valid assessments – Maritime EPPO zone

Part rated assm. timing	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 150 g/L AZX + 150 g/L PTC 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
PLANT	62-76	31-42	5*	*Mean* Min Max	29.4 2.0 68.8	**344.3** **100.0** **825.0**	**327.5** **103.6** **765.0**	191.7 104.5 306.7	3> 2=	5=	2> 3=	1> 4=

Efficacy in terms of green leaf area was assessed on the whole plant at 31-42 DA-B. In three trials several pathogens were present. In two trials SEPTTR and ERYSGT were present and in one of those trials also PUCCSI was present. In three trials just SEPTTR was present.

After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 0-725 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha was statistically significant compared to the untreated control in three trials out of five.

Application of CA3642 at 1.4 L/ha resulted in statistically significant higher green leaf area compared to the application of CA2702 in three trials. In two trials, the application of CA3642 applied at 1.2 L/ha resulted in statistically higher green leaf area compared to the application of CA2702, and in 1 trial compared to CA2445.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in wheat durum affected by a range of pathogens in the Maritime EPPO zone.

Comments of zRMS:

The mean green leaf area increased by 244,3% after 2 applications of CA3642 at 1,4 l/ha and 227,5% at 1,2 l/ha in 5 efficacy trials. Significant differences between test and reference products can be observed in 3 trials in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

TRZDU – Green leaf area – South-East EPPO zone

In three trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Romania (1 trial) and Hungary (2 trials) in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 24-28 days later, at BBCH 39-59.

Table 3.2-335: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TRZDU assessed as green leaf area – valid assessments – South-East EPPO zone

Part Rated	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC		PRIAXOR 225 g/L EC	CA2702 AZX 250 g/L SC	CA2445 PTC 250 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.5 L/ha 150 g/L PCS + 75 g/L FLX	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAXOR 1.5 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	PRIAXOR 1.5 L/ha
PLANT	58-61	34-37	2	Mean Min Max	35.0 30.0 40.0	204.2 175.0 233.3	204.2 175.0 233.3	204.2 175.0 233.3	154.2 125.0 183.3		2>		2=	2>		2=
LEAF1	60	32	1		17.5	342.9	342.9		317.1	282.9	1>	1>		1>	1>	
LEAF2	60	32	1		1.3	2253.8	2215.4		1907.7	1500.0	1>	1>		1>	1>	

Efficacy in terms of green leaf area was assessed in two trials on the whole plant at 34-37 DA-B. In one trial green leaf area was assessed on leaf level 1 and 2 at 32 DA-B. In two trials several pathogens were present. In the other trial just a single disease was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 75-133 % on the whole plant compared to the untreated control. In both trials CA3642 at either dose rate significantly increased GLA compared to the untreated control. On leaf level 1 an increase by 242.9 % and on leaf level 2 an increase by 2153.8 - 2115.4 % was observed. The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha on leaf level 1 and 2 was statistically significant compared to the untreated control in all trials.

Green leaf area for treatments in which CA3642 applied at 1.2 L/ha and 1.4 L/ha was statistically higher than the used reference standards CA2702 and CA2445. However, comparing to PRIAXOR there were no statistically significant differences.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in wheat durum affected by a range of pathogens in the South-East EPPO zone.

Comments of zRMS:

The mean green leaf area increased by 104,2% after 2 applications of CA3642 at 1,2 and 1,4 l/ha if we take account whole plant. Significant increase has been noted also in case of leaf (2115,4-2153,8% on L2 and 242,9% on L1). The test product was superior compared to CA2702 and CA2445 in all trials in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Triticale (TTLWI)

Winter triticale (TTLWI) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

A total of 12 trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 for the control of Septoria leaf blotch (SEPTTR) in winter triticale in the Maritime (6 trials), North-East (2 trials) and South-East (4 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (5 trials) and France (1 trial).
Trials from the North-East EPPO zone were carried out in Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Romania (3 trials) and Hungary (1 trial).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO one data is lacking.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) overall showed comparable or better mean efficacy compared to the used reference standards on all three presented leaf levels (L1, L2 and L3).

TTLWI – SEPTTR – Maritime EPPO zone

A total of six trials from the Maritime EPPO zone are available to justify the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against SEPTTR. The trials were carried out in France and Germany in 2019 and 2020.
The first application took place at crop stage BBCH 30 - 37 and the second application was done 15 - 32 days later, at BBCH 39 – 51.

The evaluation based on pest severity demonstrates low or acceptable control for both the test product (26-~~86~~ 87%) and the reference standards (18-72%) in six of seven assessments (exception: LEAF 3 very late, where efficacy was good). Among these 6 assessments, the efficacy of CA3642 was statistically comparable to that of the reference products, and in one case significantly higher compared to CA2445. In the assessment on LEAF3 efficacy of CA3642 at both dose rates was significantly higher compared to CA2702, and at 1.4 L/ha was also higher compared to CA2445.
In one trial which had the lowest efficacy values, as stated in the trial report, a possible reason for the insufficient control were the “unusually dry weather conditions compared to an average year” and

“late disease development and late rainfall”.

In one other trial, based on pest incidence, the level of efficacy was distinctly higher, with full control observed from CA3642 in 3 of 4 assessments. Compared to CA2702, efficacy of CA3642 was significantly higher in 3 assessments and comparable in the other assessment. Compared to CA2445 efficacy of CA3642 was comparable in 3 assessments and significantly lower in the other assessment.

The reduction of infestation from applications of CA3642 was statistically significant compared to untreated control for all assessments, except for LEAF 2 very late in one trial, where the 1.4 L/ha rate was not significantly different. However, a distinct numerical difference was observable.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on winter triticale in the Maritime EPPO zone.

Table 3.2-336: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI against SEPTTR – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
PESSEV													
LEAF 1 very late	55	35	*1*	*Mean*	*8.8*	~~40.9~~ ***41.2***	~~45.5~~ ***45.1***	~~35.2~~ *35.0*	~~48.9~~ *48.6*	1=	1=	1=	1=
LEAF 2 early	45	15	*1*	*Mean*	5.2	~~59.6~~ ***58.7***	~~63.5~~ ***63.3***	~~63.5~~ *62.6*	~~65.4~~ *65.8*	1=	1=	1=	1=
LEAF 2 late	61	31	*1*	*Mean*	5.6	~~51.8~~ ***52.6***	~~60.7~~ ***61.7***	~~58.9~~ *59.0*	~~60.7~~ *61.2*	1=	1=	1=	1=
LEAF 2 very late			*2*	*Mean*	*12.4*	~~56.5~~ ***56.4***	~~65.1~~ ***65.5***	~~49.4~~ *49.6*	~~38.6~~ *38.7*	3=	1>	3=	1>
				Min	*8.7*	~~26.0~~ ***25.7***	~~37.0~~ ***37.2***	~~18.2~~ *18.1*	~~23.8~~ *23.6*		2=		2=
				Max	*18.1*	~~72.4~~ ***72.1***	~~86.2~~ ***86.7***	~~72.4~~ *72.7*	~~64.4~~ *64.7*				
LEAF3 very late	76	45	*1*	*Mean*	5.3	***100.0***	~~94.3~~ ***94.2***	~~58.5~~ *58.2*	~~83.0~~ *83.4*	1>	1>	1>	1=
PESINC													
LEAF 1 late	59	27	*1*	*Mean*	38.8	***100.0***	***100.0***	*9.8*	*100.0*	1>	1=	1>	1=
LEAF 2 late	59	27	*1*	*Mean*	71.3	***66.6***	***66.6***	*0*	*100.0*	1>	1<	1>	1<
LEAF 2 early	47	15	*1*	*Mean*	55.0	***100.0***	***100.0***	*100*	*100.0*	1=	1=	1=	1=
LEAF 3 early	47	15	*1*	*Mean*	73.8	***100.0***	***100.0***	*30.5*	*100.0*	1>	1=	1>	1=

[b]UTC: % infestation in untreated control at assessment date

Comments of zRMS:

6 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter triticale in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved low to moderate effectiveness after 2 applications in the late assessments. Similar effect was visible for the reference products CA2702 and CA2445. Results based on PESINC parameter were presented in 1 trial and high efficacy has been noted. No results after 1 application were available.
Based on the above summary, it can be concluded that CA3642 at 1,2-1,4 l/ha in 2 applications is effective on moderate level for control SEPTTR in winter triticale in the MAR zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TTLWI – SEPTTR – North-East EPPO zone

Two trials from the North-East EPPO zone are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR. The trials were carried out in Poland in 2019. The first application took place at crop stage BBCH 32 - 37 and the second application was done 14 - 15 days later, at BBCH 39 – 51.

Efficacy was moderate to low in all assessments except 1 in these trials. In one assessment CA3642 and both reference products gave full control (LEAF 3 early assessment).
In the remaining 5 assessments, compared to CA2702, both dose rates of CA3642 gave significantly higher efficacy in 2 assessments, were equivalent in 1 assessment and in the other 2 assessments the 1.4 L/ha rate gave significantly higher efficacy, and the 1.2 L/ha rate was equivalent.
Compared to OSIRIS, the 1.4 L/ha rate of CA3642 was always statistically equivalent, and the 1.2 L/ha rate gave significantly lower efficacy in 4 assessments and was equivalent in 2 assessments.

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, five additional trials from Germany are presented for the evaluation of efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR. CA3642 was first applied at crop stage BBCH 30-37 and the second application was done 15-32 days later, at BBCH 39-51.

For the supporting data from Maritime EPPO zone (Germany) the evaluation based on pest severity demonstrates low or acceptable control for both the test product (26-~~86~~ 87%) and the reference standards (18-72%) in five of six assessments (exception: LEAF 3 very late, where efficacy was good). Among these 5 assessments, the efficacy of CA3642 was statistically comparable to that of the reference products except on LEAF 2 very late where 1 trial showed significantly higher efficacy from both rates of CA3642 compared to CA2445. In the assessment on LEAF3 efficacy of CA3642 at both dose rates was significantly higher compared to CA2702, and at 1.4 L/ha was also higher compared to CA2445.
In one trial which had the lowest efficacy values, as stated in the trial report, a possible reason for the insufficient control were the "unusually dry weather conditions compared to an average year" and "late disease development and late rainfall".

In one other trial, based on pest incidence, the level of efficacy was distinctly higher, with full control observed from CA3642 in 3 of 4 assessments. Compared to CA2702, efficacy of CA3642 was significantly higher in 3 assessments and comparable in the other assessment. Compared to CA2445 efficacy of CA3642 was comparable in 3 assessments and significantly lower in the other assessment.

The reduction of infestation from applications of CA3642 was statistically significant compared to untreated control for all assessments, except for LEAF 2 very late in one trial, where the 1.4 L/ha rate was not significantly different. However, a distinct numerical difference was observable.

Considering all elements presented in the previous sections, it is justified to claim the registra-

tion of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on winter triticale in the North-East EPPO zone.

Table 3.2-337: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI against SEPTTR – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 250 g/L PTZ EC	OSIRIS 65 EC EPC + MTC* 65 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g ATX/ha	0.8 L/ha 200 g PTZ/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 2.0 L/ha	CA2702 0.8 L/ha	CA2445 0.8 L/ha	OSIRIS 2.0 L/ha
Efficacy after 2 applications																
North-East EPPO Zone																
LEAF 1 very late	75	41	1		11.6	~~78.4~~ ***78.8***	~~69.0~~ ***69.4***	~~69.8~~ *70.2*	-	~~80.2~~ *79.9*	1>	-	1=	1=	-	1<
LEAF 2 early	49	15	1		5.5	~~76.4~~ ***76.9***	~~61.8~~ ***62.7***	~~47.3~~ *47.5*	-	~~74.5~~ *75.1*	1>	-	1=	1>	-	1<
LEAF 2 late	81	34	1		6.7	~~74.6~~ ***75.0***	***77.6***	~~53.7~~ *54.0*	-	~~64.2~~ *64.9*	1=	-	1=	1=	-	1=
LEAF 2 very late	75	41	1		25.9	~~71.0~~ ***71.1***	~~62.2~~ ***62.4***	*61.0*	-	~~70.7~~ *70.8*	1>	-	1=	1=	-	1<
LEAF 3 early	49 -61	14 - 15	2	*Mean* *Min* *Max*	*9.8* *6.7* *12.8*	***85.9*** **71.9** **100.0**	~~78.5~~ ***78.4*** ~~57.0~~ **56.7** **100.0**	~~72.3~~ *72.2* ~~44.5~~ 44.4 100.0	-	~~85.9~~ *85.8* ~~71.9~~ 71.6 100.0	1> 1=	-	2=	1> 1=	-	1< 1=
Germany																
PESSEV																
LEAF 1 very late	55	35	*1*	*Mean*	*8.8*	~~40.9~~ ***41.2***	~~45.5~~ ***45.1***	~~35.2~~ *35.0*	~~48.9~~ *48.6*		1=	1=	-	1=	1=	
LEAF 2 early	45	15	*1*	*Mean*	*5.2*	~~59.6~~ ***58.7***	~~63.5~~ ***63.3***	~~63.5~~ *62.6*	~~65.4~~ *65.8*	-	1=	1=		1=	1=	-
LEAF 2 late	61	31	*1*	*Mean*	*5.6*	~~51.8~~ ***52.6***	~~60.7~~ ***61.7***	~~58.9~~ *59.0*	~~60.7~~ *61.2*		1=	1=		1=	1=	
LEAF 2 very late	55-61	35-42	*2*	*Mean* Min Max	*13.4* *8.7* *18.1*	~~49.2~~ ***48.9*** ~~26.0~~ **25.7** ~~72.4~~ **72.1**	~~61.6~~ ***62.0*** ~~37.0~~ **37.2** ~~86.2~~ **86.7**	~~45.3~~ *45.4* ~~18.2~~ 18.1 ~~72.4~~ 72.7	*25.7* ~~23.8~~ 23.6 ~~27.6~~ 27.7	-	2=	1> 1=	-	2=	1> 1=	-
LEAF3 very late	76	45	*1*	*Mean*	*5.3*	***100.0***	~~94.3~~ ***94.2***	~~58.5~~ *58.2*	~~83.0~~ *83.4*	-	1>	1>	-	1>	1=	-
PESINC																
LEAF 1 late	59	27	*1*	*Mean*	38.8	***100.0***	***100.0***	*9.8*	*100.0*		1>	1=	-	1>	1=	-
LEAF 2 late	59	27	*1*	*Mean*	71.3	***66.6***	***66.6***	*0*	*100.0*	-	1>	1<	-	1>	1<	-
LEAF 2 early	47	15	*1*	*Mean*	55.0	***100.0***	***100.0***	*100*	*100.0*		1=	1=	-	1=	1=	-
LEAF 3 early	47	15	*1*	*Mean*	73.8	***100.0***	***100.0***	*30.5*	*100.0*		1>	1=	-	1>	1=	-
Summary North-East and supporting trials																
LEAF1 very late	55-75	35-41	*2*	*Mean* Min Max	10.2 8.8 11.6	**60.0** **41.2** **78.8**	***57.3*** ***45.1*** ***69.4***	*52.6* *35.0* *70.2*	-	-	1> 1=	-	-	2=	-	-
LEAF2 early	45-49	15	*2*	*Mean* Min Max	5.4 5.2 5.5	***67.8*** ***58.7*** ***76.9***	***63.0*** ***62.7*** ***63.3***	*55.1* *47.5* *62.6*	-	-	1> 1=	-	-	1> 1=	-	-
LEAF2 late	61-81	31-34	*2*	*Mean* Min	6.2 5.6	***63.8*** ***52.6***	***69.7*** ***61.7***	*56.5* *54.0*	-	-	2=	-	-	2=	-	-

				Max	6.7	***75.0***	***77.6***	*59.0*								
LEAF2 very late	55-75	35-42	*3*	*Mean* Min Max	17.6 8.7 25.9	***56.3*** ***25.7*** ***72.1***	***62.1*** ***37.2*** ***86.7***	*50.6* *18.1* *72.7*	-	-	1> 2=	-	-	3=	-	-

[b]UTC: % infestation in untreated control at assessment date
EPC + MTC: Epoxiconazole + Metconazole

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter triticale in the North-East EPPO climatic zone. Also 5 trials conducted in Germany has been included to the overall calculation as support for the Polish registration. Taking into account all trials, CA3642 at 1,2-1,4 l/ha achieved moderate effectiveness after 2 applications, either in the early and late assessments. No significant differences between test and reference products were observed in the submitted trials.
Based on the above summary, it can be concluded that CA3642 at 1,2-1,4 l/ha in 2 applications is moderate effective for control SEPTTR in winter triticale in NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TTLWI – SEPTTR – South-East EPPO zone

Four trials from the South-East EPPO zone are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2-1.4 L/ha in winter triticale against SEPTTR. The trials were carried out in Romania (3 trials) and Hungary (1 trial) in 2019 and 2020. The first application took place at crop stage BBCH 32-37 and the second application was done 18-28 days later, at BBCH 39 - 61.

For pest severity, in 5 of 6 assessments the efficacy of the target dose rates of 1.2-1.4 L/ha CA3642 was near 100% or 100%. In the other assessment CA3642 gave 85.2% and 80.9% efficacy at the 1.4 and 1.2 L/ha rates respectively. In these assessments, the performance of tCA3642 was usually statistically equivalent to that of the reference products. In one assessment (LEAF1 very late), the performance of CA2702 and CA2445 was statistically significantly lower (Table 3.2-338) compared to CA3642.
In one assessment (LEAF2 very late), PRIAXOR was statistically significantly superior to CA3642 at both dose rates.

For pest incidence, in one of two assessments the performance of the test product and of the reference was distinctly lower in general, whilst in the other assessment CA3642 demonstrated high efficacy of 98-100%. In one assessment (LEAF1 late), CA3642 at both dose rates was statistically significantly superior to CA2445, and was statistically equivalent to the other reference products, and comparability was also observed in the other assessment.

The reduction of infestation was statistically significant compared to untreated control.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on winter triticale in the South-East EPPO zone.

Table 3.2-338: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI against SEPTTR – valid assessments – South-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type Rate**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445/ JOAO PTZ 250 g/L EC**	**PRIAXOR PCS + FLX* 225 g/L EC**	**NATIVO PRO 325 PTZ+TFS** 325 g/L SC**	**CA3642 at 1.4 L/ha compared to**				**CA3642 at 1.2 L/ha compared to**			
				Rate		**1.4 L/ha**	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.5 L/ha**	**1.0 L/ha**	**CA2702**	**CA2445**	**PRIAXOR**	**NATIVO PRO 325 SC**	**CA2702**	**CA2445**	**PRIAXOR**	**NATIVO PRO 325 SC**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**225 g PCS/ha + 112.5 g FLX/ha**	**175 g PTZ + 150 g TFS/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.5 L/ha**	**1.0 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.5 L/ha**	**1.0 L/ha**
Efficacy after 2 applications																			
PESSEV																			
LEAF1 late	44-46	26-28	2	*Mean* Min Max	*19.1* 18.9 19.2	***99.8*** **99.8** **99.8**	***99.7*** **99.7** **99.8**	*99.6* 99.5 99.6	-	-	*99.7* 99.6 99.7	2=	-	-	2=	2=	-	-	2=
LEAF1 very late	72	48	1	*Mean*	10	**100.0**	**100.0**	91.0	91.0	100.0	-	1>	1>	1=	-	1>	1>	1=	-
LEAF2 late	44-46	26-28	2	*Mean* Min Max	*25.7* 19.5 31.9	***99.4*** **99.3** **99.5**	***99.4*** **99.2** **99.5**	*99.2* 99.1 99.4	-	-	*99.3* 99.1 99.5	2=	-	-	2=	2=	-	-	2=
LEAF2 very late	72	48	1	*Mean*	33	**85.2**	**80.9**	80.6	81.2	100.0	-	1=	1=	1<	-	1=	1=	1<	-
PESINC																			
LEAF1 late	56	28	1	*Mean*	98.8	**100.0**	**98.7**	98.7	83.5	-	96.2	1=	1>	-	1=	1=	1>	-	1=
LEAF2 late	56	28	1	*Mean*	98.8	**72.2**	**72.2**	67.1	60.7	-	69.6	1=	1=	-	1=	1=	1=	-	1=

[b]UTC: % infestation in untreated control at assessment date
* PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad
** TFS: Trifloxistrobin

Comments of zRMS:

4 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter triticale in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high effectiveness with results >90% after 2 applications, either in the early and late assessments. Similar effect or slight inferior were visible for the reference products. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Summary of data on SEPTTR in winter triticale

Data is presented from a total of 12 trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control SEPTTR in winter triticale. In almost all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control, with just 1 exception at one of the proposed dose rates. This was observed where either a single application or two applications were made.

In the majority of assessments, the efficacy of CA3642 at either of the proposed dose rates was statistically equivalent to that of the authorised reference products. In some instances CA3642 provided significantly higher control, and on fewer occasions the efficacy was lower compared to some of the reference products.

In the presented datasets for SEPTTR there were no statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, however a consistent trend of increased disease control was generally observed.

The efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 26% to 100% for applications of CA3642 at 1.4 L/ha, and 37 % to 100 % for applications at 1.2 L/ha. In these trials disease severity ranged from 5.2 % to 18.1 %, incidence from 38.8 % to 73.8 %.

The efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early, - late or very late assessments ranged from 71% to 100% for applications of CA3642 at 1.4 L/ha, and 57 % to 100 % for applications at 1.2 L/ha. In these trials disease severity ranged from 5.5 % to 25.9 %.

The efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 72% to 100% for applications of CA3642 at 1.4 L/ha, and 72 % to 100 % for applications at 1.2 L/ha. In these trials disease severity ranged from 10% to 33 %. In one trial, incidence was 98.8 %

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of SEPTTR in winter triticale.

Winter triticale (TTLWI) – Brown rust of winter triticale (PUCCRE (*Puccinia recondita*)

No data were available to support the target dose of CA3642 against *Puccinia recondita* on winter triticale in the Maritime, North-East and South-East EPPO zone. However, the species *Puccinia recondita* is also the causal agent of brown rust on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on winter triticale from the robust dataset presented for the closely related crop winter wheat.

The dataset presented in – **Winter wheat (TRZAW) /** *Puccinia triticina* **(PUCCRT/PUCCRE)** – showed that an overall trend can be observed whereby sufficient efficacy was observed with an applied dose rate ranging from 1.2 L/ha to 1.4 L/ha. Also, this trend appears stronger as the disease pressure increases and the closer the observation is to harvest. For these rates of 1.2 and 1.4 L/ha it was

often observed that the performance of the product was statistically equivalent or very comparable. Therefore, it is envisaged that in most instances applications of 1.2 L/ha will be sufficient for the control of *Puccinia triticina* on triticale but in case of heavy infestation, 1.4 L/ha may be more adequate to obtain higher disease control on winter triticale.
For wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented above, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control *Puccinia recondita* on winter triticale in the Maritime, North-East and South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Puccinia recondita* in winter triticale in any EPPO climatic zone. The cMSs are kindly asked consider this use on national level. This use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

Winter triticale (TTLWI) – Leaf blotch of cereals (RHYNSE - *Rhynchosporium secalis*)

A total of two trials were carried out in 2020 to evaluate the efficacy of CA3642 for the control of leaf blotch (RHYNSE) in winter triticale in the Maritime EPPO zone (2 trials in Germany).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trial valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone.
To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO one data is lacking.

TTLWI – RHYNSE – Maritime EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against RHYNSE in the Maritime EPPO zone. Trials were carried out in Germany in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 19-30 days later, at BBCH 45-49.

In one trial, the efficacy of 1.2-1.4 L/ha of CA3642 was statistically significantly better than the tested reference products. The level of control was good or acceptable respectively.

In the second trial, the performance of the higher dose rate of CA3642 (~~92.5~~ 92.9%) was numerically better than the reference standards and the lower rate of CA3642. There were no significant differences in efficacy among CA3642 or the reference products

Overall, CA3642 applied at both dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all three presented leaf levels (L2 and L3).

The reduction of infestation was statistically significant compared to untreated control.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Rhynchosporium secalis* on winter triticale in the Maritime EPPO zone.

Table 3.2-339: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI against RHYNSE – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type Rate**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF 2 very late	61	42	1	*Mean*	*4.7*	~~*85.1*~~ ***84.7***	~~*80.9*~~ ***81.8***	~~*57.4*~~ *58.2*	~~*59.6*~~ *59.5*	1>	1>	1>	1>
LEAF 3 early	45	15	1	*Mean*	*5.3*	~~*92.5*~~ ***92.9***	~~*83.0*~~ ***83.2***	~~*88.7*~~ *89.2*	~~*83.0*~~ *82.3*	1=	1=	1=	1=

[b]UTC: % infestation in untreated control at assessment date

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Rhynchosporium secalis* in winter triticale in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved good results of 81,8-92,9% after 2 applications, in the early and very late assessments. The reference products were significant inferior compared to the test product in 1 out of 2 trials. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TTLWI – RHYNSE – North-East EPPO zone

To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO one data is lacking.

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against RHYNSE in the Maritime EPPO zone. Trials were carried out in Germany in 2019 and 2020. The first application took place at crop stage BBCH 31 and the second application was done 19-30 days later, at BBCH 45-49.

In one trial, the efficacy of 1.2-1.4 L/ha of CA3642 was statistically significantly better than the tested reference products. The level of control was good or acceptable respectively.

In the second trial, the performance of the higher dose rate of CA3642 (~~92.5~~ 92.9%) was numerically better than the reference standards and the lower rate of CA3642. There were no significant differences in efficacy among CA3642 or the reference products.

The reduction of infestation was statistically significant compared to untreated control.

Overall, CA3642 applied at both dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all three presented leaf levels (L2 and L3).

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Rhynchosporium secalis* on winter triticale in the North-East EPPO zone.

Table 3.2-340: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI against RHYNSE – valid assessments – supporting trials from Maritime EPPO zone (Germany)

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type Rate**	**UTC**[b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
						1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications													
LEAF 2 very late	61	42	1	*Mean*	*4.7*	~~*85.1*~~ ***84.7***	~~*80.9*~~ ***81.8***	~~*57.4*~~ *58.2*	~~*59.6*~~ *59.5*	1>	1>	1>	1>
LEAF 3 early	45	15	1	*Mean*	*5.3*	~~*92.5*~~ ***92.9***	~~*83.0*~~ ***83.2***	~~*88.7*~~ *89.2*	~~*83.0*~~ *82.3*	1=	1=	1=	1=

[b]UTC: % infestation in untreated control at assessment date

Comments of zRMS:

No efficacy trials were carried out to control *Rhynchosporium secalis* in winter triticale in the North-East EPPO climatic zone. 2 efficacy trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved good results of 81,8-92,9% after 2 applications, in the early and very late assessments. The reference products were significant inferior compared to the test product in 1 out of 2 trials. No results after 1 application were available. Limited number of trials was available in the NE zone but an extrapolation from winter or spring barley is possible for this use.
Based on the above summary, it can be concluded that CA3642 at 1,2-1,4 l/ha in 2 applications is effective for control RHYNSE in winter triticale in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TTLWI – RHYNSE – South-East EPPO zone

No data were available to support the efficacy claim of CA3642 against *Rhynchosporium secalis* on winter triticale in South-East EPPO zone. However, the species *Rhynchosporium secalis* is also the causal agent of leaf blotch on barley and rye. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on winter triticale from the robust dataset presented for the closely related crops winter and spring barley as well.

The dataset presented in – **Winter barley (HORVW) / *Rhynchosporium secalis* (RHYNSE/RHYNSP)** and **Spring barley (HORVS) / *Rhynchosporium secalis* (RHYNSE)** – showed that sufficient efficacy of the dose rates from 1.0 L/ha is achieved. For the rates of 1.0 L/ha it was often observed that the performance of the product was statistically equivalent or superior to the tested reference standards and achieved adequate control of *Rhynchosporium secalis* on winter **and spring** barley.

For winter barley, in all trial assessments across all EPPO zones applications of CA3642 at the dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from the dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control *Rhynchosporium secalis* on winter triticale in the South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Rhynchosporium secalis* in winter triticale in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Summary of data on RHYNSE in winter triticale

Data is presented from a total of two trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control RHYNSE in winter triticale. In all trial assessments applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control.

The efficacy obtained from applications of CA3642 from either dose rate was at least comparable or better to that observed from applications of the reference products across the EPPO zones. In the Maritime EPPO zone significant differences in efficacy between CA3642 or the reference products was observed for few assessments.

In the presented datasets for RHYNSE there were no statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, although on occasions an increase in disease control was observed.

The efficacy in the Maritime EPPO zone at early or late assessments ranged from 85% to 92.5% for applications of CA3642 at 1.4 L/ha, and 81% to 83% for applications at 1.2 L/ha. In these trials disease severity ranged from 4.7% to 5.3%.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of RHYNSE in winter triticale.

Winter triticale (TTLWI) – Stripe rust of winter triticale (PUCCST - *Puccinia striiformis*)

No data were available to support the target dose of CA3642 against *Puccinia striiformis* on winter triticale in the Maritime, North-East and South-East EPPO zones. However, the species *Puccinia striiformis* is also the causal agent of stripe rust on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on winter triticale from the robust dataset presented for the closely related crop winter wheat.

The dataset presented in – **Winter wheat (TRZAW) /** *Puccinia striiformis* **(PUCCST)** – showed that an overall trend can be observed whereby sufficient efficacy was observed with an applied dose rate ranging from 1.2 L/ha to 1.4 L/ha. Also, this trend appears stronger as the disease pressure increases and the closer the observation is to harvest. For these rates of 1.2 and 1.4 L/ha it was often observed that the performance of the product was statistically equivalent or very comparable. Therefore, it is envisaged that in most instances applications of 1.2 L/ha will be sufficient for the control of *Puccinia striiformis* on triticale but in case of heavy infestation, 1.4 L/ha may be more adequate to obtain higher disease control on winter triticale.

For winter wheat, in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented above, CA3642 at 1.2-1.4 L/ha is the minimum effective dose to control *Puccinia striiformis* on winter triticale in the Maritime, North-East and South-East EPPO zones.

Comments of zRMS: No efficacy trials were carried out to control of *Puccinia striiformis* in winter triticale in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

Winter triticale (TTLWI) – Powdery mildew of cereals (ERYSGR - *Blumeria graminis*)

A total of 4 trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 for the control of Powdery mildew of cereals (ERYSGR) in winter triticale in the Maritime (2 trials) and South-East (2 trials) EPPO zones.
In one of the trials from Maritime EPPO zone, Powdery mildew of wheat (ERYSGT) was assessed, which is the wheat specific taxonomical specification of ERYSGR. As many triticale cultivars are highly susceptible to powdery mildew of wheat (ERYSGT), these diseases were combined for evaluation.

Trials from the Maritime EPPO zone were carried out in Germany (1 trial) and France (1 trial).

Trials from the South-East EPPO zone were carried out in Hungary (2 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO one data is lacking.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all four presented leaf levels (L1, L2, L3 and L4).

TTLWI – ERYSGR – Maritime EPPO zone

A total of two trials from the Maritime EPPO zone are available to evaluate the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against ERYSGR/ERYSGT. Trials were carried out in Germany and France in 2019.
The first application took place at crop stage BBCH 31-32 and the second application was done 16 - 30 days later, at BBCH 39-45.

For all assessments after two applications (Table 3.2-341), both the 1.2 and 1.4 L/ha dose rate demonstrate excellent to good control against ERYSGR (~~91.2~~ 90.6-100%). The reduction of infestation was statistically significant compared to untreated control. Compared to reference standard CA2702, the performance of the test product was significantly better in one assessment, and numerically higher in 3 assessments for both intended dose rates. For the other reference standard CA2445 the performance of CA3642 was statistically equivalent in all six assessments.

For one application, the evaluated efficacy of the 1.2 and 1.4 L/ha dose rate CA3664 and the reference standards was equivalent. The reduction of infestation was statistically significant compared to untreated control.

Table 3.2-341: Summary - Efficacy of CA3642 against ERYSGR in winter triticale – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445/JOAO PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha**	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**CA2702**	**CA2445/ JOAO**	**CA2702**	**CA2445/ JOAO**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**0.8 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**0.8 L/ha**
Efficacy after 2 applications													
LEAF 1 very late	58	42	1	*Mean*	*5.7*	***~~91.2~~ 90.6***	***~~96.5~~ 97.2***	*~~73.7~~ 73.9*	*~~86.0~~ 86.7*	1=	1=	1=	1=
LEAF 2 late	61	31	1	*Mean*	*5.5*	***100.0***	***100.0***	*100.0*	*100.0*	1=	1=	1=	1=
LEAF 2 very late	58	42	1	*Mean*	*11.3*	***~~99.1~~ 99.4***	***~~99.1~~ 99.0***	*~~66.4~~ 66.5*	*~~95.6~~ 96.0*	1=	1=	1=	1=
LEAF 3 early	30-45	14-15	2	*Mean*	*4.8*	***100.0***	***100.0***	*~~74.4~~ 74.3*	*100.0*	2=	2=	2=	2=
				Min	4.1	**100.0**	**100.0**	~~48.8~~ 48.6	100.0				
				Max	5.5	**100.0**	**100.0**	100.0	100.0				
LEAF 4 early	30	14	1	*Mean*	*6.6*	***100.0***	***100.0***	*~~43.9~~ 44.5*	*100.0*	1>	1=	1>	1=
Efficacy after 1 application													
LEAF 4 late	30	-	1	*Mean*	*10.2*	***100.0***	***100.0***	*~~95.1~~ 95.4*	*100.0*	1=	1=	1=	1=

[b]UTC: % infestation in untreated control at assessment date

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Blumeria graminis* in winter triticale in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high efficacy with results of >90% after 2 applications, in the early and late assessments. The test product is also very effective after 1 application (100% after 30 DAA in 1 trial). No significant differences between CA3642 and the reference products were observed. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Luxembourg, Ireland, Northern Ireland and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

TTLWI – ERYSGR – North-East EPPO zone

To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO one data is lacking.

One trial from the Maritime EPPO zone is available to evaluate the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against ERYSGR. The trial was carried out in Germany in 2019.
The first application took place at crop stage BBCH 31-32 and the second application was done 16 - 30 days later, at BBCH 39-45.

In this trial, Powdery mildew of wheat (ERYSGT) was assessed, which is the wheat specific taxonomical specification of ERYSGR. As many triticale cultivars are highly susceptible to powdery mildew of wheat (ERYSGT), these diseases were combined for evaluation.

For all assessments

Table 3.2-342), for both one and two applications, evaluated efficacy was equivalent for CA3642 and all reference standards. The reduction of infestation was statistically significant compared to untreated control.

Table 3.2-342: Summary - Efficacy of CA3642 against ERYSGR in winter triticale – supporting trial from Maritime EPPO zone (Germany)

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445/JOAO PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		**1.4 L/ha**	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**CA2702**	**CA2445/JOAO**	**CA2702**	**CA2445/JOAO**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**0.8 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**0.8 L/ha**
Efficacy after 2 applications													
LEAF 2 late	61	31	1	*Mean*	*5.5*	***100.0***	***100.0***	*100.0*	*100.0*	1=	1=	1=	1=
LEAF 3 early	45	15	1	*Mean*	*5.5*	***100.0***	***100.0***	*100.0*	*100.0*	1=	1=	1=	1=
Efficacy after 1 application													
LEAF 4 late	30	30	1	*Mean*	*10.2*	***100.0***	***100.0***	~~*95.1*~~ *95.4*	*100.0*	1=	1=	1=	1=

[b]UTC: % infestation in untreated control at assessment date

Comments of zRMS:

No efficacy trials were carried out to control of *Blumeria graminis* in winter triticale in the North-East EPPO climatic zone. 1 efficacy trial conducted in Germany has been included to the overall calculation as support for the Polish registration. Full effectiveness was visible after application on CA3642 at 1,2-1,4 l/ha after 1 and 2 applications, in the early and late assessments. Similar effect has been noted for the reference products. Limited number of trials was available in NE zone but an extrapolation from winter wheat is possible.
Based on the above summary, it can be concluded that CA3642 at 1,2-1,4 l/ha in 1-2 applications is effective for control ERYSGR in winter triticale in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

TTLWI – ERYSGR – South-East EPPO zone

Two trials from the South-East EPPO zone are available to evaluate the efficacy of 1.2-1.4 L/ha of CA3642 applied up to two times in winter triticale against ERYSGR. The trials were carried out in Hungary in 2019. The first application took place at crop stage BBCH 31 - 37 and the second application was done 17 - 18 days later, at BBCH 43 - 59.

All assessments on each leaf stage (L1 to L4) demonstrate excellent efficacy of 1.2-1.4 L/ha of CA3642 against ERYSGR and a statistically significant reduction of infestation (Table 3.2 343) compared to the untreated control. Compared to reference standard CA2702, the performance of the test product was significantly better; for the other reference standards, the performance was comparable.

The reduction of infestation was statistically significant compared to untreated control.

Table 3.2-343: Summary - Efficacy of CA3642 against ERYSGR in winter triticale – South-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX** 225 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**PRIAXOR 1.5 L/ha**
Efficacy after 2 applications																
LEAF1 very late	64	47	1	*Mean*	11.7	~~97.4~~ **97.1**	~~98.3~~ **98.5**	64.1		~~97.4~~ 97.8	1>		1=	1>		1=
LEAF2 very late	57-64	40	2	*Mean*	*17.7*	***100.0***	***99.6***	*~~72.1~~ 72.5*		*100.0*	1>		1=	1>		1=
				Min	*5.5*	**100.0**	**99.2**	~~64.2~~ 64.3		100.0	1=	1=	1=	1=	1=	1=
				Max	*27.0*	**100.0**	**100.0**	~~80.0~~ 80.7		100.0						
LEAF2 very late	64	40	1	*Mean*	*8.7*	***100.0***	***100.0***	*80.0*	*100.0*	*100.0*	1>	1=	1=	1>	1=	1=
LEAF3 very late	57-64	40	2	*Mean*	*24.2*	***100.0***	***~~99.8~~ 99.9***	*~~22.7~~ 22.6*		*100.0*	2>		2=	2>		2=
				Min	*22.5*	**100.0**	~~99.6~~ **99.7**	~~9.8~~ 9.7		100.0						
				Max	*25.8*	**100.0**	**100.0**	~~35.7~~ 35.5		100.0						
LEAF3 very late	64	40	1	*Mean*	*22.5*	***100.0***	***100.0***	*9.8*	*100.0*	*100.0*	1>	1=	1=	1>	1=	1=
LEAF4 early	32	15	1	*Mean*	*5.5*	***100.0***	***100.0***	*~~38.2~~ 38.6*		*100.0*	1>		1=	1>		1=

UTC: % infestation in untreated control at assessment date
** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Rhynchosporium secalis* in winter triticale in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved very high effectiveness with results of 100% after 2 applications, in the early and late assessments. No significant differences between test and reference products have been observed in the submitted trials. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to extrapolate trials from MAR zone and consider this use on national level.*

**Accordance to table 3.2-12, triticale has minor status in Romania. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Summary of data on ERYSGR in winter triticale

A total of 4 trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 for the control of Powdery mildew of cereals (ERYSGR) in winter triticale in the Maritime (2 trials) and South-East (2 trials) EPPO zones.

The efficacy obtained from applications of CA3642 from either dose rate was at least comparable or better to that observed from applications of the reference products across the EPPO zones. In both EPPO zones significant differences in efficacy between CA3642 or the reference products were observed for few assessments.

In the presented datasets for ERYSGR there were no statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, however, a numerical increase in disease control was observed in two trials.

The efficacy in the Maritime EPPO zone at early or late assessments ranged from 91% to 100% for applications of CA3642 at 1.4 L/ha, and 97% to 100% for applications at 1.2 L/ha. In these trials disease severity ranged from 4.1% to 11.3%.

The efficacy in the South-East EPPO zone at early or late assessments ranged from 97% to 100% for applications of CA3642 at 1.4 L/ha, and 98% to 100% for applications at 1.2 L/ha. In these trials disease severity ranged from 5.5% to 26.5%.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of ERYSGR in winter triticale.

Winter triticale (TTLWI) – Glume blotch (LEPTNO - *Parastagonospora nodorum*)

No data were available to support the use of CA3642 against *Parastagonospora nodorum* on winter triticale. However, *Parastagonospora nodorum* is the causal agent of glume blotch on triticale although this disease is most closely associated with wheat. Existing authorisations for prothioconazole products (Proline/CA2445) have a similar dose rate for this pathogen in winter wheat, which indicates that performance is comparable between the pathogen/crop pairs. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on triticale based on the experience from the closely related crop winter wheat.

On triticale, glume blotch remains an occasional disease and depending on climatic conditions, will develop in a heterogeneous way in the crop. Finally, since in the fields a complex of disease is often observed instead of a single disease and since the datasets included in this dossier showed that the rates of 0.6-0.8 l/ha generally gave adequate disease control, it is supposed that the same dose range will be acceptable to control *Parastagonospora nodorum* on triticale in all EPPO zones.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Parastagonospora nodorum* on winter triticale in all EPPO zones.

Comments of zRMS:

No efficacy trials were carried out to control of *Parastagonospora nodorum* in winter triticale in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

Winter triticale (TTLWI) – Green leaf area

A total of 13 trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 in terms of green leaf area in winter triticale in the Maritime (7 trials), North-East (2 trials) and South-East (4 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in France (2 trials) and Germany (5 trials).
Trials from the North-East EPPO zone were carried out in Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials) and Romania (2 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Polish national guidance, data is also presented from neighbouring countries in support of the evaluation.

In the majority of cases CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) showed comparable or better retention of green leaf area compared to the used reference standard on the plant or the presented leaf levels (L1). In a few instances the GLA was lower compared to the reference products, but more commonly CA3642 was equivalent or better.

TTLWI – Green leaf area – Maritime EPPO zone

In six trials from the Maritime EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in France (1 trial) and Germany (5 trials) between 2019 and 2020.
The first application took place at crop stage BBCH 30-37 and the second application was done 15-32 days later, at BBCH crop stage between 39 and 51.

Efficacy in terms of green leaf area was assessed on the whole plant at 27-47 DA-B. In six of the trials SEPPTR pathogens were present. In addition, RHYNSE (2 trials) and ERSYGR (2 trials) were observed.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased in the majority of trials by 5.9-150 % compared to the untreated control. However, in one trial green leaf area decreased by 4% in one trial numerically for the 1.2 l/ha rate.
The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha was statistically significant compared to the untreated control in four of the seven trials.

Compared to the reference standards, the performance of CA3642 applied at 1.2-1.4 L/ha was almost comparable. In 1 trial CA3642 applied at 1.4 l/ha gave significantly higher GLA compared to CA2702. In 1 other trial CA2445 gave significantly higher GLA compared to CA3642 and CA2702 gave significantly higher GLA compared to the lower rate of CA3642.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in winter triticale affected by a range of pathogens in the Maritime EPPO zone.

Table 3.2-344: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI assessed as green leaf area – valid assessments – Maritime EPPO zone

Part rated assm. timing	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445/JOAO PTZ 250 g/L EC	CA2702 AZX 250 g/L SC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	CA2445/JOAO 0.8 L/ha	CA2702 0.8 L/ha	CA2445/JOAO 0.8 L/ha	CA2702 0.8 L/ha
PLANT late	59-61	27-31	2	*Mean*	*18.2*	***244.8***	***231.3***	*237.9*	*206.9*	2=	1>	2=	2=
				Min	17.5	**239.4**	**219.7**	233.0	199.5		1=		
				Max	18.8	**250.3**	**242.9**	242.9	214.3				
PLANT very late	52-76	35-47	5	*Mean*	*64.9*	***114.4***	***116.4***	*119.9*	*118.2*	4=	5=	4=	4=
				Min	25.5	**105.9**	**96.1**	111.8	108.6	1<		1<	1<
				Max	85.0	**122.6**	**136.0**	137.3	129.4				

UTC: % green leaf area in untreated control at assessment date

Comments of zRMS:

The mean green leaf area increased by 144,8% after 2 applications of CA3642 at 1,4 l/ha and 131,3% at 1,2 l/ha in 2 out of 7 efficacy trials. In very late assessment, test product caused an increase in GRNARE by 14,4% and 16,4%, for both doses respectively. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

TTLWI – Green leaf area – North-East EPPO zone

In two trials from the North-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Poland (2 trials) in 2019.
The first application took place at crop stage BBCH 30-32 and the second application was done 34-47 days later, at BBCH 55-57.

To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO one data is lacking.

Thus, the trials from Germany are considered for evaluation.

Efficacy in terms of green leaf area was assessed on the whole plant at 34-41 DA-B. In each of these North-East trials just a single disease was present (SEPTTR).
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 8-31 % compared to the untreated control. The mean increase of green leaf area induced by CA3642 at 1.4 L/ha was numerically higher than for 1.2 L/ha.

No statistically significant difference compared to the untreated control or reference standards was assessed for any assessment in the two trials.

In addition, supporting trials from Germany were available to assess the effect of two applications of CA3642 at 1.2-1.4 L/ha on the green leaf area.

Efficacy in terms of green leaf area was assessed on the whole plant at 27-45 DA-B. In five of the trials SEPPTR pathogens were present. In addition, RHYNSE (n=2) and ERSYGR (n=1) were observed.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased in the majority of trials by 5.9-150 % compared to the untreated control. However, in one trial green leaf area decreased by 4% in one trial numerically for the 1.2 l/ha rate.
The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha was statistically significant compared to the untreated control in three of the five trials.

Compared to the reference standards, the performance of CA3642 applied at 1.2-1.4 L/ha was almost comparable. In 1 trial CA3642 applied at 1.4 l/ha gave significantly higher GLA compared to CA2702. In 1 other trial CA2445 gave significantly higher GLA compared to CA3642 and CA2702 gave significantly higher GLA compared to the lower rate of CA3642.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in triticale affected by a range of pathogens in the North-East EPPO zone.

Table 3.2-345: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI assessed as green leaf area – valid assessments – North-East EPPO zone

Part rated assm. timing	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**OSIRIS 65 EC EPC +MTC* 65 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55g MTC/ha**	**0.8 L/ha 200 g AZX/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**
Plant	75-81	34-41	2	Mean Min Max	*26.3* 16.3 36.3	***131.0*** **124.0** **138.0**	***107.9*** **93.1** **122.7**	*124.1* 110.2 138.0		2=	2=	2=	2=

UTC: % green leaf area in untreated control at assessment date
*EPC + MTC: Epoxiconazole + Metconazole

Table 3.2-346: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI assessed as green leaf area – valid assessments – supporting trials from Maritime EPPO zone (Germany)

Part rated assm. timing	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2445/JOAO PTZ 250 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**CA2445/JOAO 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445/JOAO 0.8 L/ha**	**CA2702 0.8 L/ha**
PLANT late	59-61	27-31	2	*Mean* Min Max	*18.2* 17.5 18.8	***244.8*** **239.4** **250.3**	***231.3*** **219.7** **242.9**	*237.9* 233.0 242.9	*206.9* 199.5 214.3	2=	1> 1=	2=	2=
PLANT very late	52-76	35-47	3	*Mean* Min Max	*65.2* *25.5* *85.0*	***109.8*** **105.9** **111.8**	***106.6*** **96.1** **136.0**	*120.3* 111.8 137.3	*116.6* 108.6 129.4	2= 1<	3=	2= 1<	2= 1<

[b] UTC: % green leaf area in untreated control at assessment date

Comments of zRMS:

The mean green leaf area increased by 31% after 2 applications of CA3642 at 1,4 l/ha and 7,9% at 1,2 l/ha in 2 efficacy trials conducted in NE zone. Also in trials conducted in Germany, an increase of GRNARE was visible (6,6-44,8%). No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Positive impact on green leaf area has been noted.

TTLWI – Green leaf area – South-East EPPO zone

In four trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Hungary (2 trials) and Romania (2 trials) in 2019 (n = 3) and 2020 (n = 1).
The first application took place at crop stage BBCH 31-37 and the second application was done 17-24 days later, at BBCH between 39 and 59.

Efficacy in terms of green leaf area was assessed in four trials on the whole plant at 26-48 DA-B. In all trials, one single pathogen was present, ERYSGR or SEPTTR respectively.

Where the whole plant was assessed, after two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area averaged over 2 trials increased by 70%-120% respectively compared to the untreated control. The increase was statistically significant in 1 of the 2 trials. In 1 of these trials there were no significant differences among CA3642 applied at either rate and the reference standards. In the other trial CA3642 applied at 1.4 l/ha gave significantly higher GLA compared to the 1.2 l/ha rate and compared to CA2702 and CA2445, and in this trial also PRIAXOR gave significantly higher GLA compared to all other treatments.

Where the assessment was done on LEAF 1, the increase was 440% for CA3642 applied at 1.4 l/ha and 405% when applied at 1.2 l/ha. The increase was statistically significant in both trials. In both of these trials also, the GLA from CA3642 at either rate was significantly higher compared to both of the reference standards. In 1 of these trials the 1.4 l/ha rate gave significantly higher GLA compared to the 1.2 l/ha rate.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in winter triticale affected by a range of pathogens in the South-East EPPO zone.

Table 3.2-347: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in TTLWI assessed as green leaf area – valid assessments – South-East EPPO zone

Part rated assm. timing	DA-A	DA-B	No. of trials	Name Conc Type Unit	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		PRIAXOR PCS + FLX* 225 g/L EC	CA2702 AZX 250 g/L SC	NATIVO PRO 325 PTZ+TFS** 325 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.4 L/ha compared to				CA3642 at 1.2 L/ha compared to			
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.5 L/ha** **225 g PCS/ha + 112.5 g FLX/ha**	**0.8 L/ha** **200 g AZX/ha**	**1.0 L/ha** **175 g PTZ + 150 g TFS/ha**	**0.8 L/ha** **200 g PTZ/ha**	**PRIA-XOR** **1.5 L/ha**	**CA 2702** **0.8 L/ha**	**NA-TIVO PRO 325** **1.0 L/ha**	**CA2445** **0.8 L/ha**	**PRIA-XOR** **1.5 L/ha**	**CA 2702** **0.8 L/ha**	**NA-TIVO PRO 325** **1.0 L/ha**	**CA2445** **0.8 L/ha**
LEAF 1	44-46	26-28	2	*Mean*	*11.8*	***540.3***	***504.7***		*427.1*	*391.1*			2>	2>			1>	2>	
				Min	11.8	**529.7**	**498.3**		371.2	296.6							1=		
				Max	11.8	**550.8**	**511.0**		483.1	485.6									
PLANT	64-72	47-48	2	*Mean*	*30.0*	***220.0***	***170.0***	*270.0*	*160.0*		*238.0*	1=	1=			1=	2=		
				Min	10.0	**140.0**	**140.0**	140.0	120.0		238.0	1<	1>			1<			
				Max	50.0	**300.0**	**200.0**	400.0	200.0		238.0								
			1	*Mean*	*50.0*	***140.0***	***140.0***	*140.0*	*120.0*	*100.0*				1=				1=	
			1	*Mean*	*10.0*	***300.0***	***200.0***	*400.0*	*200.0*		*238.0*				1>				1<

UTC: % green leaf area in untreated control at assessment date
* PCS + FLX: Pyraclostrobin + Fluxapyroxad
** TFS - Trifloxistrobin

Comments of zRMS:

The mean green leaf area increased by 120% after 2 applications of CA3642 at 1,4 l/ha and 70% at 1,2 l/ha if we consider the whole plant. Significant increase was visible in case of assessment of L1 with results of 440,3% (1,4 l/ha) and 404,7% (1,2 l/ha). No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Rye (SECCW)

Winter Rye (SECCW) – Septoria leaf blotch (SEPTTR - *Zymoseptoria tritici*)

A total of six trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Septoria leaf blotch (SEPTTR) in rye in the Maritime (2 trials), North-East (1 trial) and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Great Britain (2 trials).
The trial from the North-East EPPO zone was carried out in Poland.
Trials from the South-East EPPO zone were carried out in Romania (2 trials) and Hungary (1 trial).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all three presented leaf levels (L1, L2 and L3).

SECCW – SEPTTR – Maritime EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the Maritime EPPO zone. Both trials were carried out in Great Britain in 2019 and 2021.
The first application took place at crop stage BBCH 32-33 and the second application was done 16-35 days later, at BBCH 45-59.

Table 3.2-348: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against SEPTTR – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**PROLINE 275 PTC 275 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.72 L/ha 198 g PTZ/ha**	**CA2702 0.8 L/ha**	**PROLINE 275 0.72 L/ha**	**CA2702 0.8 L/ha**	**PROLINE 275 0.72 L/ha**
Efficacy after 2 applications													
LEAF1 early	31	15	1	*Mean*	14.6	*62.3*	*~~54.8~~ 54.6*	*~~37~~ 36.7*	*~~61.6~~ 61.7*	1=	1=	1=	1=
LEAF2 early	31-50	15	2	*Mean* Min Max	*31.1* 5 57.1	*~~77.5~~ 77.4* 73 ~~82~~ 81.7	*~~72~~ 72.6* 64.1 ~~80~~ 81.0	*~~41.2~~ 41.0* 20.5 ~~62~~ 61.4	*74.7* ~~73.4~~ 73.3 ~~76~~ 75.2	1> 1=	2=	1> 1=	2=
LEAF3 early	31	15	1	*Mean*	*90.7*	*52.9*	*51.9*	*26.9*	*51.1*	1>	1=	1>	1=
LEAF1 late	65-75	37-49	2	Mean Min Max	57.2 14.3 100	*~~71.8~~ 72.0* ~~71.3~~ 71.5 ~~72.3~~ 72.4	*73.6* ~~68.5~~ 68.4 78.7	*47.8* 41.8 53.9	*~~71.7~~ 71.8* ~~64.3~~ 64.4 79.1	2=	2=	1> 1=	2=
LEAF2 late	65-72	37-49	2	*Mean* Min Max	*64.2* 28.4 100	*~~61.4~~ 61.5* 58 ~~64.8~~ 64.9	*~~61~~ 60.9* 58.6 ~~63.4~~ 63.2	*~~35.4~~ 35.5* ~~16.2~~ 16.3 ~~54.6~~ 54.7	*~~53.8~~ 53.9* 49.7 58.1	2=	2=	2=	2=
Efficacy after 1 application													
LEAF3 early	16	0	1	*Mean*	*4.5*	*~~95.6~~ 96.6*	*~~68.9~~ 69.2*	*~~40~~ 39.5*	*~~86.7~~ 86.6*	1=	1=	1=	1=

UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.2-1.4 L/ha

At an early assessment date (15 DA-B) 55-62 % efficacy was observed in leaf level 1. In leaf level 2 mean efficacy of 72-78 % was observed and on leaf level 3 the efficacy was 52 and 53 %. Performance of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) and assessed at an early date was comparable to the reference PROLINE 275 with no statistically significant differences. Compared to CA2702, CA3642 applied at both rates performed better with statistically significant differences in two assessments.

At a later assessment date (37-49 DA-B) mean efficacy of 72-74 % was observed on leaf level 1. In leaf level 2 mean efficacy of 61 % was achieved with both dose rates. The efficacy achieved with both rates of CA3642 was comparable to the efficacy of PROLINE 275 with no statistically significant differences in all assessments. The other reference standard (CA2702) provided a generally lower control with a statistically significant difference in one assessment compared to CA3642 at 1.2 L/ha.

After one application of CA3642 applied at 1.2-1.4 L/ha

Efficacy after one application was assessed 16 days after application in one trial on leaf level 3.
Even though the infestation in the untreated check was below 5 % (4.5 %), this assessment is considered valid as the infestation increases throughout the trial period to up to 91 %. Already after the first application of CA3642 at 1.2-1.4 L/ha efficacy of 69-~~96~~ 97 % was observed.
The used reference standards achieved ~~40~~ 39.5 % (CA2702) and ~~86.7~~ 86.6 % (PROLINE 275), but no statistically significant differences were observed compared to CA3642 at both dose rates.

Overall, CA3642 applied at 1.2-1.4 L/ha achieved already after one application control levels of 69-96 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

At all assessments, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against SEPTTR was comparable to, or better than, that derived from applications of the authorised reference products. Although there were no statistical differences between the 2 proposed dose rates for CA3642, a general increase in efficacy was observed for the higher rate, which was more discernible in the assessment following a single application.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on rye in the Maritime EPPO zone.

Comments of zRMS:

Only 2 efficacy trials were conducted to control of *Zymoseptoria tritici* on winter rye in the Maritime EPPO climatic zone. Moderate level of control was presented after 2 applications of CA3642 at 1,2-1,4 l/ha, either in the early and late assessments. Also high result was noted after 1 application. The test product at 1,4 l/ha achieved mean efficacy of 96,6%, superior compared to the lower dose of 1,2 l/ha (96,6% vs 69,2%). Similar effect was visible in case of the reference product Proline 275. CA3642 was superior compared to CA2702. Due to limited number of trials, cMSs are kindly asked to consider this use on national level*.

**Accordance to table 3.2-12, rye has minor status in Belgium, Ireland, Luxembourg and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

SECCW – SEPTTR – North-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2

and 1.4 L/ha against SEPTTR in the North-East EPPO zone. The trial was carried out in Poland in 2020.
The first application took place at crop stage BBCH 37 and the second application was done 15 days later, at BBCH 57.

Table 3.2-349: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against SEPTTR – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC		CA2445 PTC 250 g/L EC	CA2702 AZX 250 g/L SC	OSIRIS 65 EC EPC + MTC** 65 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	OSIRIS 65 EC 2.0 l/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	OSIRIS 65 EC 2.0 l/ha
Efficacy after 2 applications																
LEAF1 early	30	15	1		10.6	~~74.5~~ 74.9	~~66~~ 65.6	~~89.6~~ 89.2	~~73.6~~ 73.9	~~77.4~~ 77.3	1=	1=	1=	1=	1=	1=
LEAF2 early	30	15	1		16.8	~~83.9~~ 84.1	~~82.1~~ 82.3	~~91.1~~ 91.2	~~91.1~~ 91.8	~~83.3~~ 83.6	1=	1=	1=	1=	1=	1=
LEAF3 early	30	15	1		7.3	~~95.9~~ 96.6	~~89~~ 89.3	~~94.5~~ 95.0	~~84.9~~ 85.5	~~91.8~~ 91.4	1=	1=	1=	1=	1=	1=
LEAF1 late	59	44	1		15.6	~~81.4~~ 81.3	~~83.3~~ 83.6	~~83.3~~ 83.4	~~85.3~~ 85.5	~~88.5~~ 88.3	1=	1=	1=	1=	1=	1=
LEAF2 late	59	44	1		17.9	74.9	76	~~82.1~~ 82.0	~~86.6~~ 86.5	~~70.4~~ 70.6	1=	1=	1=	1=	1=	1=
LEAF3 late	59	44	1		14.8	~~88.5~~ 88.3	93.2	~~89.2~~ 89.4	~~88.5~~ 88.6	~~89.2~~ 89.5	1=	1=	1=	1=	1=	1=
Efficacy after 1 application																
LEAF3 early	15	0	1		5.3	~~98.1~~ 98.4	~~92.5~~ 92.2	~~98.1~~ 97.4	~~94.3~~ 95.1	~~96.2~~ 96.5	1=	1=	1=	1=	1=	1=

UTC: % infestation in untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/l + Metconazole 27.5g/l

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
At an early assessment date (15 DA-B) 66-75 % efficacy was observed in leaf level 1. In leaf level 2 efficacy of 82-84 % was observed and on leaf level 3 the efficacy ranged between 89 and ~~96~~ 97%. Performance of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) and assessed at an early date was comparable to the used reference standards, CA2702, CA2445 and OSIRIS 65 EC with no statistically significant differences.

At a later assessment date (44 DA-B) efficacy of 81-83 % was observed on leaf level 1. In leaf level 2 efficacy of 75-76 % was observed and on leaf level 3 the efficacy ranged between ~~89~~ 88 and 93 %. Performance of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) and assessed at an early date was comparable to the used reference standards, CA2702, CA2445 and OSIRIS 65 EC with no statistically significant differences.

<u>After one application of CA3642 applied at 1.2-1.4 L/ha</u>
One assessment is available already from 15 days after the first application on leaf level 3.
Already after the first application of CA3642 at 1.2-1.4 L/ha efficacy of 93 and 98 % was observed. No statistically significant differences were observed between the efficacy of the used reference standards and the efficacy of CA3642 at both tested dose rates. This makes CA3642 a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

At all assessments, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. There were no statistically significant differences in disease reduction compared to that of the authorised reference products. Although there were no statistical differences between the 2 proposed dose rates for CA3642, generally higher efficacy was observed for the higher rate.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on rye in the North-East EPPO zone.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Zymoseptoria tritici* in winter rye in the North-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high effectiveness after 2 applications, either the early and late assessments. Also good results were presented after 1 application (>90%). No significant differences between test and reference products have been observed. However limited number of trials was available and an extrapolation from other cereals is not possible for this use in Poland. In conclusion, this use cannot be accepted.

SECCW – SEPTTR – South-East EPPO zone

Three trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against SEPTTR in the South-East EPPO zone. Trials were carried out in Romania (2 trials) and Hungary (1 trial) in 2019 and 2021.
The first application took place at crop stage BBCH 30-37 and the second application was done 19-30 days later, at BBCH 41-59.

Table 3.2-350: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against SEPTTR – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC		CA2445 PTC 250 g/L EC	CA2702 AZX 250 g/L SC	PRIAXOR ** 225 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	PRIAXOR 1.5 l/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	PRIAXOR 1.5 l/ha
Efficacy after 2 applications																
LEAF1 early	44	25	1		8.6	~~100~~ 99.9	~~100~~ 99.9	~~100~~ 99.5	~~98.8~~ 99.3	-	1=	1=		1=	1=	
LEAF1 late	60	38	1		5.9	~~96.6~~ 96.0	~~71.2~~ 71.9	-	~~91.5~~ 91.7	~~98.3~~ 97.9		1=	1=		1=	1=
LEAF2 late	60-77	38-47	2	Mean Min Max	21.4 34.7 8	62.4 43.8 81	~~59~~ 59.3 ~~36.3~~ 36.7 81.8	-	~~57.9~~ 57.7 ~~36.3~~ 35.9 79.5	-	1=	2=	1=	1=	2=	1=
			1		34.7	81	81.8	-	79.5	84.4		1=	1=		1=	1=
			1		8	43.8	~~36.3~~ 36.7	~~46.3~~ 46.9	~~36.3~~ 35.9	-	1=	1=		1=	1=	
LEAF3 late	60	38	1		56.1	71.1	62.2	-	~~66.5~~ 66.6	73.4		1=	1=		1=	1=

UTC: % infestation in untreated control at assessment date
** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

After two applications of CA3642 applied at 1.2-1.4 L/ha

At an early assessment date (25 DA-B) 100 % efficacy was observed in leaf level 1 after application of both dose rates. No differences, neither statistically significant nor numerically, were observed between treatments with CA3642 at both dose rates and the used reference standards.

At a later assessment date (38-47 DA-B) efficacy of ~~71~~ 72-~~97~~ 96 % was observed on leaf level 1. On leaf 2 mean efficacy of 59-62 % was observed. It should be noted that in one trial the overall efficacy, achieved by CA3642 as well as by all used reference standards was unexpectedly low (<50 %). This low efficacy might result from an atypical evolving disease pressure in this trial. On leaf level 1 the disease pressure decreased between 25 DA-B to 47 DA-B from 8.6 % to 2.7 %. Therefore, the result should not be overrated. In the other trial, both dose rates of CA3642 achieved efficacy of 81-82 %. On leaf level 3, the efficacy of CA3642 applied at 1.2 and 1.4 L/ha was 62 and 71 %, respectively. No statistically significant differences were observed in any assessment.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots. There were no statistically significant differences in disease reduction compared to any of the 3 different authorised reference products. No statistical differences were observed between the 2 proposed dose rates for CA3642, but overall higher efficacy was observed for the higher rate.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Zymoseptoria tritici* on rye in the South-East EPPO zone.

Comments of zRMS:

Only 3 efficacy trials were carried out to control of *Zymoseptoria tritici* in winter rye in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved moderate to high level of efficacy after 2 applications, in the early and late assessments. Significant superior results were visible on L1(>95%). Similar effect has been observed between test and reference products. No statistical differences have been noted. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Romania and Slovakia. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Summary of data on SEPTTR in rye

Data is presented from a total of six trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control SEPTTR in rye. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 from either dose rate was overall comparable to that observed from applications of the reference products across the EPPO zones. There were no statistically significant differences between the reference products and CA3642 in the datasets from the North-East and the South-East EPPO zones. In the Maritime EPPO zone some assessments showed a significant increase in efficacy from CA3642 compared to some reference products.

In the presented datasets for SEPTTR there were no statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, however a consistent trend of increased disease control was generally observed.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 52.9% to 95.6% for applications of CA3642 at 1.4 L/ha, and 51.9 % to 73.6 % for applications at 1.2 L/ha. In these trials disease severity ranged from 4.5 % to 100 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 74.5% to 98.1% for applications of CA3642 at 1.4 L/ha, and 66.0 % to 93.2 % for applications at 1.2 L/ha. In these trials disease severity ranged from 5.3% to 17.9 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 62.4% to 100% for applications of CA3642 at 1.4 L/ha, and 59.0 % to 100 % for applications at 1.2 L/ha. In these trials disease severity ranged from 5.9 % to 56.1 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of SEPTTR in rye.

Winter Rye (SECCW) – Brown rust of rye (PUCCRR/PUCCRE - *Puccinia recondita* f. sp. *recondita*)

A total of six trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of brown rust (PUCCRR) in rye in the Maritime (4 trials), North-East (1 trial) and South-East (1 trial) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (2 trials), Denmark (1 trial) and Great Britain (1 trial).
The trial from the North-East EPPO zone was carried out in Poland.
The trial from the South-East EPO zone was carried out in Hungary.

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trial valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Polish national guidance, data is also presented from neighbouring countries in support of the evaluation.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all three presented leaf levels (L1, L2 and L3).

SECCW – PUCCRR/PUCCRE – Maritime EPPO zone

A total of four trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRR in the Maritime EPPO zone. Trials were carried out in Germany (2 trials), Denmark (1 trial) and Great Britain (1 trial) between 2019 and 2020.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-20 days later, at BBCH 42-59.

Table 3.2-351: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against PUCCRR – valid assessments – Maritime EPPO zone

Leaf level assm. tim-ing	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC [b]**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**Summarized PTZ prod-ucts**	**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha** **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**200 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**Summarized PTZ prod-ucts**	**CA2702 0.8 L/ha**	**Summarized PTZ prod-ucts**	**CA2702 0.8 L/ha**
Efficacy after 2 applications													
~~LEAF 1 early~~	~~31~~	~~15~~	~~1~~	~~*Mean*~~	~~11~~	~~*82.6*~~	~~*72.7*~~	~~*74.5*~~	~~*58.2*~~	~~1=~~	~~1=~~	~~1=~~	~~1=~~
LEAF 1 late	62-74	42-55	3	*Mean* Min Max	37.3 5.4 100	*~~92.5~~ 92.4* 86.9 ~~100~~ 99.3	*~~92.7~~ 92.9* ~~89.1~~ 89.7 98.1	*~~84.4~~ 84.1* 73.4 ~~94.4~~ 93.7	*~~76~~ 76.2* 57.4 ~~92.6~~ 92.1	3=	2> 1=	3=	1> 2=
~~LEAF 2 early~~	~~31-38~~	~~15-24~~	~~2~~	~~*Mean*~~ ~~Min~~ ~~Max~~	~~7.8~~ ~~4.5~~ ~~11~~	~~*78.9*~~ ~~60~~ ~~97.8~~	~~*82.35*~~ ~~69.1~~ ~~95.6~~	~~*83*~~ ~~68.2~~ ~~97.8~~	~~*62.2*~~ ~~40~~ ~~84.4~~	~~2=~~	~~1>~~ ~~1=~~	~~2=~~	~~1>~~ ~~1=~~
LEAF 2 late	62-74	42-55	3	*Mean* Min Max	44.4 13.7 100	*~~92.9~~ 93.0* 87.7 99.2	*~~92.8~~ 92.9* 89.4 98.5	*~~85.7~~ 86.3* ~~75.2~~ 75.5 ~~96.9~~ 97.1	*~~68.4~~ 68.5* 23.5 ~~96.4~~ 96.6	1> 2=	2> 1=	1> 2=	1> 2=
~~LEAF 3 early~~	~~31-38~~	~~15-24~~	~~2~~	~~*Mean*~~ ~~Min~~ ~~Max~~	~~12.4~~ ~~8.4~~ ~~16.3~~	~~*82.6*~~ ~~69.9~~ ~~95.2~~	~~*80.4*~~ ~~65.6~~ ~~95.2~~	~~*75.9*~~ ~~61.3~~ ~~90.5~~	~~*66.2*~~ ~~47.9~~ ~~84.5~~	~~2=~~	~~2=~~	~~2=~~	~~2=~~
~~**Efficacy after 1 application**~~													
~~LEAF 1~~	~~16~~		~~1~~		~~3.1~~	~~*100*~~	~~*100*~~	~~*100*~~	~~*83.9*~~	~~1=~~	~~1=~~	~~1=~~	~~1=~~
~~LEAF 2~~	~~16~~		~~1~~		~~15.1~~	~~*69.5*~~	~~*88.7*~~	~~*89.4*~~	~~*73.5*~~	~~1<~~	~~1=~~	~~1=~~	~~1=~~
~~LEAF 3~~	~~14-16~~		~~2~~	~~*Mean*~~ ~~Min~~ ~~Max~~	~~15.7~~ ~~2.8~~ ~~28.6~~	~~*91.8*~~ ~~83.6~~ ~~100~~	~~*79.1*~~ ~~72.4~~ ~~85.7~~	~~*88.9*~~ ~~85.7~~ ~~92~~	~~*61*~~ ~~50~~ ~~72~~	~~2=~~	~~2=~~	~~2=~~	~~2=~~

[b] UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.2-1.4 L/ha

~~At an early assessment date (15-24 DA-B) 73-84 % efficacy was observed in leaf level 1. In leaf level 2 mean efficacy of 79-82 % was observed and on leaf level 3 the mean efficacy ranged between 80 and 83 %. Performance of CA3642 applied at the two dose rates (1.2 and 1.4 L/ha) and assessed at an early date was comparable to the used reference standards, CA2702 and one prothioconazole containing product (either CA2445 or PROLINE 275) in the majority of assessments. In one assessment (24 DA-B) on leaf level 2, the efficacy of CA3642 at both dose rates was better compared to CA2702 with a statistically significant difference.~~

At a later assessment date (42-55 DA-B) mean efficacy of 93 % was observed on leaf level 1. On leaf level 2 also mean efficacy of 93 % was observed.

At these timings both dose rates were statistically more effective compared to CA2702 in 1 trial on leaf level 1, and the 1.4 L/ha was also more effective in 1 other trial. On leaf level 2 both rates were significantly more effective compared to CA2702 in 1 trial, and compared to CA2445 in 1 trial, and in the third trial on leaf level 2 the 1.4 L/ha dose rate was significantly more effective compared to CA2702.

~~Overall, CA3642 achieved already at an early assessment date (15-24 DA-B) acceptable control (73-84 %) on all three upper leaf levels.~~ Moreover, the efficacy increases over time and at a later assessment date (42-55 DA-B) the efficacy on leaf level 1 and 2 was good with 93 % and 93 %, respectively.

~~After one application of CA3642 applied at 1.2-1.4 L/ha~~

~~Efficacy after one application was assessed 14 or 16 days after application.~~

~~To evaluate the efficacy on leaf level 1, one trial is available. Even though the infestation in the untreated check was below 5 % (3.1 %), this assessment is considered valid as the infestation increases throughout the trial period to up to 100 %. Already after the first application of CA3642 at 1.2-1.4 L/ha efficacy of 100 % was observed. In the same trial, leaf level 2 was evaluated after one application of CA3642 at the intended dose rates. With an initial infestation of 15.1 % the efficacy on leaf level 2 ranged between 70 and 89 %.~~

~~For the evaluation on leaf level 3 two trials are available. The infestation at application in one trial was lower than the anticipated 5 % but significantly increased during the trial period. Therefore, this assessment is considered to be valid. Mean efficacy of 79-92 % was observed after one application of CA3642 at 1.2-1.4 L/ha on leaf level 3. No statistically significant differences were observed between the efficacy of CA2702 and the efficacy of CA3642 at two tested dose rates, but in 1 assessment the 1.4 L/ha rate gave significantly lower efficacy compared to the PROLINE 275~~

~~Overall, CA3642 applied at 1.2-1.4 L/ha achieved already after one application control levels of 70-100 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.~~

At all assessments, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. In all but 1 assessment CA3642 was statistically comparable to or better than the authorised reference standards. In this dataset the efficacy of the 2 proposed dose rates of CA3642 was fairly comparable after 2 applications, but a difference in mean efficacy was clear from the data after 1 application only.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Puccinia recondita f. sp. recondita* on rye in the Maritime EPPO zone.

Comments of zRMS:

Only 3 efficacy trials were carried out to control of *Puccinia recondita* f.sp. *recondita* in winter rye in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved very high results of >92% on L1 and L2 in the late assessment after 2 applications. Similar effect was presented for the products containing PTZ solo. The test product was superior compared to the reference product CA2702. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Belgium, Ireland, Luxembourg and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

SECCW – PUCCRR – North-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRR in the North-East EPPO zone. The trial was carried out in Poland in 2019. The first application took place at crop stage BBCH 32 and the second application was done 30 days later, at BBCH 42-51.
According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, two additional trials from Germany are presented for the evaluation of efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRR. CA3642 was first applied at crop stage BBCH 31-32 and the second application was done 19-20 days later, at BBCH 53.

Table 3.2-352: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against PUCCRR – valid assessments – trials from North-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC** [b]	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.4 L/ha compared to**			**CA3642 at 1.2 L/ha compared to**		
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA~~2702~~ 2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2445 0.8 L/ha**
Efficacy after 2 applications																
North-East EPPO Zone																
LEAF1 early	45	15	1		16.2	*92.1*	*88.3*	~~66~~ *65.8*	~~83.3~~ *83.6*	-	1>	1>	-	1>	1>	-
LEAF2 early	45	15	1		42.3	~~88.2~~ *88.1*	*87.1*	*65.1*	~~81.3~~ *81.4*	-	1>	1>	-	1>	1>	-
LEAF3 early	45	15	1		70.7	*81.3*	*81*	*50.9*	~~73.4~~ *73.5*	-	1>	1>	-	1>	1>	-
LEAF1 late	59	29	1			*87.4*	*79.8*	*53.1*	*87.4*	-	1>	1=	-	1>	1<	-
Germany																
LEAF1 late	62-74	42-55	2	*Mean*	5.9	~~95.3~~ *95.1*	~~93.6~~ *93.9*	~~85.4~~ *85.6*	-	~~83.9~~ *83.6*	1> 1=	-	2=	2=	-	2=
				Min	5.4	~~90.6~~ 90.9	~~89.1~~ 89.7	~~78.1~~ 79.0		73.4						
				Max	6.4	~~100~~ 99.3	98.1	~~92.6~~ 92.1		~~94.4~~ 93.7						
LEAF2 late	62-74	42-55	2	*Mean*	16.7	~~95.5~~ *95.7*	~~94.5~~ *94.7*	~~90.9~~ *91.1*	-	~~86.1~~ *86.3*	2=	-	1>	2=	-	1>
				Min	13.7	92.2	~~90.5~~ 90.8	~~85.4~~ 85.5		~~75.2~~ 75.5			1=			1=
				Max	19.6	99.2	98.5	~~96.4~~ 96.6		~~96.9~~ 97.1						
Summary North-East and supporting trials																
LEAF1 late	59-74	29-55	3	*Mean*	21.6	92.5	89.2	74.7	87.4	-	2> 1=	1=	1> 1=	1> 2=	1=	2=
				Min	5.4	87.4	79.8	53.1								
				Max	53.0	99.3	98.1	92.1								

[b] UTC: % infestation in untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

<u>After two applications of CA3642 applied at 1.2-1.4 L/ha</u>
In the trial carried out in the North-East EPPO zone, 88-92 % efficacy was observed in leaf level 1 at an early assessment date (15 DA-B). In leaf level 2 efficacy of 87-88 % was observed and on leaf level 3 the efficacy was 81 % after application of both intended dose rates. Efficacy of CA3642 applied at 1.4 and 1.2 L/ha had a better efficacy, with a statistically significant difference, compared to CA2702 in all assessments. In addition, CA3642 at 1.4 L/ha gave significantly higher control compared to OSIRIS 65 EC on leaf level 1, and for both dose rates also compared to this reference on leaf level 3.

At a later assessment date (29 DA-B) efficacy of 80-87 % was observed on leaf level 1 after application of 1.2-1.4 L/ha CA3642. CA3642 applied at both rates was statistically more effective compared to CA2702, while the reference standard OSIRIS 65 EC performed inferior compared to the higher rate (1.4 L/ha) and superior compared to the lower rate (1.2 L/ha). The differences with 1.2 l/ha dose rate is statistically significant. This assessment is a perfect example to justify the registration of a dose range. As it shows a clear dose response under severe disease pressure.

In the two trials from Germany, application of CA3642 at 1.2-1.4 L/ha resulted in mean efficacy of 94-95 % on leaf level 1 at a later assessment date (42-55 DA-B). At the same timing, the efficacy on leaf level 2 ranged between 95 and 96 %. On leaf level 1 CA3642 at 1.4 L/ha gave statistically higher control compared to CA2702 in 1 trial, and on leaf level 2 both dose rates of CA3642 were statistically more effective compared to CA2445. At all other assessments CA3642 was comparable to the reference standards.

Results from both North-East EPPO zone and Germany are available for a late assessment date (29-55 DA-B) on leaf level 1. The achieved mean efficacy was 89 % after application of 1.2 L/ha CA3642 and 93 % after application of 1.4 L/ha.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots. CA3642 applied at the proposed dose rates was comparable to or better than the authorised reference standards. Efficacy between the 2 dose rates was statistically comparable but a slight increase in efficacy was observed for the higher dose rate.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Puccinia recondita f. sp. recondita* on rye in the North-East EPPO zone.

Comments of zRMS: Only 1 efficacy trial was carried out to control of *Puccinia recondita* f.sp. *recondita* in winter rye in the North-East EPPO climatic zone. Also 2 efficacy trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved high results of 89,2% and 92,5% respectively on L1 in the late assessment after 2 applications. Similar effect was presented for the reference products. No results after 1 application were presented. Limited number of trials was available in the NE zone but an extrapolation from winter wheat is possible. Based on the above summary, it can be concluded that CA3642 at 1,2-1,4 l/ha in 2 applications is effective for control of PUCCRR/PUCCRE in winter rye in the NE zone. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

SECCW – PUCCRR – South-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against PUCCRR in the South-East EPPO zone. The trial was carried out in Hungary in 2019. The first application took place at crop stage BBCH 31 and the second application was done 22 days later, at BBCH 41.

Table 3.2-353: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against PUCCRR – valid assessments – South-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**PRIAXOR** 225 g/L EC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
			Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**CA2702 0.8 L/ha**	**PRIAXOR** 1.5 L/ha**	**CA2702 0.8 L/ha**	**PRIAXOR** 1.5 L/ha**
Efficacy after 2 applications												
LEAF4 early	37	15		7.2	*100*	*100*	~~*91.7*~~ *91.4*	*100*	1=	1=	1=	1=
LEAF1 late	60	38		8.3	*100*	*100*	*100*	*100*	1=	1=	1=	1=
LEAF2 late	60	38		16.3	*100*	*100*	*100*	*100*	1=	1=	1=	1=
LEAF3 late	60	38		24.4	*100*	*100*	*100*	*100*	1=	1=	1=	1=

UTC: % infestation in untreated control at assessment date
**150g/l Pyraclostrobin, 75g/l Fluxapyroxad

After two applications of CA3642 applied at 1.0-1.4 L/ha

At an early assessment date (15 DA-B) 100 % efficacy was observed in leaf level 4. No statistically significant difference was observed compared to the efficacy of the used reference standards.

Also, at a later assessment date (38 DA-B) and there on leaf levels 1, 2 and 3, the efficacy of CA3642 at all application rates (1.2 and 1.4 L/ha) was 100 % and therefore similar to the efficacy of the used reference standards.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots and were comparable to the reference standards. In this dataset both dose rates provided full control of infestation of 7.2-24.4 %.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Puccinia recondita f. sp. recondita* on rye in the South-East EPPO zone.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Puccinia recondita* f.sp. *recondita* in winter rye in the South-East EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved full effectiveness after 2 applications. No significant differences between test and reference products have been observed. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.

Summary of data on PUCCRR in rye

Data is presented from a total of six trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control PUCCRR in rye. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 from either dose rate was overall comparable to that observed from applications of the reference products across the EPPO zones. In the Maritime EPPO zone some assessments showed a significant increase in efficacy from CA3642 compared to some reference products. In the North-East EPPO zone CA3642 at both rates gave significantly higher efficacy compared to CA2702 at all assessments and compared to OSIRIS 65 EC also except for 1 instance where OSIRIS 65 EC was significantly higher than the 1.2 L/ha rate. In the South-East EPPO zone all assessments showed full control from all treatments, hence no differences were observed between CA3642 and the reference products.

In the presented datasets for PUCCRR there were usually no statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, although a consistent trend of increased disease control was generally observed

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 78.9 % to 92.9 % for applications of CA3642 at 1.4 L/ha, and 72.7 % to 92.8 % for applications at 1.2 L/ha. In these trials disease severity ranged from 2.8 % to 100 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 81.3% to 92.0% for applications of CA3642 at 1.4 L/ha, and 79.8 % to 87.0 % for applications at 1.2 L/ha. In these trials disease severity ranged from 16.2 % to 70.7 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 was 100 % for applications of CA3642 at 1.4 L/ha, and 100 % for applications at 1.2 L/ha at all assessments. In these trials disease severity ranged from 7.2 % to 24.4 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of PUCCRR in rye.

Winter Rye (SECCW) – Leaf blotch of cereals (RHYNSE - *Rhynchosporium secalis*)

A total of three trials were carried out in 2020 to evaluate the efficacy of CA3642 for the control of leaf blotch (RHYNSE) in winter rye in the Maritime (2 trials) and North-East (1 trial) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (2 trials).
The trial from the North-East EPPO zone was carried out in Latvia.

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.
In some trial valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Polish national guidance, data is also presented from neighbouring countries in support of the evaluation.

Overall, CA3642 applied at both dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better mean efficacy compared to the used reference standard on all three presented leaf levels (L1, L2 and L3).

SECCW – RHYNSE – Maritime EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against RHYNSE in the Maritime EPPO zone. Trials were carried out in Germany in 2020.
The first application took place at crop stage BBCH 31-32 and the second application was done 19-20 days later, at BBCH 42-51.

Table 3.2-354: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against RHYNSE – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2445 PTC 250 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**
Efficacy after 2 applications													
LEAF3 early	49	29-30	2	Mean Min Max	4.9 4.6 5.1	*87* 80.4 93.5	*86.4* ~~78.4~~ 79.5 ~~93.5~~ 93.2	*79.85* ~~70.6~~ 70.4 ~~89.1~~ 89.5	*72.35* ~~68.6~~ 68.5 ~~76.1~~ 76.5	2=	2=	2=	2=
LEAF1 late	74	55	1	Mean	6.7	~~*77.6*~~ *77.1*	~~*70.1*~~ *71.0*	~~*73.1*~~ *72.9*	~~*77.6*~~ *77.7*	1=	1=	1=	1=
LEAF2 late	74	55	1	Mean	17.1	*76*	~~*66.7*~~ *66.6*	~~*77.2*~~ *77.3*	~~*76.6*~~ *76.7*	1=	1=	1=	1=

UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.2-1.4 L/ha

At an early assessment date (29-30 DA-B) mean efficacy of 86-87 % efficacy was observed in leaf level 3. No statistically significant differences were observed between efficacy of CA3642 applied at 1.4 or 1.2 L/ha compared to both reference products (CA2702 and CA2445).

At a later assessment date (55 DA-B) efficacy of ~~70-78~~ 71-77 % was observed on leaf level 1 after application of 1.2-1.4 L/ha CA3642. No difference was observed compared to the used reference standards. On leaf level 2, efficacy of 67-76 % was observed after application of 1.2-1.4 L/ha CA3642 with no statistically significant difference compared to the reference standards. On leaf level 2 the highest infestation in the untreated control and the biggest difference between the two rates of the application range was observed. This supports the applicant's intention to register an application range, giving the farmer the opportunity to adjust the application rate according to the actual disease pressure.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots and were comparable to the reference standards.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Rhynchosporium secalis* on rye in the Maritime EPPO zone.

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Rhynchosporium secalis* in winter rye in the Maritime EPPO climatic zone. CA3642 at 1,2-1,4 l/ha achieved high efficacy of >86% on L3 in early assessment after 2 applications. Moderate level of control was noted in the late assessment in 1 trial. No results after 1 application were available. No significant differences between test and reference products have been observed. Due to limited number of trials, cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.*

**Accordance to table 3.2-12, rye has minor status in Belgium, Ireland, Luxembourg and Netherlands. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

SECCW – RHYNSE – North-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against RHYNSE in the North-East EPPO zone. The trial was carried out in Latvia in 2020.

The first application took place at crop stage BBCH 33 and the second application was done 30 days later, at BBCH 51.

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, two additional trials from Germany are presented for the evaluation of efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha against RHYNSE. CA3642 was first applied at crop stage BBCH 32-33 and the second application was done 19-20 days later, at BBCH 42-51.

Table 3.2-355: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW against RHYNSE – valid assessments – trials from North-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2445 PTC 250 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA3642 at 1.4 L/ha compared to**		**CA3642 at 1.2 L/ha compared to**	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**
Efficacy after 2 applications													
North-East EPPO Zone													
LEAF2 late	69	39	1	*Mean*	20.9	*~~73.2~~ 73.1*	*~~70.3~~ 70.4*	*~~73.2~~ 73.4*	*~~71.8~~ 71.9*	1=	1=	1=	1=
Germany													
LEAF3 early	49	29-30	2	*Mean* Min Max	*4.9* 4.6 5.1	*87* 80.4 93.5	*86.4* ~~78.4~~ 79.5 ~~93.5~~ 93.2	*79.85* ~~70.6~~ 70.4 ~~89.1~~ 89.5	*72.35* ~~68.6~~ 68.5 ~~76.1~~ 76.5	2=	2=	2=	2=
LEAF1 late	74	55	1	*Mean*	6.7	*~~77.6~~ 77.1*	*~~70.1~~ 71.0*	*73.1*	*77.6*	1=	1=	1=	1=
LEAF2 late	74	55	1	*Mean*	17.1	*76*	*~~66.7~~ 66.6*	*~~77.2~~ 77.3*	*~~76.6~~ 76.7*	1=	1=	1=	1=
Summary North-East and supporting trials													
LEAF2 late	69-74	39-55	2	*Mean* Min Max	19.0 17.1 20.9	*74.6* *73.1* *76.0*	*68.5* *66.6* *70.4*	*75.4* *73.4* *77.3*	*74.3* *71.9* *76.7*	2=	2=	2=	2=

UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.2-1.4 L/ha
In trials carried out in the North-East EPPO zone, efficacy of 73 % and 70 % was observed on leaf level 2, 39 DA-B after application of 1.2 and 1.4 L/ha CA3642, respectively. No difference was observed compared to the used reference standards.

In the two trials from Germany, mean efficacy of 86-87 % efficacy was observed in leaf level 3 at an early assessment date (29-30 DA-B). No statistically significant differences were observed between efficacy of CA3642 applied at 1.2 or 1.4 L/ha compared to both reference products (CA2702 and CA2445).
At a later assessment date (55 DA-B) efficacy of 70-78 % was observed on leaf level 1 after application of 1.2-1.4 L/ha CA3642. No difference was observed compared to the used reference standards. On leaf level 2 efficacy of 67-76 % was observed after application of 1.2-1.4 L/ha CA3642 with no statistically significant difference compared to the reference standards. On leaf level 2 the highest infestation in the untreated control and the biggest difference between the two rates of the application range was observed. This supports the applicant's intention to register an application range, giving the farmer the opportunity to adjust the application rate according to the actual disease pressure.

Results from both North-East EPPO zone and Germany are available for a late assessment date (39-55 DA-B) on leaf level 2. The achieved mean efficacy was 69 % after application of 1.2 L/ha CA3642 and 75 % after application of 1.4 L/ha.

At all assessments, both rates of CA3642 significantly reduced disease severity compared to untreated plots and were comparable to the reference standards.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Rhynchosporium secalis* in winter rye in the North-East EPPO climatic zone. Also 2 efficacy trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1,2-1,4 l/ha achieved moderate (in the late assessments) to high level (in the early assessment) of control after 2 applications. No significant differences between test and reference products have been noted. No results after 1 application were available. Limited number of trials have been submitted in the NE zone but an extrapolation from winter barley is possible for this use in Poland.
Based on the above summary, it can be concluded that CA3642 at 1,2-1,4 l/ha is effective for control of RHYNSE in winter rye in Poland. The dose rate of 1,4 l/ha may be recommended at higher disease pressure.

SECCW – RHYNSE – South-East EPPO Zone

No additional data from other zones were available to support the target dose of CA3642 against *Rhynchosporium secalis* on rye. However, the species *Rhynchosporium secalis* is also the causal agent of leaf blotch on barley. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on rye from the robust dataset presented for the closely related crops winter and spring barley.

The dataset presented in – **Winter barley (HORVW) / *Rhynchosporium secalis* (RHYNSE/RHYNSP)** and **Spring barley (HORVS) / *Rhynchosporium secalis* (RHYNSE)** – showed that an overall trend can be observed whereby efficacy increases with an increased dose rate from 1.0 L/ha to 1.4 L/ha. Also, this trend appears stronger as the disease pressure increases and the closer the observation is to harvest. For the rates of 1.2 and 1.4 L/ha it was often observed that the performance of the product was statistically equivalent or very comparable. Therefore, it is envisaged that in most instances applications of 1.2 L/ha will be sufficient for the control of *Rhynchosporium secalis* on barley but in case of heavy infestation, 1.4 L/ha may be more adequate to obtain higher disease control on rye.

On rye, leaf blotch remains more occasional than on barley crops and since in the fields a complex of disease is often observed instead of a single disease and since the datasets included in this dossier showed that the rates of 1.2-1.4 L/ha generally gave adequate disease control, it is supposed that the same dose range will be acceptable to control *Rhynchosporium secalis* on rye.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control *Rhynchosporium secalis* on rye in the South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Rhynchosporium secalis* in winter rye in the South-East EPPO climatic zone. The cMSs are kindly asked to extrapolate trials from other zones and consider this use on national level.

Summary of data on RHYNSE in rye

Data is presented from a total of three trials to evaluate the efficacy of CA3642 applied at 1.2 or 1.4 L/ha to control RHYNSE in rye. In all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control.

The efficacy obtained from applications of CA3642 from either dose rate was consistently comparable to that observed from applications of the reference products across the EPPO zones. In the Maritime EPPO zone and in the North-East EPPO zone there were no significant differences in efficacy between CA3642 or the reference products.

In the presented datasets for RHYNSE there were no statistically significant differences in efficacy between the 1.4 L/ha rate or the 1.2 L/ha, although on occasions an increase in disease control was observed.
The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 76.0% to 87.0% for applications of CA3642 at 1.4 L/ha, and 66.7% to 86.0% for applications at 1.2 L/ha. In these trials disease severity ranged from 4.6% to 17.1%.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments was 73.2% for applications of CA3642 at 1.4 L/ha, and 70.3% for applications at 1.2 L/ha. In this trial disease severity was 20.9%.

The data presented therefore supports the claim for registration of CA3642 applied at 1.2 L/ha to 1.4 L/ha for control of RHYNSE in rye.

Winter Rye (SECCW) – Powdery mildew of cereals (ERYSGR - *Blumeria graminis*)

No data is available to support the target dose of CA3642 against *Blumeria graminis* on rye. However, the species *Blumeria graminis* is also the causal agent of powdery mildew on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on rye from the robust dataset presented for the other cereal winter wheat.

The dataset presented in – **Winter wheat (TRZAW) /** *Blumeria graminis* **(ERYSGR)** – showed that in all trial assessments across all EPPO zones applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were done.
The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

~~**Considering all elements presented above, CA3642 at 1.2-1.4 L/ha is the minimum effective dose**~~

~~**to control *Blumeria graminis* on rye in the Central Regulatory zone.**~~

Comments of zRMS:

No efficacy trials were carried out to control of *Blumeria graminis* in winter rye in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

Winter Rye (SECCW) – Head blight of cereals (FUSASP – *Fusarium spp.*)

No data were available to support the target dose of CA3642 against *Fusarium spp.* on winter rye in the Maritime, North-east and South-East EPPO zone. However, the species *Fusarium spp.* is also the causal agent of head blight of cereals on wheat. It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.2-1.4 L/ha on winter wheat from the robust dataset presented for the closely related crop winter rye.

The dataset presented in – **Winter wheat (TRZAW) / FUSASP – *Fusarium spp*.** – showed that an overall trend can be observed whereby sufficient efficacy was observed with an applied dose rate ranging from 1.2 L/ha to 1.4 L/ha. Also, this trend appears stronger as the disease pressure increases and the closer the observation is to harvest. For these rates of 1.2 and 1.4 L/ha it was often observed that the performance of the product was statistically equivalent or very comparable. Therefore, it is envisaged that in most instances applications of 1.2 L/ha will be sufficient for the control of FUSASP – *Fusarium spp.* on rye but in case of heavy infestation, 1.4 L/ha may be more adequate to obtain higher disease control on winter rye.
For wheat, in all trial assessments across available Maritime EPPO zone applications of CA3642 at either dose rate significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications. The efficacy obtained from applications of CA3642 from either dose rate was overall comparable and sometimes superior to that observed from applications of the reference products across the EPPO zones.

Considering all elements presented above, CA3642 at 1.2-1.4 L/ha is the effective dose to control *Fusarium spp.* on winter rye in the Maritime, North-east and South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Fusarium* spp. in winter rye in any EPPO climatic zones. The cMSs are kindly asked to consider this use on national level. This use cannot be accepted in Poland. An extrapolation from other cereals is not possible.

Winter Rye (SECCW) – Green leaf area

A total of 11 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 in terms of green leaf area in winter rye in the Maritime (5 trials), North-East (3 trials) and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Denmark (1 trial), Great Britain (2 trials) and Germany (2 trials)
Trials from the North-East EPPO zone were carried out in Poland (2 trials) and Latvia (1 trial).
Trials from the South-East EPPO zone were carried out in Hungary (1 trial) and Romania (2 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.2 and 1.4 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.
In some trial valid efficacy assessments are available from the date of the second application or even

before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Polish national guidance, data is also presented from neighbouring countries in support of the evaluation.

Overall, CA3642 applied at both tested dose rates (1.2 and 1.4 L/ha) consistently showed comparable or better retention of green leaf area compared to the used reference standard on all three presented leaf levels (L1, L2 and L3).

SECCW – Green leaf area – Maritime EPPO zone

In five trials from the Maritime EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Denmark (1 trial), Great Britain (2 trials) and Germany (2 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-35 days later, at BBCH 42-59.

Table 3.2-356: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW assessed as green leaf area – valid assessments – Maritime EPPO zone

Part rated assm. timing	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTC 300 g/L SC		CA2702 AZX 250 g/L SC	Summarized PTZ products	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	Summarized PTZ products	CA2702 0.8 L/ha	Summarized PTZ products
PLANT	62-74	37-55	4*	*Mean* Min Max	*41.9* 18.8 70	*168.5* 126.1 192.3	*162* 125.7 186.2	*149.5* 120 188.8	*148.2* 114 186.2	3> 2=	1> 4=	2> 3=	1> 4=
PLANT late	82	68	1		4.3	407	320.9	320.9	290.7	1=	1=	1=	1=

UTC: % green leaf area in untreated control at assessment date
* four of five available trials considered for mean calculation, one trial with 0% green leaf area could not be considered

Efficacy in terms of green leaf area was assessed on the whole plant at 37-55 DA-B. In three trials several pathogens were present. In one trial just PUCCRR and in another trial just SEPTTR was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 62-69 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha was statistically significant compared to the untreated control in all trials. One trial is not considered for mean calculation since it is not possible to calculate with a value of 0 % green leaf area. However, the green leaf area is statistically significant increased after treatment with 1.2-1.4 L/ha CA3642 compared to the untreated control.

In one trial, an additional assessment was done at 68 DA-B. At that timing the remaining green leaf area in the untreated control was very low (4.3 %) and the increase up to 17.5 % and 13.8 % after application of CA3642 at 1.4 L/ha and 1.2 L/ha, corresponds to an increase of 307 % and 220 %.

Application of CA3642 at 1.4 L/ha resulted in statistically significant higher green leaf area compared to the application of CA2702 in three trials. In two trials, the application of CA3642 applied at 1.2 L/ha resulted in numerically higher green leaf area compared to the application of CA2702. In one trial, CA3642 applied at 1.2 and 1.4 L/ha achieved statistically significant higher green leaf area compared to all reference standards at the earlier assessment.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in rye affected by a range of pathogens in the Maritime EPPO zone.

Comments of zRMS:

The mean green leaf area increased by 68,5% after 2 applications of CA3642 at 1,4 l/ha and 62% at 1,2 l/ha in 4 efficacy trials. No statistical differences between dose rates can be observed in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

SECCW – Green leaf area – North-East EPPO zone

In three trials from the North-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Poland (2 trials) and Latvia (1 trial) between 2019 and 2020.
The first application took place at crop stage BBCH 31-37 and the second application was done 15-36 days later, at BBCH 51-57.

Table 3.2-357: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW assessed as green leaf area – valid assessments – North-East EPPO zone

Part rated assm. timing	DA-A	DA-B	No of tri-als	Name Conc Type / Rate	UTC	CA3642 150 g/L AZX + 150 g/L PTC 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTC 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC	CA3642 at 1.4 L/ha compared to			CA3642 at 1.2 L/ha compared to		
						1.4 L/ha **210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha** **180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**2 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**OSIRIS 65 EC 2.0 L/ha**
PLANT	59-69	29-44	3	*Mean*	34.8	*128.8*	*122.4*	*122.4*			3=			3=		
				Min	28.8	115	112.1	115								
				Max	41.3	147.6	134.7	130.2								
			2	*Mean*	31.6	*135.7*	*127.6*	*126*	*115.2*		2=	1>		2=	2=	
				Min	28.8	123.9	120.4	121.9	113.1			1=				
				Max	34.3	147.6	134.7	130.2	117.4							
			2	*Mean*	35.1	*131.3*	*123.4*	*122.6*		*123.9*	2=		2=	2=		2=
				Min	28.8	115	112.1	115		109						
				Max	41.3	147.6	134.7	130.2		138.9						

UTC: % green leaf area in untreated control at assessment date
** EPC + MTC: Epoxiconazol 37.5g/l + Metconazol 27.5g/l

Efficacy in terms of green leaf area was assessed on the whole plant at 29-44 DA-B. In each of these trials just a single disease was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 22-29 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha was statistically significant compared to the untreated control in two of three trials.

Performance of CA3642 applied at 1.4 L/ha was better compared to performance of CA2445 in one trial with a statistically significant difference. CA3642 applied at 1.2 L/ha performed similar compared to the used reference standards.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in rye affected by a range of pathogens in the North-East EPPO zone.

Comments of zRMS:

The mean green leaf area increased by 28,8% after 2 applications of CA3642 at 1,4 l/ha and 22,4% at 1,2 l/ha. No statistical differences between dose rates can be observed in the North-East EPPO climatic zone. Positive impact on green leaf area has been noted.

SECCW – Green leaf area – South-East EPPO zone

In three trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of green leaf area. Trials were carried out in Hungary (1 trial) and Romania (2 trials) in 2019.
The first application took place at crop stage BBCH 31-37 and the second application was done 19-30 days later, at BBCH 41-59.

Table 3.2-358: Summary - Efficacy of CA3642 (1.2 - 1.4 L/ha) in SECCW assessed as green leaf area – valid assessments – South-East EPPO zone

Part Rated	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTC 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTC 250 g/L EC	CA3642 at 1.4 L/ha compared to		CA3642 at 1.2 L/ha compared to	
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
PLANT	60-77	38-47	2	Mean Min Max	32.5 25 40	*200* 200 200	*195* 190 200	*200* 200 200		2=		2=	
			1		25	*200*	*190*	*200*	*205.2*	1=	1=	1=	1=
LEAF1	44	25	1		21.3	*267.6*	*257.3*	*247.9*	*248.8*	1=	1=	1=	1=
LEAF2	44	25	1		3.8	*481.6*	*455.3*	*415.8*	*434.2*	1=	1=	1=	1=

UTC: % green leaf area in untreated control at assessment date
* Just one disease present

Efficacy in terms of green leaf area was assessed in two trials on the whole plant at 38-47 DA-B. In one trial green leaf area was assessed on leaf level 1 and 2 at 25 DA-B. In one trial several pathogens were present. In the other trials just a single disease was present.
After two applications of CA3642 at 1.2-1.4 L/ha, the mean green leaf area increased by 95-100 % on the whole plant compared to the untreated control. On leaf level 1 an increase by 157-168 % and on leaf level 2 an increase by 355-382 % was observed. The increase of green leaf area induced by CA3642 at 1.2 L/ha and 1.4 L/ha on leaf level 1 and 2 was statistically significant compared to the untreated control in all but one assessment on plant, and in the other trial, although not statistically significant the green leaf area was increased by 100%

Performance of CA3642 applied at 1.2 L/ha and 1.4 L/ha was comparable to the performance of the used reference standards without any statistically significant differences.

Therefore, it is concluded that 1-2 applications of CA3642 at 1.2-1.4 L/ha will have a positive effect on the green leaf area in rye affected by a range of pathogens in the North-East EPPO zone.

Comments of zRMS:

Taking into account all plants, the mean green leaf area increased by 100% after 2 applications of CA3642 at 1,4 l/ha and 95% at 1,2 l/ha. Also increase of GLA was visible on L1 and L2, with results of 167,6% and 381,6% respectively. No statistical differences between dose rates can be observed in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Oats (AVESS)

Oats (AVESS) - Powdery mildew of oat (ERYSGA - *Blumeria graminis f. sp. Avenae*)

A total of four trials were carried out in 2020 to evaluate the efficacy of CA3642 for the control of Powdery mildew (ERYSGA) in oat in the Maritime (2) and North-East (2) EPPO zone.
Trials from the Maritime EPPO zone were carried out in Germany (2 trials).
Trials from the North-East EPPO zone were carried out in Poland (2 trials).
No trials were available from the South-East EPPO zone.

In all trials the test product CA3642 was applied twice at a dose rate of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Oats AVESS – ERYSGA - Maritime EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha against ERYSGA. Trials were carried out in Germany (2 trials) in 2020.
The first application took place at crop stage BBCH 32 and the second application was done 23-24 days later at BBCH 55-61.

Table 3.2-359: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against ERYSGA – valid assessments - Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC** [i]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha 200 g AZX/ha**	**CA2445 0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 late	58	35	1	Mean	4.4	***100.0***	*100.0*	*100.0*	*1=*	*1=*
LEAF1 very late	70	47	1	Mean	4.6	~~*71.7*~~ ***71.2***	*100.0*	~~*78.3*~~ *78.1*	*1<*	*1=*
LEAF2 late	58	35	1	Mean	9.1	~~*84.6*~~ ***84.3***	~~*97.8*~~ *98.4*	~~*93.4*~~ *93.7*	*1=*	*1=*
LEAF2 very late	70	47	1	Mean	9.2	~~*75.0*~~ ***74.8***	~~*93.5*~~ *93.2*	~~*98.9*~~ *98.6*	*1=*	*1=*
LEAF3 late	51- 54	28- 30	2	Mean	*4.1*	~~*96.3*~~ ***96.5***	*100.0*	~~*95.1*~~ *95.0*	*2=*	*2=*
				Min	4.1	~~92.7~~ **93.0**	100.0	~~90.2~~ 90.0		
				Max	4.1	**100.0**	100.0	100.0		

[i] UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.0 L/ha

After 2 applications at dose rate 1.0 L/ha a mean efficacy of 100 % and ~~71.7~~ 71.2 % was observed on leaf level 1 at a late and very late assessment date, respectively. On leaf level 2 a mean efficacy of ~~84.6~~ 84.3 % and ~~75~~ 74.8 % was observed for a late and very late assessment date, respectively, after 2 applications of the intended dose rate. For leaf level 3, a mean efficacy of 96.3 % was observed after two applications of the intended dose rate. In five out of six assessments CA3642 achieved comparable control to the reference product CA2702; though CA3642 achieved a significantly lower control in one out six assessments, it can still be argued that CA3642 provides an acceptable level of control in that assessment. CA3642 was comparable to the reference product CA2445 with no significant difference occurring.

Over the trial period, CA3642 achieved acceptable to excellent control (~~71.7~~ 71.2- 100 %) on all three upper leaf levels after two applications.

At all assessments, with applications, CA3642 significantly reduced disease severity compared to untreated plots.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Blumeria graminis f. sp. avenae* in oats.

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *avenae* in oats in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved good results after 2 applications (71,2-100% in the late observations). No significant differences between test and reference products have been observed. No results after 1 application were noted. However, limited number of data were available in the MAR zone for this label claim and cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, oats has minor status in Belgium, Germany, Netherlands and Luxembourg. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Oats AVESS – ERYSGA – North-East EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rate of 1.0 L/ha against ERYSGA. Trials were carried out in Poland (2 trials) in 2020.
The first application took place at crop stage BBCH 32 and the second application was done 14-16 days later at BBCH 57-58.

Table 3.2-360: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against ERYSGA – valid assessments - North-East EPPO Zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [i]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.0 L/ha compared to	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha 200 g AZX/ha**	**CA2445 0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
North-East EPPO Zone										
LEAF2 early	28	14	1	*Mean*		~~98.6~~ ***99.2***	~~67.6~~ *68.1*	*100.0*	*1>*	*1=*
LEAF2 late	47- 51	33- 35	2	*Mean* Min Max	*9.3* 6.6 11.9	~~85.9~~ ***86.2*** ~~81.8~~ **82.2** ~~89.9~~ **90.1**	~~73.2~~ *73.0* 55.5 ~~90.9~~ 90.5	~~95.5~~ *95.3* ~~90.9~~ 90.5 100.0	*1>* 1=	*2=*
LEAF3 early	28- 31	14- 15	2	*Mean* Min Max	*16.7* 4.7 28.7	~~83.9~~ ***83.8*** ~~74.5~~ **74.1** ~~93.4~~ **93.5**	~~67.5~~ *67.4* ~~49.8~~ 49.7 85.1	~~96.8~~ *96.4* ~~93.6~~ 92.8 100.0	*1=* 1>	*2=*
LEAF3 late	47- 51	33-35	2	*Mean* Min Max	*24.9* 10.9 38.8	~~78.5~~ ***78.4*** ~~67.0~~ **66.8** ~~89.9~~ **90.0**	~~66.3~~ *66.2* 43.6 ~~89.0~~ 88.8	~~91.3~~ *91.4* ~~82.6~~ 82.8 100.0	*1>* 1=	*1<* 1=
LEAF4early	28- 31	14- 15	2	*Mean* Min Max	*35.3* 8.1 62.4	~~88.2~~ ***88.4*** ~~86.4~~ **86.8** **89.9**	*63.3* 35.3 ~~91.4~~ 91.2	*95.0* 90.1 ~~99.8~~ 99.9	*1>* 1=	*1<* 1=
Efficacy after 1 application										
LEAF2 early	13	-	1	*Mean*	*6.3*	***100.0***	~~74.6~~ *74.0*	*100.0*	*1>*	*1=*
LEAF3 early	13	-	1	*Mean*	*23.5*	***96.6***	*51.1*	*100.0*	*1>*	*1=*
LEAF4 early	13	-	1	*Mean*	*54.2*	***95.2***	*35.8*	*100.0*	*1>*	*1=*
Germany										
Efficacy after 2 applications										
LEAF1 late	58	35	1	*Mean*	*4.4*	***100.0***	*100.0*	*100.0*	*1=*	*1=*
LEAF1 very late	70	47	1	*Mean*	*4.6*	~~71.7~~ ***71.2***	*100.0*	~~78.3~~ *78.1*	*1<*	*1=*
LEAF2 late	58	35	1	*Mean*	*9.1*	~~84.6~~ ***84.3***	~~97.8~~ *98.4*	~~93.4~~ *93.7*	*1=*	*1=*
LEAF2 very late	70	47	1	*Mean*	*9.2*	~~75.0~~ ***74.8***	~~93.5~~ *93.2*	~~98.9~~ *98.6*	*1=*	*1=*
LEAF3 late	51- 54	28- 30	2	*Mean* Min Max	*4.1* 4.1 4.1	~~96.3~~ ***96.5*** ~~92.7~~ **93.0** **100.0**	*100.0* 100.0 100.0	~~95.1~~ *95.0* ~~90.2~~ 90.0 100.0	*2=*	*2=*
Summary North-East EPPO zone and supporting trials after 2 applications										
LEAF2 late	47-58	33-35	3	*Mean*	*9.2*	***85.5***	*81.5*	*94.7*	*2=*	*3=*

				Min Max	*6.6* *11.9*	***82.2*** ***90.1***	*55.5* *98.4*	*90.5* *100.0*	*1>*	
LEAF3 late	47-54	28-35	4	*Mean* Min Max	*14.5* 4.1 38.8	***87.5*** ***66.8*** ***100.0***	*83.1* *43.6* *100.0*	*93.2* *82.8* *100.0*	*2=* *1<* *1>*	*3=* *1<*

[i] UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.0 L/ha

At an early assessment date (14-15 DA-B) there was a mean efficacy of 98.6 % on leaf level 2, on leaf level 3 the mean efficacy was ~~83.9~~ 83.8% and on leaf level 4 the mean efficacy was 88.2 %. CA3642 had significantly higher performance at leaf level 2, leaf level 3 and leaf level 4 compared to CA2702 in three out of five assessments. No significant differences were observed comparing the efficacy of CA3642 at the intended dose rate with CA2445 in four out of five assessments, significantly lower efficacy was recorded in one assessment; however, CA3642 still provides a good level of control.

At a later assessment date (33-35 DA-B) mean efficacy of ~~85.9~~ 86.2% was observed on leaf level 2 and a mean efficacy of ~~78.5~~ 78.4 % on leaf level 3 was achieved. Compared to CA2702, CA3642 applied at 1.0 L/ha had significantly higher performance at leaf level 2 and leaf level 3 at the late assessment date. CA3642 at the intended dose rate had a significantly lower performance at leaf level 3 when compared to CA2445 at the later assessment period, although CA3642 still provides a good level of control at that assessment.

Over the trial period, CA3642 achieved acceptable to excellent control (~~67~~ 66.8- ~~98.6~~ 99.2%) on all four upper leaf levels after two applications. It should be considered that the trials are characterized by quite severe and variable disease pressures of 4.7- 62.4 %, representing challenging circumstances for the product.

After one application of CA3642 applied at 1.0 L/ha

Efficacy after one application was assessed 13 days after application in one trial on leaf level 2, leaf level 3 and leaf level 4.

At an early assessment date (13 DA-B) there was a mean efficacy of 100 %, 96.6 % and 95.2 % for leaf level 2, leaf level 3 and leaf level 4 respectively. Performance of CA3642 applied at the dose rate 1.0 L/ha and assessed at an early date was comparable to the reference CA2445 with no statistically significant differences.

A significantly higher control was achieved when CA3642 was applied at the intended dose rate on all assessed leaf levels compared to the control achieved after application of the reference product CA2702.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control level of 100 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

In the two trials from Germany, at dose rate 1.0 L/ha a mean efficacy of 100 % and ~~71.7~~ 71.2 % was observed on leaf level 1 late and very late respectively. In leaf level 2 a mean efficacy of 84.6 % and ~~75~~ 74.8% was observed for leaf level 2 late and very late respectively after two applications of the intended dose rate. Leaf level 3 had a mean efficacy of ~~96.3~~ 96.5% after two applications of the intended dose rate. Comparable control was achieved when CA3642 was applied at the intended dose rate on all assessed leaf levels compared to the control achieved after application of the reference product CA2445, and was comparable for the reference product CA2702 in five out of six assessments.

Results from both North-East EPPO zone and Germany are available for a late assessment date on leaf level 2 (33- 35 DA-B) and 3 (28- 35 DA-B) respectively. The achieved mean efficacy was ~~85.4~~ 85.5% on leaf level 2 and ~~87.4~~ 87.5% on leaf level 3 after two applications of 1.0 L/ha CA3642.

At all assessments, with either one or two applications, CA3642 significantly reduced disease severity compared to untreated plots.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Blumeria graminis f. sp. avenae* in oats.

Comments of zRMS: Only 2 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *avenae* in oats in the North-East EPPO climatic zone. Also 2 trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha achieved good level of control after 2 applications with results of 85,5% and 87,5%, on L2 and L3 respectively. Similar effect has been observed for the reference products. Also high effectiveness was visible after 1 application in one trial for the early assessment (>90%). However, insufficient number of trials (4) were available in Poland and Germany. An extrapolation from other cereals is not allowed. This use cannot be accepted in Poland.

Oats AVESS – ERYSGA – South-East EPPO zone

No data were available to support the target dose of CA3642 against *Blumeria graminis f. sp. avenae* (ERYSGA) on oat. However, the species *Blumeria graminis* f. sp. *hordei* (ERYSGH) is also the causal agent of Powdery mildew on winter barley (HORVW). It therefore seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.0 L/ha on oat from the robust dataset presented for the closely related crop winter barley.

The dataset presented in – winter barley (HORVW)/ *Blumeria graminis* f. sp. *hordei* (ERYSGH) – showed that overall CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 93 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

At all assessments, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against ERYSGH was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Blumeria graminis* f. sp. *avenae* on oat in the South-East EPPO zone.

Comments of zRMS: No efficacy trials were carried out to control of *Blumeria graminis* f.sp. *avenae* in oats in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Summary of data on ERYSGA in oat

Data is presented from a total of four trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Blumeria graminis f. sp. avenae* (ERYSGA) in oat. In all trial assessments across the Maritime and North-East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the two EPPO zones. In both the Maritime and North-East EPPO zones some assessments indicated a significantly higher or comparable efficacy for

CA3642 compared to the reference products CA2702 and CA2445, nevertheless the efficacy of CA3642 against ERYSGA was considered sufficient in either case.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 71.7- 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.1 % to 9.2 %.

The mean efficacy in the North-East EPPO zone on leaf levels 2 to 4 at early or late assessments ranged from 67.0 % to 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.7 % to 62.4 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of ERYSGA in oat.

Oats (AVESS) - Oat crown rust (PUCCCA/PUCCCO - *Puccinia coronata (var. avenae)*)

In some trials the pathogen was described in the trial reports as PUCCCA (*Puccinia coronata var. avenae*), which is the specific nomenclature for crown rust of oats, as provided in the EPPO global database. In other trials the pathogen is described only as PUCCCO (*Puccinia coronata*), with no specificity as to the variety. Reference to the EPPO database however indicates that these are the same species, and it is likely that both pathogens are indeed specifically PUCCCA. Therefore, both datasets are merged in this dossier.

A total of six trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 at a dose rate of 1.0 L/ha CA3642 for the control of Oat crown rust (PUCCCA/PUCCCO) in oat in the Maritime (3), South-East (2) and North-East (1) EPPO zones.
The trials from the Maritime EPPO zone were carried out in Germany (3 trial).
Trials from the South-East EPPO zone were carried out in Romania (2 trials).
The trial from the North-east EPPO zone was carried out in Poland (1 trial).

In all trials the test product CA3642 was applied twice at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Overall, CA3642 applied at 1.0 L/ha has consistently shown comparable or higher mean efficacies compared to the used reference standard on all three presented leaf levels.

Oat (AVESS) – PUCCCA/PUCCCO – Maritime EPPO zone

Three trials are available to evaluate the efficacy of CA3642 applied twice at a dose rate of 1.0L/ha against PUCCCA/PUCCCO. The trial was carried out in Germany between 2019 and 2020.
The first application took place at crop stage BBCH 32 and the second application was done 14- 24 days later at BBCH 55-61.

Table 3.2-361: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against PUCCCA/PUCCCO – valid assessments - Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	TORERO AZX 250 g/L EC	CA3642 at 1.0 L/ha compared to		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.0 L/ha 250 g AZX/ha**	**CA2702 0.8 L/ha 200 g AZX/ha**	**TORERO 1.0 L/ha 250 g AZX/ha**	**CA2445 0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications												
LEAF1 early	39	15	1	*Mean*	*5.6*	***100.0***	*100.0*	-	*100.0*	1=	1=	-
LEAF1 late	49	25	1	*Mean*	*11.4*	***~~95.6~~ 96.0***	*~~68.4~~ 68.5*	-	*~~97.4~~ 97.5*	1>	1=	-
LEAF1 very late	70	47	1	*Mean*	*25.3*	***92.1***	*~~91.3~~ 91.4*	*~~94.9~~ 95.1*	-	1=	-	1=
LEAF2 late	58	35	1	*Mean*	*5.5*	***~~78.2~~ 78.4***	*100.0*	*~~87.3~~ 88.2*	-	1<	-	1=
LEAF2 very late	70	47	1	*Mean*	*40.8*	***~~94.4~~ 94.5***	*91.9*	*~~94.9~~ 94.8*	-	1=	-	1=
LEAF3 late	54	30	1	*Mean*	*8.9*	***~~77.5~~ 78.0***	*~~85.4~~ 85.9*	*~~88.8~~ 88.5*	-	1=	-	1<

[i] UTC: % infestation in untreated control at assessment date

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early assessment date (15 DA-B) 100 % efficacy was observed in leaf level 1 for dose rate 1.0 L/ha as well as for the reference products, with no significant difference at all.

At a late and very late assessment date (25 and 47 DA-B) efficacy of 95.6 % and 92.1 % was observed on leaf level 1, 78.2 % and 94.4 % for leaf level 2 and 77.5 % for leaf level 3. No difference was observed between the reference product TORERO and CA3642. There was a significantly higher efficacy for CA3642 when compared to CA2702 in one out of five late and very late assessments. Three out of four assessments expressed a comparable efficacy for CA3642 at 1.0 L/h when compared to CA2445. Although in one assessment a significantly reduced control was recorded for CA3642 compared to CA2445, CA3642 still provides an acceptable level of control at these assessments.

At all assessments of CA3642 significantly reduced disease severity compared to untreated plots.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.0 L/ha to control *Puccinia coronata var. avenae* in oats.

Comments of zRMS:

3 efficacy trials were carried out to control of *Puccinia coronata var. avenae* in oats in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved high results of 78-100% for the early and late assessments. No significant differences between test and reference products have been observed in the trials. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, oats has minor status in Belgium, Germany, Netherlands and Luxembourg. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Oat (AVESS) – PUCCCA/PUCCCO- South-East EPPO Zone

A total of two trials are available to evaluate the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha against PUCCCA/PUCCCO. Trials were carried out in Romania (2 trials) in 2019 and 2021.
The first application took place at crop stage BBCH 32-37 and the second application was done 14-20 days later at BBCH 59.

Table 3.2-362: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against PUCCCA/PUCCCO – valid assessments - South-East EPPO Zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC [i]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha 200 g AZX/ha**	**CA2445 0.8 L/ha 200 g PTZ/ha**
Efficacy after 2 applications										
LEAF1 early	30	16	1	*Mean*	*13.8*	***89.1***	-	*~~87.0~~ 86.8*	-	*1=*
LEAF1 late	39- 46	16- 26	2	*Mean*	*11.1*	***~~91.2~~ 91.3***	-	*89.4*	-	*2=*
				Min	4.7	**~~82.4~~ 82.5**		~~79.0~~ 79.1		
				Max	17.6	**100.0**		~~99.8~~ 99.7		
			1	*Mean*	4.7	**100.0**	100.0	99.8	1=	1=
			1	*Mean*	17.6	**82.4**	-	79.0	-	1=
LEAF2 early	30	16	1	*Mean*	*4.7*	***~~61.7~~ 62.1***	-	*~~61.7~~ 62.7*	-	*1=*
LEAF2 late	30- 46	16- 26	1	*Mean*	*9.2*	***99.9***	*99.9*	*99.6*	*1=*	*1=*

[i] UTC: % infestation in untreated control at assessment date

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early assessment date (16 DA-B) 89.1 % efficacy was observed in leaf level and in leaf level 2 efficacy of ~~61.7~~ 62.1 % was observed. Performance of CA3642 applied at the dose rate 1.0 L/ha and assessed at an early date was comparable to the used reference standards, CA2702 and CA2445, with no significant difference.

At a later assessment date (25- 26 DA-B) efficacy of ~~82.4~~ 82.5-100 % was observed on leaf level 1 and in leaf level 2 efficacy of 99.9 % was observed. Performance of CA3642 applied at dose rate 1.0 L/ha and assessed at a later date was comparable to the used reference standards, CA2702 and CA2445 with no significant difference.

There were no statistically significant differences in disease reduction compared to that of the authorised reference products. At all assessments applications of CA3642 significantly reduced disease severity compared to untreated plots.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.0 L/ha to control *Puccinia coronata var. avenae* in oats.

Comments of zRMS:

Only 2 efficacy trials were carried out to control of *Puccinia coronata var. avenae* in oats in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved high results with mean efficacy of 91,3% on L1 after 2 applications for the early and late assessments. Similar effect was noted for the reference products. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, oats has minor status in Hungary. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

Oat (AVESS) – PUCCCA/PUCCCO – North-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha against PUCCCA/PUCCCO. The trial was carried out in Poland in 2021.
The first application took place at a crop stage BBCH 32 the second application was done 19 days later at BBCH 55.

Table 3.2-363: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against PUCCCA/PUCCCO – valid assessments - North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [i]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	DELARO (175 g/L PTZ + 150 g/L TFS)**** 325 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	TORERO AZX 250 g/L EC	CA3642 at 1.0 L/ha compared to			
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.0 L/ha 250 g AZX/ha	DELARO 325 SC 1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha	CA2702 0.8 L/ha 200 g AZX/ha	TORERO 1.0 L/ha 250 g AZX/ha	CA2445 0.8 L/ha 200 g PTZ/ha
North- East														
Efficacy after 2 applications														
LEAF1 late	48	29	1	*Mean*	*20.8*	***91.3***	*97.6*	-	-	-	*1=*	-	-	-
LEAF2 late	48	29	1	*Mean*	*5.4*	~~90.7~~ ***91.7***	~~98.1~~ *98.2*	-	-	-	*1=*	-	-	-
Germany														
Efficacy after 2 applications														
LEAF1 early	39	15	1	Mean	*5.6*	***100.0***	-	*100.0*		*100.0*	-	1=	1=	
LEAF1 late	49	25	1	Mean	*11.4*	~~95.6~~ ***96.0***	-	~~68.4~~ *68.5*		~~97.4~~ *97.5*	-	1>	1=	
LEAF1 very late	70	47	1	Mean	*25.3*	***92.1***	-	~~91.3~~ *91.4*	~~94.9~~ *95.1*	-	-	1=		1=
LEAF2 late	58	35	1	Mean	*5.5*	~~78.2~~ ***78.4***	-	*100.0*	~~87.3~~ *88.2*	-	-	1<		1=
LEAF2 very late	70	47	1	Mean	*40.8*	~~94.4~~ ***94.5***	-	*91.9*	~~94.9~~ *94.8*	-	-	1=		1=
LEAF3 late	54	30	1	Mean	*8.9*	~~77.5~~ ***78.0***	-	~~85.4~~ *85.9*	~~88.8~~ *88.5*	-	-	1=		1<
Summary North-East and supporting trials														
LEAF1 late	48-49	25-29	2	*Mean*	*16.1*	***93.7***			-					-
				Min	*11.4*	***91.3***	*97.6*				*1=*			
				Max	*20.8*	***96.0***		*68.5*		*97.5*		1>	*1=*	
LEAF2 late	48-58	29-35	2	*Mean*	*5.5*	***85.1***				-			-	
				Min	*5.4*	***78.4***		*100.0*	*88.2*			1<		1<
				Max	*5.5*	***91.7***	*98.1*				*1=*			

[i] UTC: % infestation in untreated control at assessment date
****PTZ + TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

At the late assessment dates a range of ~~90.7 –~~ 91.3 – 91.7 % efficacy was observed at both leaf levels after two applications of CA3642 dose rate 1.0 L/ha. The performance of CA3642 was comparable to the reference product DELARO.

Supporting trials
At a late assessment date (25 DA-B) efficacy of ~~95.6~~ 96.0 % was observed on leaf level 1 and ~~78.2~~ 78.4 % for leaf level 2. No difference was observed between the reference products CA2445 and TORERO and the test product CA3642. At leaf level 1 and leaf level 2 there was a significantly higher and reduced control recorded for CA3642 comapred to CA2702 respectively, CA3642 still provided an acceptable level of control at these assessments.

At all assessments of CA3642 significantly reduced disease severity compared to untreated plots.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.0 L/ha to control *Puccinia coronate var. avenae* in oats.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Puccinia coronata var avenae* in oats in the North-East EPPO climatic zone. Also one trial from Germany has been included to the overall calculation as support for the Polish registration. After 2 applications, CA3642 at 1 l/ha achieved high results with mean efficacy of 93,7% and 85,1%, on L1 ad L2 respectively for the late assessments. No results after 1 application were available. Similar effect has been observed for the reference products. Insufficient number of trials (2) was presented in Poland and Germany. An extrapolation from other cereals is not allowed. This use cannot be accepted in Poland.

Summary of data on PUCCCA in oat

Data is presented from a total of six trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Puccinia coronata var. (avenae)* (PUCCCA/PUCCCO) in oat. In all trial assessments across the Maritime, South-East and North- East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the three EPPO zones. In the Maritime, South-East and North-East EPPO zone some assessments showed a significant increase in efficacy from CA3642 compared to the reference product CA2702. In two of the assessments across all EPPO zones, a lower efficacy of CA3642 was observed compared to the reference product. CA3642 still provides an acceptable level of control at these assessments.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 77.5 % to 100 % for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 5.5 % to 40.8 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 and 2 at early or late assessments ranged from 61.7 % to 100 % for applications of CA3642 at a dose rate of 1.0 L/ha. In these trials disease severity ranged from 4.7 % to 17.6 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 and 2 at the late assessments ranged from 90.7 % to 91.3 % for applications at 1.0 L/ha. In these trials disease severity ranged from 5.4 % to 20.8 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of PUCCCA/PUCCCO in oat.

Oats (AVESS) - Leaf spot of oat (PYRNAV - *Pyrenophora chaetomioides*)

A total of three trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 at a dose rate of 1.0 L/ha CA3642 for the control of Leaf spot of oat (PYRNAV) in oat in the Maritime (1) and North-East (2) EPPO zones.

Then trial from the Maritime EPPO zone was carried out in Germany (1 trial).
Trials from the North-East EPPO zone were carried out in Latvia (2 trials).

In all trials the test product CA3642 was applied twice at a dose rate of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Oats (AVESS) – PYRNAV – Maritime EPPO zone

One trial was available to evaluate the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha against PYRNAV. The trial was carried out in Germany (1 trial) in 2019.
The first application took place at a crop stage BBCH 31 the second application was done 29 days later at BBCH 61.

Table 3.2-364: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against PYRNAV – valid assessments - Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC** [i]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**TORERO AZX 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**1.0 L/ha 250 g AZX/ha**	**CA2702 0.8 L/ha 200 g AZX/ha**	**TORERO 1.0 L/ha 250 g AZX/ha**
Efficacy after 2 applications										
LEAF2 early	44	15	1	*Mean*	*9.8*	~~*90.8*~~ ***90.7***	~~*72.4*~~ *72.0*	~~*91.8*~~ *91.6*	*1>*	*1=*
LEAF2 late	58	29	1	*Mean*	*11.1*	***80.2***	~~*62.2*~~ *62.3*	~~*82.9*~~ *82.6*	*1>*	*1=*
LEAF3 early	44	15	1	*Mean*	*36.6*	***87.7***	~~*72.1*~~ *72.0*	~~*80.6*~~ *80.5*	*1>*	*1>*
Efficacy after 1 application										
LEAF2 late	29	-	1	*Mean*	*4.6*	***100.0***	*93.5*	*100.0*	*1=*	*1=*
LEAF3 early	15	-	1	*Mean*	*33.0*	***90.3***	~~*73.3*~~ *73.2*	~~*84.5*~~ *84.7*	*1>*	*1>*
LEAF3 late	29	-	1	*Mean*	*35.2*	***90.9***	*74.1*	~~*85.5*~~ *85.6*	*1>*	*1>*
LEAF4 early	15	-	1	*Mean*	*46.5*	***88.8***	*74.4*	*83.9*	*1>*	*1=*
LEAF4 late	29	-	1	*Mean*	*57.6*	***86.8***	*74.3*	*80.0*	*1>*	*1>*

[i] UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.0 L/ha
At an early assessment date (15 DA-B) ~~90.8~~ 90.7 % efficacy was observed in leaf level 2 and 87.7 % was observed and on leaf level 3. Performance of CA3642 applied at the dose rate 1.0 L/ha and assessed at an early date had a significantly higher performance at leaf level 3 when compared to the reference product TORERO. Compared to CA2702, CA3642 had a significantly higher performance at leaf level 2 and leaf level 3.

At a later assessment date (29 DA-B) mean efficacy of 80.2 % was observed on leaf level 2. Performance of CA3642 applied at the dose rate 1.0 L/ha and assessed at a late date was comparable to the reference TORERO. CA3642 had a statistical higher efficacy on leaf level 2 for CA3642 when compared to CA2702.

After one application of CA3642 applied at 1.0 L/ha
Efficacy after one application was assessed 15 and 29 days (early and late assessments) after one application on leaf level 2, leaf level 3 and leaf level 4.

At an early assessment date (15 DA-B) 90.3 % efficacy was observed in leaf level 3. In leaf level 4 mean efficacy of 88.8 % was observed. Compared to CA2702, CA3642 applied at 1.0 L/ha had significantly higher performance at leaf level 3 and leaf level 4. Performance of CA3642 at an early date was comparable to the reference TORERO with no statistically significant difference on leaf 4 but was significantly higher on leaf 3.

At a later assessment date (29 DA-B) mean efficacy of 100 % was observed on leaf level 2. In leaf level 3 mean efficacy of 90.9 % and leaf level 4 of 86.8 % was achieved. Performance of CA3642 applied at 1.0 L/ha and assessed at a late date was comparable to both reference products on leaf 2 and had significantly higher performance at leaf level 3 and leaf level 4 compared to both reference products.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels of 86.8-100 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

At all assessments, with either one or two applications, CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PYRNAV was comparable to, or higher than, that derived from applications of the authorised reference products.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora chaetomioides* in oats.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Pyrenophora chaetomioides* in oats in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness with results of 86,8-100% after first application and 80,2-90,7% after second applications, for early and late assessments. The test product was slight superior compared to the standard of CA2702. Similar effect was visible between CA3642 and Torero. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Oat (AVESS) – PYRNAV - North-East EPPO zone

A total of two trials are available to evaluate the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha against PYRNAV. Trials were carried out in Latvia (2 trials) in 2019 and 2020.

The first application took place at a crop stage BBCH 32-37 the second application was done 16-25 days later at BBCH 59-61.

Table 3.2-365: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS against PYRNAV – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC[i]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROSARO (125 g/L PTZ + 125 g/L TBZ)** 250 g/L EW	TORE-RO AZX 250 g/L EC	CA3642 at 1.0 L/ha compared to			
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha	1.0 L/ha 250 g AZX/ha	CA2702 0.8 L/ha 200 g AZX/ha	CA2445 0.8 L/ha 200 g PTZ/ha	PROSARO 1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha	TORERO 1.0 L/ha 250 g AZX/ha
North-East EPPO Zone														
Efficacy after 2 applications														
LEAF1 late	41	25	1	*Mean*	*8.3*	***~~98.8~~ 98.3***	*~~84.3~~ 84.8*	*~~98.8~~ 99.3*	*20.5*	-	*1=*	*1=*	*1=*	-
LEAF1 very late	5	40	1	*Mean*	*4.6*	***~~76.1~~ 76.6***	*~~67.4~~ 67.9*		*~~58.7~~ 59.8*	-	*1=*		*1=*	-
LEAF2 early	30	14	1	*Mean*	*7.4*	***~~97.3~~ 97.6***	*~~89.2~~ 88.6*	*~~95.9~~ 95.4*	*~~50.0~~ 50.3*	-	*1=*	*1=*	*1=*	-
LEAF3 early	27-30	13-14	2	*Mean* Min Max	*8.2* 5.1 11.3	***53.8*** ~~51.0~~ **50.7** ~~56.6~~ **56.8**	*~~53.1~~ 52.5* ~~17.6~~ 16.3 ~~88.5~~ 88.7	-	*31.9* 0.0 ~~63.7~~ 63.8	-	*2=*		*1<* 1=	-
			1	*Mean*	*11.3*	***~~56.6~~ 56.8***	*~~88.5~~ 88.7*	*~~93.8~~ 93.7*	*~~63.7~~ 63.8*	-	*1=*	*1=*	*1=*	-
Efficacy after 1 application														
LEAF3 early	15	-	1	*Mean*	*6.1*	***~~50.8~~ 50.1***	*~~83.6~~ 83.9*	*~~96.7~~ 96.3*	*~~1.6~~ 1.4*	-	*1=*	*1=*	*1=*	-
Germany														
Efficacy after 2 applications														
LEAF2 early	44	15	1	*Mean*	*9.8*	***~~90.8~~ 90.7***	*~~72.4~~ 72.0*	-	-	*~~91.8~~ 91.6*	*1>*	-	-	*1=*
LEAF2 late	58	29	1	*Mean*	*11.1*	***80.2***	*~~62.2~~ 62.3*	-	-	*~~82.9~~ 82.6*	*1>*	-	-	*1=*
LEAF3 early	44	15	1	*Mean*	*36.6*	***87.7***	*~~72.1~~ 72.2*	-	-	*~~80.6~~ 80.5*	*1>*	-	-	*1>*
Efficacy after 1 application														
LEAF2 late	29	-	1	*Mean*	*4.6*	***100.0***	*~~93.5~~ 93.4*	-	-	*100.0*	*1=*	-	-	*1=*
LEAF3 early	15	-	1	*Mean*	*33.0*	***90.3***	*~~73.3~~ 73.2*	-	-	*~~84.5~~ 84.7*	*1>*	-	-	*1>*
LEAF3 late	29	-	1	*Mean*	*35.2*	***90.9***	*74.1*	-	-	*~~85.5~~ 85.6*	*1>*	-	-	*1>*
LEAF4 early	15	-	1	*Mean*	*46.5*	***88.8***	*74.4*	-	-	*83.9*	*1>*	-	-	*1=*
LEAF4 late	29	-	1	*Mean*	*57.6*	***86.8***	*74.3*	-	-	*80.0*	*1>*	-	-	*1>*
Summary North-East and supporting trials (after 2 applications)														
LEAF2 early	30-44	14-15	2	*Mean* *Min* *Max*	*8.6* *7.4* *9.8*	***94.2*** ***90.7*** ***97.6***	*80.3* *72.0* *88.6*	 *95.4*	 *50.3*	 *91.6*	*2>*	*1=*	*1>*	*1=*
LEAF3 early	27-44	13-15	3	*Mean*	*17.7*	***65.1***	*59.1*	-	-	-	*2>*	-	-	-

				Min Max	*5.1* *36.6*	***50.7*** ***87.7***	*16.3* *88.7*				*1<*			
Summary North-East and supporting trials (after 1 application)														
LEAF3 early	15	-	2	*Mean* Min Max	*19.6* *6.1* *33.0*	***70.2*** ***50.1*** ***90.3***	*78.6* *73.2* *83.9*	-	 *96.3*	 *1.4* *84.7*	*1<* *1>*	-	*1<*	*2>*

[i] UTC: % infestation in untreated control at assessment date

** PTZ + TBC: 125g/l Prothioconazole, 125g/l Tebuconazole

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early assessment date (13 – 14 DA-B) ~~97.3~~ 97.6% efficacy was observed on leaf level 2. On leaf level 3 a mean efficacy of 53.8 % was observed. Performance of CA3642 applied at the dose 1.0 L/ha and assessed at an early date was comparable without any statistically significant difference to the reference product CA2445, although a numerical difference indicated a slightly higher efficacy for CA2445 at leaf level 3. Compared to CA2702, no statistical difference was recorded, for CA3642 a numerically higher efficacy was recorded at leaf level 3 in one trial and numerically lower in another trial. PROSARO showed significantly lower efficacy when compared to CA3642 on leaf level 3 but only numerically less efficacy on leaf level 2.

At a late and very late assessment date (25 and 40 DA-B) mean efficacy of ~~98.8~~ 98.3 and ~~76.1~~ 76.6% was observed on leaf level 1 respectively. Performance of CA3642 applied at dose rate 1.0 L/ha and assessed at a late and very late date was comparable to the reference products CA2445, CA2702 and PROSARO with no statistically significant differences. Although there was a numerically higher efficacy for CA3642 when compared to CA2702 at leaf level 1 late and PROSARO at leaf level 1 late and very late.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
Efficacy after one application was assessed 15 days (early assessments) after one application on leaf level 3.

At an early assessment date (15 DA-B) ~~50.8~~ 50.1 % efficacy was observed in leaf level 3. There was numerically higher efficacy on leaf level 3 for CA3642 when compared to PROSARO and numerically lower efficacy for CA3642 when compared to CA2702 and CA2445, but without statistical significance.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels of ~~50.8~~ 50.1 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

<u>Supporting trials</u>
In three trials from Germany, at an early assessment date (15 DA-B) ~~90.8~~ 90.7% efficacy was observed in leaf level 2 and 87.7 % was observed and on leaf level 3. Compared to CA2702, CA3642 had significantly higher performance on leaf level 2 and leaf level 3, compared to TORERO the efficacy from CA3642 was the same.
At a later assessment date (29DA-B) mean efficacy of 80.2 % was observed on leaf level 2. Performance of CA3642 applied at the dose rate 1.0 L/ha and assessed at a late date had a significantly higher efficacy on leaf level 2 for CA3642 when compared to CA2702.

After one application was assessed at an early assessment date (15 DA-B) 90.3 % efficacy was observed in leaf level 3. In leaf level 4 mean efficacy of 88.8 % was observed. Compared to CA2702, CA3642 applied at 1.0 L/ha had significantly higher performance at leaf level 3 and leaf level 4.
At a later assessment date (29 DA-B) after one application of 1.0 L/ha CA3642 a mean efficacy of 100 % was observed on leaf level 2. In leaf level 3 a mean efficacy of 90.9 % and leaf level 4 of 86.8 % was achieved. Compared to CA2702, CA3642 had significantly higher performance at leaf level 3 and leaf level 4, and compared to TORERO CA3642 had significantly higher efficacy on leaf level 3

At all assessments, with either one or two applications, CA3642 significantly or numerically reduced disease severity compared to untreated plots.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora chaetomioides* in oats

Comments of zRMS:

2 efficacy trials were carried out to control of *Pyrenophora chaetomioides* in oats in the North-East EPPO climatic zone. Also one trial conducted in Germany has been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha achieved high results with mean efficacy of 94,2% after 2 applications for the early assessment. Moderate level of control (70,2%) was presented after 1 application. Slight superior effectiveness of test product has been noted compared to the standards of CA2702 and Torero. Limited number of trials (3) was presented in Poland and Germany, but PYRNAV has local significance in Poland.
Based on the above summary, it can be concluded that CA3642 at 1 l/ha is effective for control of PYRNAV in winter oats in the NE zone.

Oats AVESS – PYRNAV – South-East EPPO zone

No data were available to support the target dose of CA3642 against - *Pyrenophora chaetomioides* (PYRNAV) on oat. However, the species *Pyrenophora teres* (PYRNTE) is also the causal agent of Net blotch of barely on winter barley (HORVW). Considering the pathogens share a genus it seems reasonable from an agronomic perspective to assume the positive effects of CA3642 applied at 1.0 L/ha on oat from the robust dataset presented for the closely related crop winter barley.

The dataset presented in – **winter barley (HORVW) /** *Pyrenophora teres* (PYRNTE) – showed that all assessments, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PYRNTE was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora chaetomioides* on oat in the South-East EPPO zone.

Comments of zRMS:

No efficacy trials were carried out to control of *Pyrenophora chaetomioides* in oats in the South-East EPPO climatic zone. The cMSs are kindly asked to consider this use on national level.

Summary of data on PYRNAV in oat

Data is presented from a total of three trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Pyrenophora chaetomioides* (PYRNAV) in oat. In all trial assessments across the Maritime and North-East EPPO zones applications of CA3642 reduced disease severity significantly or numerically when compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the two EPPO zones. In both the Maritime and North-East EPPO zone some assessments showed a significant increase in efficacy from CA3642 compared to the reference products CA2702, TORERO and PROSARO. The North-East EPPO zone had significantly comparable results for CA3642 and the reference products.

The mean efficacy in the Maritime EPPO zone on leaf levels 2, 3 and 4 at early or late assessments ranged from 80.2 % to 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.6 % to 57.6 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1, 2 and 3 at early or late assessments ranged from 50.8 to 98.8 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.6 % to 11.3 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of PYRNAV in oat.

Oat (AVESS) – Green leaf area

A total of 11 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 in terms of green leaf area in oat in the Maritime (4 trials), North-East (5 trials) and South-East (2 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (4 trials).
Trials from the North-East EPPO zone were carried out in Poland (3 trials) and Latvia (2 trial).
Trials from the South-East EPPO zone were carried out in Romania (2 trials).

In all trials the test product CA3642 was applied twice at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.
In some trial valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

AVESS – Green leaf area – Maritime EPPO zone

In four trials from the Maritime EPPO zone, the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha was assessed in terms of green leaf area. Trials were carried out in Germany (4 trials) in 2019 and 2020.
The first application took place at crop stage BBCH 30-32 and the second application was done 14-29 days later, at BBCH 55-61.

Table 3.2-366: Summary - Efficacy of CA3642 (1.0 L/ha) in AVESS assessed as green leaf area – valid assessments – Maritime EPPO zone

Part Rated	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**TORERO AZX 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha 200 g PTZ/ha**	**CA2445 0.8 L/ha 200 g PTZ/ha**	**TORERO 0.8 L/ha 200 g AZX/ha**
PLANT	49- 70	25- 47	4	*Mean*	*39.6*	***192.6***	*180.4*			*2<*		
				Min	4.8	**108.0**	112.4			2=		
				Max	88.5	**287.5**	287.5					
			2	*Mean*	*69.3*	***108.1***	*117.0*	*120.2*		*2<*	*2<*	
				Min	50.0	**108.0**	112.4	112.4				
				Max	88.5	**108.2**	121.6	128.0				
			2	*Mean*	*9.9*	***277.1***	*243.8*		*280.2*	*2=*		*2=*
				Min	4.8	**266.7**	200.0		260.4			
				Max	15.0	**287.5**	287.5		300.0			

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

Efficacy in terms of green leaf area was assessed on the whole plant at 25-35 DA-B. In two trials several pathogens were present. In two trials, just PUCCCA and PYRNAV were present respectively.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 8.0-187.5 % compared to the untreated control.

In four out of six assessments, the performance of CA3642 was comparable to the reference products. Performance of CA3642 applied at 1.0 L/ha was lower compared to the performance of CA2702 and CA2445 in two out of six assessments. This might have been due to the relatively high green leaf area at the previously mentioned assessments (50 and 88.5 %).

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha will have a positive effect on the green leaf area in oat affected by a range of pathogens in the Maritime EPPO zone.

Comments of zRMS:

The mean green leaf area in oats increased by 92,6% after 2 applications of CA3642 in 4 efficacy trials. Significant statistical differences between test and reference products can be observed in part of trials. CA3642 at 1 l/ha was slight inferior compared to CA2702 in 2 trials. Similar effect of control between products was visible also in 2 out of 4 trials. Overall, positive effect on green leaf area compared to untreated plants was observed in the Maritime EPPO zone.

AVESS – Green leaf area – North-East EPPO zone

In ~~six~~ five trials from the North-East EPPO zone, the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha was assessed in terms of green leaf area. Trials were carried out in Poland (3 trials) and Latvia (2 trial) between 2019 and 2021.
The first application took place at crop stage BBCH 32-37 and the second application was done 14-25 days later, at BBCH 52 - 61.

Table 3.2-367: Summary _ Efficacy of CA3642 (1.0 L/ha) in AVESS assessed as green leaf area – valid assessments – North-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROSARO (125 g/L PTZ + 125 g/L TBC)**[**] **250 g/L EW**	**DELARO (175 g/L PTZ + 150 g/L TFS)**[****] **325 g/L SC**	**CA3642 at 1.0 L/ha compared to**			
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha**	**1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha**	**CA2702 0.8 L/ha 200 g AZX/ha**	**CA2445 0.8 L/ha 200 g PTZ/ha**	**PROSARO 1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha**	**DELARO 325 SC 1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha**
PLANT	41-68	25-54	4	*Mean* Min Max	*39.4* 16.3 86.3	***120.2*** **105.0** **139.9**	*121.2* 98.5 161.3				4=			
			3	*Mean* Min Max	*44.6* 16.3 86.3	***125.2*** **113.0** **139.9**	*126.5* 98.5 161.3	*128.0* 110.1 138.0			3=	3=		
			2	*Mean* Min Max	*27.6* 23.8 31.3	***122.5*** **105.0** **139.9**	*112.4* 105.0 119.8		*98.3* 96.6 100.0		2=		2=	
			1	*Mean*	23.8	***131.5***				*147.1*				1=

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC
** PTZ + TBC: 125 g/L Prothioconazole, 125 g/L Tebuconazole
****PTZ + TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

Efficacy in terms of green leaf area was assessed on the whole plant at 24-54 DA-B. In one trial two diseases were present, in every other trial only a single disease was present.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 5.0 - 39.9 % compared to the untreated control

Performance of CA3642 applied at 1.0 L/ha was comparable to the performance of the used reference standards without any statistically significant differences.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha will have a positive effect on the green leaf area in oat affected by a range of pathogens in the North-East EPPO zone.

Comments of zRMS:

The mean green leaf area in oats increased by 22,4% after 2 applications of CA3642 in 5 efficacy trials. Significant statistical differences between test and reference products can be observed in part of trials. CA3642 at 1 l/ha was slight superior compared to other products in 4 trials. Inferior effect of control was visible in 1 trial. Overall, positive effect on green leaf area compared to untreated plants was observed in the North-East EPPO zone.

AVESS – Green leaf area – South-East EPPO zone

In ~~three~~ two trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at a dose rate of 1.0 L/ha was assessed in terms of green leaf area. Trials were carried out in Romania (2 trials) in 2019 and 2021.
The first application took place at crop stage BBCH 35-37 and the second application was done 14-21 days later, at BBCH 55-61.

Table 3.2-368: Summary – Efficacy of CA3642 (1.0 L/ha) in AVESS assessed as green leaf area – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	CA3642 at 1.0 L/ha compared to	
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha 200 g AZX/ha	CA2445 0.8 L/ha 200 g PTZ/ha
PLANT	39	25	1	*Mean*	*11.3*	***243.4***		*232.7*		*1=*
LEAF 1 early	46	26	1	*Mean*	*52.5*	***107.2***	*76.2*	*81.9*	*1=*	*1=*
LEAF 2 early	46	26	1	*Mean*	*58.0*	***122.1***	*89.7*	*102.2*	*1=*	*1=*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC
* Just one disease present

Efficacy in terms of green leaf area was assessed in one trial on the whole plant at 25 DA-B. In one trial green leaf area was assessed on leaf level 1 and 2 at 26 DA-B. In each of these trials just a single disease was present.
After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 143.4 % on the whole plant compared to the untreated control. This increase was statistically significant compared to untreated control. Reference product CA2445 had significantly higher performance than CA3642 in the trial.

On leaf level 1 an increase by 7.2 % and on leaf level 2 an increase by 22.1 % was observed. The increase of green leaf area induced by CA3642 at 1.0 L/ha on leaf level 1 and 2 was not statistically significant compared to the untreated control.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha will have a positive effect on the green leaf area in oat affected by a range of pathogens in the South-East EPPO zone.

Comments of zRMS:

The mean green leaf area in oats increased by 7,2-143,4% after 2 applications of CA3642 in 2 efficacy trials. No significant differences between test and reference products were visible in the submitted trials. Overall, positive effect on green leaf area compared to untreated plants was observed in the South-East EPPO zone.

Winter barley (HORVW)

Winter Barley (HORVW) – powdery mildew of barley (ERYSGH - *Blumeria graminis* f. sp. *hordei*)

A total of 19 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Powdery mildew of barley (ERYSGH) in winter barley in the Maritime (5 trials), North-East (10 trials) and South-East (4 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Czech Republic (1 trial), Great Britain (1 trial), Germany (1 trial) and France (2 trials).
Trials from the Mediterranean EPPO zone were carried out in Spain (2 trial).
The trial from the North-East EPPO zone was carried out in Latvia (4 trials), Lithuania (3 trials), and Poland (3 trials).
Trials from the South-East EPPO zone were carried out in Hungary (4 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

HORVW – ERYSGH – Maritime EPPO zone

A total of five trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against ERYSGH in the Maritime EPPO zone. Trials were carried out in Czech Republic (1 trial), Great Britain (1 trial), Germany (1 trial) and France (2 trials) between 2019 and 2021. The first application took place at crop stage BBCH 31-37 and the second application was done 14-25 days later, at BBCH 43-61.

Table 3.2-369: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against ERYSGH – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**[b]	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	**Summarized PTZ products EC**	**CA2702 AZX 250 g/L SC**	**MIRADOR XTRA AZX + CPZ**[**] **280 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha**		**0.6 L/ha**	**1.0 L/ha**	**Summarized PTZ products**	**CA2702**	**MIRADOR XTRA**
						150 g AZX/ha + 150 g PTZ/ha	**200 g PTZ/ha**	**150 g AZX/ha**	**200 g AZX/L + 80 g/L CKZ**		**0.6 L/ha**	**1.0 L/ha**
Efficacy after 2 applications												
LEAF1 very late	57-64	35-43	*3*	*Mean*	*11.8*	***76.8***	*79.4*			3=		
				Min	4.0	**30.5**	38.1					
				Max	20.9	**100.0**	100.0					
	57	35-36	*2*	*Mean*	*12.5*	***100.0***	*100.0*	*8.9*		2=	2>	
				Min	4.0	**100.0**	100.0	2.9				
				Max	20.9	**100.0**	100.0	15.0				
	64	43	*1*	*Mean*	*10.5*	***30.5***	*38.1*		*41.0*	1=		1=
	57	35	*1*	*Mean*	*20.3*	***100.0***	*100.0*	*2.9*		1=	1>	
LEAF2 early	32-37	15-17	*2*	*Mean*	*27.4*	***80.7***	*80.7*			2=		
				Min	4.4	**61.4**	61.4					
				Max	50.4	**100.0**	100.0					
	32	17	*1*	*Mean*	*4.4*	***61.4***	*61.4*			1=		
	37	15	*1*	*Mean*	*50.4*	***100.0***	*100.0*	*1.6*		1=	1>	
LEAF2 late	47	32	*1*	*Mean*	*12.3*	***72.4***	*66.7*			1=		
LEAF2 very late	53-64	35-46	*4*	*Mean*	*21.5*	***81.6***	*77.2*			4=		
				Min	5.1	**32.3**	19.7					
				Max	12.7	**100.0**	100.0					
	53-64	36-46	*3*	*Mean*	*9.2*	***76.5***	*73.2*			3=		
				Min	5.1	**32.3**	19.7					
				Max	12.7	**97.1**	100.0					
	57	35-36	*2*	*Mean*	*37.8*	***98.4***	*100.0*	*28.2*		2=	2>	
				Min	5.1	**96.9**	100.0	1.6				
				Max	70.5	**100.0**	100.0	54.9				
	53	39	*1*	*Mean*	*6.8*	***97.1***	*100.0*			1=		
	64	43	*1*	*Mean*	*12.7*	***32.3***	*19.7*		*33.9*	1=		1=
	57	35	*1*	*Mean*	*70.5*	***96.9***	*100.0*	*1.6*		1=	1>	

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	Summarized PTZ products EC	CA2702 AZX 250 g/L SC	MIRADOR XTRA AZX + CPZ** 280 g/L SC	CA3642 at 1.0 L/ha compared to		
				Rate		**1.0 L/ha**		**0.6 L/ha**	**1.0 L/ha**	**Summarized PTZ products**	**CA2702**	**MIRADOR XTRA**
						150 g AZX/ha + 150 g PTZ/ha	**200 g PTZ/ha**	**150 g AZX/ha**	**200 g AZX/L + 80 g/L CKZ**		**0.6 L/ha**	**1.0 L/ha**
LEAF3 early	32-37	15-17	*2*	*Mean*	*46.6*	***57.4***	*58.7*			2=		
				Min	15.5	**14.8**	17.4					
				Max	89.5	**100.0**	100.0					
	32	17	*1*	*Mean*	*15.5*	***14.8***	*17.4*			*1*=		
	37	15	*1*	*Mean*	*89.5*	***100.0***	*100.0*	*0.3*		1=	1>	
LEAF3 late	47	32	*1*	*Mean*	*20.7*	***39.6***	*24.6*			1=		
LEAF3 very late	64	43	*1*	*Mean*	*20.4*	***27.5***	*24.5*		*33.3*	1=		1=
Efficacy after 1 application												
LEAF2 late	22		*1*	*Mean*	*4.9*	***100.0***	*100.0*			1=		
LEAF3 early	14		*1*	*Mean*	*14.1*	***8.5***	*13.5*			1=		
LEAF3 late	22		*1*	*Mean*	*20.3*	***100.0***	*100.0*	*45.3*		1=	1>	

[b] UTC: % infestation in untreated control at assessment date
**AZX + CPZ: azoxystrobin 200 g /L + cuproconazole 80 g/L

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early assessment date (15-17 DA-B), 81 % efficacy was observed in leaf level 2. In leaf level 3 mean efficacy of 58 % was observed. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at an early date was comparable to the used reference standards (CA2445/JOAO, Proline 275) in all assessments and a significantly higher control was achieved compared to the reference standard CA2702.

At a later assessment date (32 DA-B), mean efficacy of 72 % was observed on leaf level 2. Compared to the reference products (CA2445/JOAO), a numerically higher control with a difference of 5-12 % was achieved on leaf level 2. On leaf level 3, an insufficient level of control was achieved for both, CA3642 (40 % efficacy) and the reference products CA2445/JOAO (25 % efficacy). The observed difference was statistically non-significant.

At very late assessment dates (35-43 DA-B), 77% efficacy was observed on leaf level 1. The achieved control was comparable to the reference products CA2445/JOAO and Proline 275 (79 % efficacy). Compared to the reference product CA2702, a significantly higher efficacy was observed on both assessments. On leaf level 2 and at a very late assessment date (35-46 DA-B), an overall efficacy of 82 % was observed being numerically higher than the control (77 %) of the reference products (CA2445/JOAO, Proline 275). Compared to the reference product CA2702, a significantly higher efficacy was observed on both assessments. On leaf level 3, an insufficient level of control was achieved for both, CA3642 (28 % efficacy) and the reference products CA2445/JOAO (25 % efficacy). The observed difference was statistically non-significant. Compared to the reference product MIRADOR EXTRA, a comparable efficacy was observed in three assessments on leaf level 1, 2 and 3.

Over the trial period, CA3642 achieved insufficient to excellent control (27.5 - 100 %) on all three upper leaf levels after two applications. At the majority of assessments, with applications, CA3642 significantly reduced disease severity compared to untreated plots.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
Efficacy after one application was assessed 14-22 days after application in two trials on leaf level 2 and 3.
Even though the infestation in the untreated check was below 5 % (4.9 %), this assessment is considered valid as the infestation increases throughout the trial period to up to 20 %. Already after the first application of CA3642 at 1.0 L/ha efficacy of 100 % was observed in one trial at two assessments. The used reference standards showed the same level of control of 100 % (CA2702) and 100 % (PROLINE 275) on leaf level 2, for leaf level 3, a significant difference was recorded compared to the reference product CA2702. In the second trial, insufficient control was achieved at the target dose rate (1.0 L/ha) of CA3642 and for the tested reference products (CA2445/JOAO).

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 100 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

At most assessments, with either 1 or 2 applications, the target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against ERYSGH was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Blumeria graminis* f. sp. *hordei* on winter barley in the Maritime EPPO zone.

Comments of zRMS:

5 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *hordei* in winter barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness in 1-2 applications. The mean efficacy was 100% on L2 and L3 in the late assessment after 1 application. Insufficient control was visible on L3 in the early assessment. After 2 applications, the test product at claimed dose rate had results of 77% on L1 and 72-82% on L2. Very low efficacy was observed on L3 in the early, late and very late assessments. CA2702 had significant inferior results compared to CA3642. No differences between test and other reference products have been noted. Limited number of trials has been submitted and cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, winter barley has minor status in Luxembourg. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

HORVW – ERYSGH – North-East EPPO zone

A total of ten trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against ERYSGH in the North-East EPPO zone. Trials were carried out in Latvia (4 trials), Lithuania (3 trials), and Poland (3 trials) between 2019 and 2021.

The first application took place at crop stage BBCH 31-37 and the second application was done 14-49 days later, at BBCH 49-61.

Table 3.2-370: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against ERYSGH – valid assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type / Rate	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC 1.0 L/ha 150 g/ ha AZX + 150 g/ ha PTZ	CA2702 AZX 250 g/L AZX SC 0.8 L/ha 200 g AZX/ha	CA2702 0.6 L/ha 150 g AZX/ha	CA2445 250 g/L EC 0.8 L/ha 200 g PTZ/ha	OSIRIS 65 EC EPC + MTC** 65 g/L EC 2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	DELARO 325 PTZ+TFS*** 325 g/L 1.0 L/ha 175 g/L PTZ + 150 g TFS/ha	CA3642 at 1.0 L/ha compared to CA2702 0.8 L/ha	CA2702 0.6 L/ha	CA2445 0.8 L/ha	OSIRIS 65 EC 2.0 L/ha	DELARO 325 1.0 L/ha
Efficacy after 2 applications																
LEAF1 early	40	15	*1*	*Mean*	*9.3*	***71.0***	*73.1*		*80.6*			1=		1=		
LEAF2 early	*35-40*	*14-17*	*4*	*Mean*	*18.8*	***86.8***			*89.9*			4=				
				Min	5.6	**65.4**			74.0							
				Max	54.3	**98.5**			98.5							
	35	*14-17*	*3*	*Mean*	*6.0*	***93.9***		*48.7*	*95.1*			3=		3>		
				Min	5.6	**90.5**		44.8	90.5							
				Max	8.4	**98.5**		54.8	98.5							
	40	15	*1*	*Mean*	*54.3*	***65.4***	*54.3*		*74.0*			1=		1=		
LEAF2 late	48-50	32-33	*2*	*Mean*	*5.0*	***86.6***			*90.4*					2=		
				Min	4.7	**77.4**			83.0							
				Max	5.3	**95.7**			97.9							
	50	32	*1*	*Mean*	*4.7*	***95.7***		*59.6*	*97.9*				1=	1=		
	48	33	*1*	*Mean*	*5.3*	***77.4***	*81.1*		*83.0*			1=		1=		
LEAF3 early	29-63	14-17	7	*Mean*	*10.4*	***75.8***										
				Min	4.5	**72.2**										
				Max	17.0	**100**										
	30-35	14-17	4	*Mean*	*13.8*	***95.0***		*59.0*					3>			
				Min	10.5	**90.6**		35.2					1=			
				Max	14.3	**99.2**		74.8								

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**CA2702 AZX 250 g/L AZX SC**		**CA2445 250 g/L EC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**DELARO 325 PTZ+TFS*** 325 g/L**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha** 150 g/ ha AZX + 150 g/ ha PTZ	**0.8 L/ha** 200 g AZX/ha	**0.6 L/ha** 150 g AZX/ha	**0.8 L/ha** 200 g PTZ/ha	**2.0 L/ha** 75 g EPC/ha + 55 g MTC/ha	**1.0 L/ha** 175 g/L PTZ + 150 g TFS/ha	**CA2702** 0.8 L/ha	**CA2702** 0.6 L/ha	**CA2445** 0.8 L/ha	**OSIRIS 65 EC** 2.0 L/ha	**DELARO 325** 1.0 L/ha
	29-63	14-15	3	*Mean*	*6.0*	***83.3***	*79.0*					3=				
				Min	4.5	**72.2**	62.2									
				Max	7.9	**100.0**	100.0									
	29-35	14-17	4	*Mean*	*11.3*	***90.0***			*92.6*					4=		
				Min	*4.5*	***77.8***			*86.7*							
				Max	*17*	***99.2***			*99.2*							
	42-63	14-15	2	*Mean*	*6.7*	***86.1***	*87.3*			*84.8*		2=			2=	
				Min	5.5	**72.2**	74.7			69.6						
				Max	7.9	**100.0**	100.0			100.0						
	30	14	1	*Mean*	*14.3*	***97.9***		*74.8*			*97.2*		1>			1=
Efficacy after 1 application																
LEAF2 late	25		1	*Mean*	*29.3*	***38.9***	*34.1*		*57.7*			1=		1=		
LEAF3 early	16		1	*Mean*	*10.3*	***97.1***		*82.5*			*97.1*		1>			1=
LEAF3 late	20-25		2	*Mean*	*32.4*	***76.5***			*85.2*					2=		
				Min	6.8	**54.5**			71.9							
				Max	58.0	**98.5**			98.5							
	20		1	*Mean*	*6.8*	***98.5***		*63.2*	*98.5*				1>	1=		
	25		1	*Mean*	58.0	***54.5***	*39.1*		*71.9*			1=		1=		
LEAF3 very late	49		1	*Mean*	*6.1*	***90.2***	*62.3*			*90.2*		1=			1=	

[b] UTC: % infestation in untreated control at assessment date

** EPC + MTC: Epoxiconazole 37.5g/l + Metconazole 27.5g/l
***PTZ+TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
One assessment of efficacy is available for leaf level 1 on an early assessment date (15 DA-B) showing no significant differences in efficacy between CA3642 and the reference products CA2702 and CA2445.

At an early assessment date (14-17 DA-B), 87 % efficacy was observed in leaf level 2 that was comparable to the efficacy of the reference product CA2445 in all 4 trials. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha, the test product CA3642 showed a significantly higher efficacy in all 3 early assessments and a numerically higher control at the late assessment.
At a later assessment date (32-33 DA-B), mean efficacy of 87 % was observed on leaf level 2. Compared to the reference products (CA2445), a comparable control was achieved.

At an early assessment date (14-17 DA-B), 76 % mean efficacy was observed in leaf level 3. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha, the test product CA3642 showed a significantly higher efficacy in 3 out of 4 assessments. Compared to the reference products (CA2445, OSIRIS 65 EC), a comparable control was achieved.

Even though the infestation in two untreated checks was below 5 % (4.5-4.7 %), these assessments are considered valid as the infestation increased throughout the trial period.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
Efficacy after one application was assessed 16-42 days after application in two trials on leaf level 2 and 3.
One assessment of efficacy is available for leaf level 2 showing no significant differences in efficacy between CA3642 and the reference products CA2702 and CA2445.
Four assessments of four trials are available to compare the efficacy of CA3642 with reference products on leaf level 3. An efficacy ranging from 77 % - 97 % was observed after the first application of CA3642 at early, late and very late assessment dates. CA3642 showed a significantly higher efficacy to the reference product CA2702 applied at 0.6 L/ha, equivalent to CA2702 at 0.8 L/ha and was equivalent to the reference products CA2445 and OSIRIS 65 EC.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 97 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

Over the trial period, CA3642 achieved acceptable to excellent control (71.0 - 100 %) on all three upper leaf levels after two applications. At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against ERYSGH was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Blumeria graminis* f. sp. *hordei* on winter barley in the North-East EPPO zone.

Comments of zRMS:

10 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *hordei* in winter barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 77-97% at 1 l/ha on L3 after 1 application. Insufficient results were observed on L2 in the late as-

sessment. In case of 2 applications, the test product at claimed dose rate had an effectiveness of 71% on L1 in the early assessment. Also moderate control of 76% in 7 trials was visible on L3 in the same term. CA3642 at 1 l/ha presented results of 87% on L2 in the early and late assessments. No significant differences between test and reference products were detected in most trials.
Based on the above summary, CA3642 at 1 l/ha after 1-2 applications is effective for control of ERYSGH in winter barley in the NE zone.

HORVW – ERYSGH – South-East EPPO zone

A total of four trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against ERYSGH in the South-East EPPO zone. Trials were carried out in Hungary (4 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 32-39 and the second application was done 14-28 days later, at BBCH 51-61.

Table 3.2-371: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against ERYSGH – valid assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 250 g/L AZX SC		PRIAXOR PCS + FLX** 225 g/L EC	CA2445 PTZ 250 g/L EC	CA3642 at 1.0 L/ha compared to			
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	1.5 L/ha 225 g/ha PCS + 112.5 g/ha FLX	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	CA2702 0.6 L/ha	PRIAXOR 1.5 L/ha	CA2445 0.8 L/ha
Efficacy after 2 applications														
LEAF1 early	43	15	*1*	*Mean*	*9.9*	***100.0***		*59.6*	*100.0*			1>	1=	
LEAF1 late	55	27-30	*2*	*Mean* Min Max	*10.0* 10.0 10.0	***100.0*** **100.0** **100.0**		*85.0* 70.0 100.0	*100.0* 100.0 100.0			2=	2=	
LEAF2 early	32-43	15	*3*	*Mean* Min Max	*17.8* 5.6 38.6	***97.3*** **94.6** **100.0**			*91.2* 80.9 98.2				1> 2=	
	40-43	15	*2*	*Mean* Min Max	*23.8* 8.9 38.6	***98.6*** **97.2** **100.0**		*35.3* 0.0 75.6	*89.5* 80.9 98.2			2>	1> 1=	
	32	15	*1*	*Mean*	*5.6*	***94.6***	*5.4*		*94.6*		1>		1=	
LEAF2 late	38-55	21-30	*3*	*Mean* Min Max	*31.8* 7.0 58.4	***96.7*** **91.4** **100.0**			*91.6* 83.3 100.0				3=	
	55	27-30	*2*	*Mean* Min Max	*44.2* 30.0 58.4	***95.7*** **91.4** **100.0**		*57.9* 50.0 65.8	*87.4* 83.3 91.4			*1>* 1=	*2=*	
	38	21	*1*	*Mean*	*7.0*	***98.6***	*61.4*		*100.0*		*1=*		*1=*	
LEAF2 very late	50	36	*1*	*Mean*	*5.9*	***74.6***	*88.1*		*66.1*	*93.2*	*1=*		*1=*	*1=*
LEAF3 early	28-32	14-15	*4*	*Mean* Min Max	*33.8* 7.6 60.0	***85.2*** **72.5** **100.0**			*76.2* 59.4 93.3				1> 2= 1<	
	28-32	14-15	*2*	*Mean* Min Max	*20.9* 7.6 34.2	***75.7*** **72.5** **78.9**	*49.6* 5.8 93.4		*61.3* 59.4 63.2		2=		2=	
	40-43	15	*2*	*Mean* Min Max	*49.9* 38.8 60.0	***94.7*** **89.3** **100.0**		*51.0* 48.5 53.5	*91.1* 88.9 93.3			2>	1> 1<	
	28	14	*1*	*Mean*	*7.6*	***78.9***	*93.4*		*63.2*	*76.3*	*1=*		*1=*	*1=*

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC** [b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 250 g/L AZX SC**		**PRIAXOR PCS + FLX** 225 g/L EC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**			
				Rate		**1.0 L/ha**	**0.8 L/ha**	**0.6 L/ha**	**1.5 L/ha**	**0.8 L/ha**	**CA2702**		**PRIAXOR**	**CA2445**
						150 g/ha AZX + 150 g/ha PTZ	**200 g AZX/ha**	**150 g AZX/ha**	**225 g/ha PCS + 112.5 g/ha FLX**	**200 g PTZ/ha**	**0.8 L/ha**	**0.6 L/ha**	**1.5 L/ha**	**0.8 L/ha**
LEAF3 late	38-55	21-30	*2*	*Mean*	*64.0*	***94.7***			*82.6*					1>
				Min	58.0	**89.5**			71.4					1=
				Max	70.0	**100.0**			93.8					
	38	21	*1*	*Mean*	*58.0*	***89.5***	*73.3*		*93.8*		1=		1=	
	55	30	*1*	*Mean*	*70.0*	***100.0***		*57.1*	*71.4*			1>	1>	
Efficacy after 1 application														
LEAF2	25-28		*2*	*Mean*	*8.9*	***80.7***		*6.8*	*70.5*			*2>*	*1>*	
				Min	8.8	**61.4**		0	52.3				1=	
				Max	8.9	**100.0**		13.5	88.8					
LEAF3	25-28		*2*	*Mean*	*30.8*	***93.3***		*32.5*	*76.1*			2>	2>	
				Min	25.9	**86.5**		28.2	64.9					
				Max	35.6	**100.0**		36.8	87.3					

[b] UTC: % infestation in untreated control at assessment date

** PCS + FLX: 150 g/l Pyraclostrobin, 75 g/l Fluxapyroxad

After two applications of CA3642 applied at 1.0 L/ha

One assessment of efficacy is available for leaf level 1 on an early assessment date (15 DA-B) showing no significant differences in efficacy between CA3642 and the reference product PRIAXOR. Compared to the reference product CA2702 a significantly higher efficacy was observed for CA3642. At late assessment dates (27-30 DA-B), 100 % efficacy was observed in leaf level 1 that was comparable to the efficacy of the reference products CA2702 and PRIAXOR.

At an early assessment date (15 DA-B), 97 % efficacy of CA3642 was observed in leaf level 2 that was comparable to the efficacy of the reference product PRIAXOR in 2 assessments and gave significantly higher efficacy in 1 assessment. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha, the test product CA3642 showed a significantly higher efficacy in all 2 early assessments. At a later assessment date (38-55 DA-B), mean efficacy of 97 % for CA3642 was observed on leaf level 2. Compared to the reference product PRIAXOR, a comparable control was achieved. Compared to CA2702, CA3642 gave significantly higher efficacy in 1 assessment and was comparable in 2 assessments.

At early assessment dates (14-15 DA-B), 85 % efficacy of CA3642 was observed in leaf level 3. Compared to the reference product PRIAXOR, a significantly higher control was observed in one out of four assessments and a comparable control was observed in two out of four assessments. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha, the test product CA3642 showed a significantly higher efficacy in 2 out of 2 assessments, and comparable where CA2702 was applied at 0.8 L/ha.
At late assessment dates (21-30 DA-B), 95 % efficacy of CA3642 was observed in leaf level 3. Compared to the reference product PRIAXOR, a significantly higher control was observed in one out of two assessments and a comparable control was observed in one out of two assessments.

After one application of CA3642 applied at 1.0 L/ha

Efficacy after one application was assessed 25-28 days after application in two trials on leaf level 2 and 3.
Two assessments are available for leaf level 2 showing significantly higher efficacy of CA3642 compared the reference product CA2702. Compared to the reference product PRIAXOR, CA3642 showed a significantly or numerically higher efficacy with difference between 9-12 %.

Two assessments are available to compare the efficacy of CA3642 with reference products CA2702 and PRIAXOR on leaf level 3. A mean efficacy of 93 % was observed after the first application of CA3642. CA3642 showed a significantly higher efficacy compared to both reference products at all assessments.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 93 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

Over the trial period, CA3642 achieved acceptable to excellent control (74.5 - 100 %) on all three upper leaf levels after two applications. In the majority of assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots, in some assessments the difference was not statistically different but full control was achieved. The efficacy against ERYSGH was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Blumeria graminis* f. sp. *hordei* on winter barley in the South-East EPPO zone.

Comments of zRMS:

4 efficacy trials were conducted to control of *Blumeria graminis* f.sp. *hordei* in winter barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 1-2 applications. The mean efficacy was 81% on L2 and 93% on L3 after 1 application. In case of 2 applications, the test product at claimed dose rate presented results of 97-100% on L1, 75-97% on L2 and 85-95% on L3. CA2702 was slight inferior compared to CA3642 whilst similar effect was visible for other reference products. Limited number of trials was available and cMSs are kindly asked to consider this use on national level.

Summary of data on ERYSGH in winter barley

Data is presented from a total of 19 trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Blumeria graminis f. sp. avenae* (ERYSGH) in winter barley. In the vast majority of trial assessments across the Maritime, North-East and South-East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the three EPPO zones. In the Maritime, North-East and South-East EPPO zones the vast majority of trial assessments indicated a significantly higher or comparable efficacy for CA3642 compared to the reference products, the efficacy of CA3642 against ERYSGH was considered sufficient in most cases.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 27.5 – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.4 % – 89.5 %.

The mean efficacy in the North-East zone on leaf levels 1 to 3 at early or late assessments ranged from 65.4 – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.5 % – 54.3 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late or very late assessments ranged from 74.6 % – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 5.6 % – 70.0 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of ERYSGH in winter barley.

Winter Barley (HORVW) – brown rust of barley (PUCCHD - *Puccinia hordei*)

A total of 32 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Brown rust of barley (PUCCHD) in winter barley in the Maritime (9 trials), North-East (13 trials) and South-East (10 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Great Britain (2 trials), Germany (5 trials) and France (2 trials).
The trial from the North-East EPPO zone was carried out in Latvia (5 trials), Lithuania (1 trial), and Poland (7 trials).
Trials from the South-East EPPO zone were carried out in Hungary (7 trials), Romania (2 trials) and Slovakia (1 trial).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

HORVW – PUCCHD – Maritime EPPO zone

A total of nine trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PUCCHD in the Maritime EPPO zone. Trials were carried out in Great Britain (2 trials), Germany (5 trials) and France (2 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-31 days later, at BBCH 39-59.

Table 3.2-372: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PUCCHD – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	Summarized PTZ products EC	CA2702 250 g/L AZX SC		CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	Summarized PTZ products	CA2702 0.8 L/ha	0.6 L/ha
Efficacy after 2 applications												
LEAF1 early	36	15	*1*	*Mean*	*4.8*	***100.0***	*100.0*	*93.8*		1=	1=	
LEAF1 late	50-52	28-29	3	*Mean*	23.2	**95.9**	98.5	84.8		3=	2=	
				Min	20.1	**89.4**	97.1	72.0			1>	
				Max	28.9	**100.0**	100.0	93.0				
LEAF1 very late	53-57	36-39	*3*	*Mean*	*19.8*	***98.1***	*95.1*			3=		
				Min	12.1	**96.7**	92.3					
				Max	18.6	**100.0**	99.5					
	53-56	37-39	*2*	*Mean*	*15.2*	***96.7***	*92.9*	*91.9*		2=	2=	
				Min	12.1	**96.7**	92.3	90.1				
				Max	18.2	**96.7**	93.4	93.4				
	57	36	*1*	*Mean*	*18.6*	***100.0***	*99.5*		*99.5*	1=		1=
LEAF2 early	31-40	14-17	*6*	*Mean*	*15.9*	***94.6***	*95.9*	*78.0*		6=	4=	
				Min	5.0	**85.6**	92.8	55.6			2>	
				Max	57.3	**100.0**	100.0	94.0				
LEAF2 late	49-62	28-39	*6*	*Mean*	*41.9*	***91.5***	*94.5*	86.0		6=	4=	
				Min	6.4	**74.5**	81.8	71.4			2>	
				Max	93.6	**100.0**	100.0	94.5				
	49-62	28-39	*5*	*Mean*	*48.6*	***94.8***	*97.0*	*83.6*		5=	3=	
				Min	6.4	**90.1**	92.2	79.3			2>	
				Max	93.6	**100.0**	100.0	94.5				
	57	36	*1*	*Mean*	*8.1*	***74.5***	*81.8*	*71.4*		1=	1=	
LEAF2 very late	53-57	36-39	2	*Mean*	*18.6*	***95.5***	*94.5*			2=		
				Min	5.9	**91.0**	88.3					
				Max	33.2	**100.0**	100.0					
	57	36	1	*Mean*	*5.9*	***100.0***	*100.0*		*100.0*	1=		1=
	53	39	1	*Mean*	*33.2*	***91.0***	*88.3*	*83.7*		1=	1=	
LEAF3 early	31-49	14-18	*6*	*Mean*	*25.2*	***90.9***	*91.9*	*65.6*		6=	3>	
				Min	5.1	**83.9**	83.9	0			3=	
				Max	90.4	**100.0**	100.0	95.0				
	31-40	14-17	*5*	*Mean*	*12.1*	***92.4***	*92.9*	*59.7*		*5=*	*3>*	
				Min	5.1	**83.9**	83.9	0			2=	
				Max	90.4	**100.0**	100.0	80.4				

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**Summarized PTZ products EC**	**CA2702 250 g/L AZX SC**		**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**Summarized PTZ products**	**CA2702**	
						150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**		**0.8 L/ha**	**0.6 L/ha**
	49	18	1	*Mean*	*8.0*	***86.1***	*91.7*	*95.0*		1=	1=	
LEAF3 late	49-52	27-28	*2*	*Mean*	*49.3*	***93.0***	*91.9*	*80.1*		2=	1>	
				Min	14.8	**86.0**	84.6	79.2			1=	
				Max	83.7	**100.0**	99.2	80.9				
Efficacy after 1 application												
LEAF3	21-24		*3*	*Mean*	*28.9*	***89.5***	*89.9*	*73.0*		3=	2>	
				Min	6.8	**77.6**	79.6	64.3			1=	
				Max	47.8	**100.0**	100.0	78.7				

[b] UTC: % infestation in untreated control at assessment date

** AZX + CPZ: azoxystrobin 200 g /L + cuproconazole 80 g/L

After two applications of CA3642 applied at 1.0 L/ha

One assessment of efficacy is available for leaf level 1 on an early assessment date (15 DA-B) showing no significant differences in efficacy between CA3642 and the reference products CA2445/JOAO and CA2702 as all products gave full control.

At late assessment dates (28-29 DA-B) and at very late assessment dates (36-39 DA-B), 96 % and 98 % efficacy were observed in leaf level 1, respectively. The observed efficacy was comparable to the efficacy of the reference products CA2445/JOAO and CA2702, except 1 assessment where CA3642 gave significantly higher efficacy compared to the latter product.

At early assessment dates (14-17 DA-B), 95 % efficacy of CA3642 was observed in leaf level 2 that was comparable to the efficacy of the reference product CA2445/JOAO. Compared to CA2702 CA3642 gave comparable efficacy in 4 trials and significantly better in 2 trials. At late assessment dates (27-31 DA-B), mean efficacy of 92 % for CA3642 was observed on leaf level 2. Compared to the reference product CA2445/JOAO, Proline and CA2702, a comparable or significantly higher control was achieved. At very late assessment dates (36-39 DA-B), 96 % efficacy of CA3642 was observed in leaf level 2 that was comparable to the efficacy of the reference product CA2445/JOAO, Proline and CA2702.

At early assessment dates (14-18 DA-B), 91% efficacy of CA3642 was observed in leaf level 3 that was comparable to the efficacy of the reference product CA2445/JOAO. Compared to CA2702 CA3642 gave comparable efficacy in 3 trials and significantly better in 3 trials. At late assessment dates (27-28 DA-B), mean efficacy of 93 % for CA3642 was observed on leaf level 3. Compared to the reference product CA2445/JOAO, Proline and CA2702, a comparable or significantly higher control was achieved.

After one application of CA3642 applied at 1.0 L/ha

Efficacy after one application was assessed 21-24 days after application in three trials on leaf level 3 and a mean efficacy of 90 % was observed for the test product CA3642. Comparable efficacy was recorded for the reference products CA2445/JOAO. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha, the test product CA3642 showed a significantly higher efficacy in 2 out of 3 assessments.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 93 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

Over the trial period, CA3642 achieved acceptable to excellent control (90.9 - 100 %) on all three upper leaf levels after two applications. At all assessments, with either 1 or 2 applications, target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PUCCHD was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Puccinia hordei* on winter barley in the Maritime EPPO zone.

Comments of zRMS:

9 efficacy trials were conducted to control of *Puccinia hordei* in winter barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness after 1-2 applications. The mean efficacy was 89,5% after 1 application. In case of 2 applications, the test product at claimed dose rate presented results of 96-100% on L1,

92-96% on L2 and 91-93% on L3. No significant differences between CA3642 and the reference products containing prothioconazole were observed. CA2702 achieved similar or slight inferior effect.
Based on the above summary, CA3642 at 1 l/ha after 1-2 applications is effective for control of PUCCHD in winter barley in the MAR zone.

HORVW – PUCCHD – North-East EPPO zone

A total of 13 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PUCCHD in the North-East EPPO zone. Trials were carried out in Latvia (5 trials), Lithuania (1 trial), and Poland (7 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 30-37 and the second application was done 15-33 days later, at BBCH 39-61.

Table 3.2-373: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PUCCHD – valid assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [b]	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2445 250 g/L PTZ EC	CA2702 250 g/L AZX SC		OSIRIS 65 EC EPC + MTC[**] 65 g/L EC	DELARO 325 PTZ+TFS[***] 325 g/L SC	CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	0.8 L/ha 200 g PTZ/ha	0.6 L/ha 150 g AZX/ha	0.8 L/ha 200 g AZX/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha	CA2445 0.8 L/ha	CA2702 0.6 L/ha	0.8 L/ha	OSIRIS 65 EC 2.0 L/ha	DELARO 325 1.0 L/ha
Efficacy after 2 applications																
LEAF1 early	40	15	*1*	*Mean*	*6.3*	***98.4***	*98.4*		*93.7*			1=		1=		
LEAF1 late	48-56	22-33	*10*	*Mean*	*57.5*	***92.4***										
				Min	4.5	**53.4**										
				Max	28.2	**100.0**										
	48-55	22-33	*5*	*Mean*	*12.0*	***99.7***	*98.1*					5=				
				Min	4.5	**98.6**	92.8									
				Max	19.0	**100.0**	100.0									
	48-56	22-33	*5*	*Mean*	*12.2*	***89.9***			90.7					5=		
				Min	4.5	**53.4**			56.9							
				Max	28.2	**100.0**			100.0							
	48-55	27-33	*5*	*Mean*	*53.8*	***93.7***		*86.8*					1>			
				Min	4.8	**86.8**		78.0					4=			
				Max	19.0	**100.0**		97.8								
	49-56	24-33	3	*Mean*	*16.6*	***83.7***			*84.9*	*83.6*				3=	3=	
				Min	5.8	**53.4**			56.9	51.7						
				Max	15.8	**100.0**			99.4	99.6						
	49-55	28-33	3	*Mean*	*7.0*	***91.3***		*80.2*			*93.8*		*1>*			*3=*
				Min	4.8	**86.8**		78.0			90.6		2=			
				Max	10.9	**100.0**		83.3			100.0					
	48	27	2	*Mean*	16.4	**100.0**	99.1	96.8				2=	2=			
				Min	13.8	**100.0**	98.6	95.8								
				Max	19.0	**100.0**	99.5	97.8								
LEAF2 early	33-45	13-15	4	*Mean*	*10.5*	***93.9***										
				Min	5.6	**91.1**										

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC b**	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	**CA2445 250 g/L PTZ EC**	**CA2702 250 g/L AZX SC**		**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**DELARO 325 PTZ+TFS*** 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha** 150 g/ha AZX + 150 g/ha PTZ	**0.8 L/ha** 200 g PTZ/ha	**0.6 L/ha** 150 g AZX/ha	**0.8 L/ha** 200 g AZX/ha	**2.0 L/ha** 75 g EPC/ha + 55 g MTC/ha	**1.0 L/ha** 175 g PTZ/ha + 150 g TFS/ha	**CA2445** 0.8 L/ha	**CA2702** 0.6 L/ha	0.8 L/ha	**OSIRIS 65 EC** 2.0 L/ha	**DELARO 325** 1.0 L/ha
				Max	15.6	**96.8**										
	40-43	15	2	*Mean*	*10.4*	***93.8***			*86.3*					2=		
				Min	10.1	**91.5**			78.2							
				Max	10.6	**96.0**			94.3							
	33-35	13-14	2	*Mean*	*10.6*	***93.9***		*85.2*			*95.1*		1>			2=
				Min	5.6	**91.1**		76.8			92.9		1=			
				Max	15.6	**96.8**		93.6			97.4					
	43	15	1	*Mean*	*10.1*	***96.0***	*92.1*		*78.2*			*1=*		*1=*		
	40	15	1	*Mean*	*10.6*	***91.5***			*94.3*	*98.1*				*1=*	*1=*	
LEAF2 late	40-68	24-36	*8*	*Mean*	*14.2*	***96.1***										
				Min	7.1	**88.9**										
				Max	24.0	**100.0**										
	40-68	22-36	*6*	*Mean*	*18.9*	***97.8***			*97.5*					6=		
				Min	7.1	**92.5**			93.3							
				Max	24.0	**100.0**			100.0							
	40-68	22-36	*5*	*Mean*	*14.3*	***98.8***	*98.0*		*97.4*			5=		5=		
				Min	10.1	**96.4**	93.9		93.3							
				Max	16.6	**100.0**	100.0		100.0							
	50-55	31-33	*2*	*Mean*	*8.9*	***90.9***		*76.4*			*93.0*		1>			2=
				Min	7.1	**88.9**		73.2			91.7		1=			
				Max	10.8	**93.0**		79.6			94.4					
	49-68	24-36	*3*	*Mean*	*17.5*	***96.7***			*97.0*	*98.3*				3=	3=	
				Min	11.9	**92.5**			93.3	95.8						
				Max	24.0	**99.4**			99.4	99.6						
	52	24	*2*	*Mean*	14.3	**98.9**	98.5		96.4	97.6		2=		2=	2=	
				Min	11.9	**98.3**	97.5		93.3	95.8						
				Max	16.6	**99.4**	99.4		99.4	99.4						

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC** [b]	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	**CA2445 250 g/L PTZ EC**	**CA2702 250 g/L AZX SC**		**OSIRIS 65 EC EPC + MTC**[**] **65 g/L EC**	**DELARO 325 PTZ+TFS**[***] **325 g/L SC**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ha PTZ**	**0.8 L/ha** **200 g PTZ/ha**	**0.6 L/ha** **150 g AZX/ha**	**0.8 L/ha** **200 g AZX/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha** **175 g PTZ/ha + 150 g TFS/ha**	**CA2445** **0.8 L/ha**	**CA2702** **0.6 L/ha**	**0.8 L/ha**	**OSIRIS 65 EC** **2.0 L/ha**	**DELARO 325** **1.0 L/ha**
LEAF3 early	35-63	13-15	*4*	*Mean*	*13.8*	***94.0***										
				Min	4.8	**78.8**										
				Max	33.5	**100.0**										
	43-63	15	*2*	*Mean*	*8.5*	***89.3***	*93.6*		*93.6*	*94.8*		*1*=		*1*=	*1*=	
				Min	4.8	**78.7**	93.4		93.4	93.8		1<		1<	1<	
				Max	12.2	**100.0**	93.8		93.8	95.9						
	35	13-14	*2*	*Mean*	*19.0*	***98.5***		*81.5*					1>			
				Min	4.5	**97.0**		68.9					1=			
				Max	33.5	**100.0**		94.0								
	35	14	*1*	*Mean*	*4.5*	***100.0***	*100.0*	*68.9*				1=	1>			
	35	13	*1*	*Mean*	*33.5*	***97.0***		*94.0*			*97.9*		1=			1=
LEAF3 very late	68	36	1	*Mean*	*34.3*	***98.5***	98.3		*96.5*	*97.7*		1=		1=	1=	
Efficacy after 1 application																
LEAF3 early	14		1	*Mean*	8.0	**95.0**		80.0			98.8		1=			1=
LEAF3 late	22		1	*Mean*	*8.6*	***91.9***		*94.2*			*96.5*		1=			1=

[b] UTC: % infestation in untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/l + Metconazole 27.5g/l
*** PTZ+TFS: 175 g/l Prothioconazole, 150 g/l Trifloxystrobin

After two applications of CA3642 applied at 1.0 L/ha

One assessment of efficacy is available for leaf level 1 on an early assessment date (15 DA-B) showing no significant differences in efficacy between CA3642 and the reference products CA2702 and CA2445. For the test product CA3642 an excellent efficacy of 98 % was recorded. At late assessment dates (22-33 DA-B), 90 – 100 % efficacy was observed in leaf level 1 that was comparable to the efficacy of the reference product CA2445 and CA2702 applied at 0.8 L/ha in 5 trials. In 3 of these trials OSIRIS was applied which gave comparable efficacy to CA3642. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha in 5 trials, the test product CA3642 showed a significantly higher efficacy in one out of three late assessments. In 3 of these 5 trials Delaro was applied which gave comparable efficacy to CA3642.

At early assessment dates (14-17 DA-B), 94 % efficacy was observed in leaf level 2 that was comparable to the efficacy of the reference products CA2445, CA2702 at 0.8 L/ha, OSIRIS and Delaro. Compared to CA2702 applied at 0.6 L/ha efficacy was significantly higher in 1 assessment and equivalent in the other. At later assessment dates (22-36 DA-B), an excellent mean efficacy of 96 % was observed on leaf level 2. Compared to the reference products (CA2445, CA2702, and DELARO 325) an equivalent control was observed except for 1 assessment whereby CA3642 gave significantly higher efficacy compared to CA2702 at 0.6 L/ha

At an early assessment date (13-15 DA-B), 94 % mean efficacy was observed from 4 trials in leaf level 3. Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.6 L/ha, the test product CA3642 showed a significantly higher efficacy in 1 out of 2 assessments. Compared to the reference products (CA2445, OSIRIS 65 EC), a comparable control was achieved in one trial, while in a second trial a lower however still acceptable control was achieved. At a late assessment on leaf 3 all treatments gave excellent control of 97-99%.

Even though the infestation in two untreated checks was below 5 % (4.5-4.8 %), these assessments are considered valid as the infestation increased throughout the trial period.

After one application of CA3642 applied at 1.0 L/ha

Efficacy after one application was assessed 14-22 days after application in one trial on leaf level 3. Two assessments are available to compare the efficacy of CA3642 with reference products on leaf level 3. An efficacy of 95% and 92% was observed after the first application of CA3642 at early and late assessment dates, respectively. CA3642 showed a similar efficacy compared to the reference products CA2702 and DELARO 325.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 95 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

Over the trial period, CA3642 achieved acceptable to excellent control (84 - 100 %) on all three upper leaf levels after two applications. At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PUCCHD was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Puccinia hordei* on winter barley in the North-East EPPO zone.

Comments of zRMS:

13 efficacy trials were conducted to control of *Puccinia hordei* in winter barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness after 1-2 applications. The mean efficacy was 92-95% on L3 after 1 application. The test product at claimed dose rate presented results of 92-98% on L1, 94-96% on L2 and 94-99% on L3 after 2 applications. No significant differences between test and reference products were observed.
Based on the above summary, CA3642 at 1 l/ha after 1-2 applications is effective for control of PUCCHD in winter barley in the NE zone.

HORVW – PUCCHD – South-East EPPO zone

A total of ten trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PUCCHD in the South-East EPPO zone. Trials were carried out in Hungary (7 trials), Romania (2 trials) and Slovakia (1 trial) between 2019 and 2021.
The first application took place at crop stage BBCH 31-39 and the second application was done 14-35 days later, at BBCH 41-61.

Table 3.2-374: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PUCCHD – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type Rate	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC 1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	CA2445 250 g/L PTZ EC 0.8 L/ha 200 g PTZ/ha	CA2702 AZX 250 g/L SC 0.8 L/ha 200 g AZX/ha	CA2702 0.6 L/ha 150 g ATX/ha	PRIAXOR PCS + FLX** 225 g/L EC 1.5 L/ha 225 g/ha PCS + 112.5 g/ha FLX	CA3642 at 1.0 L/ha compared to CA2445 0.8 L/ha	CA2702 0.8 L/ha	CA2702 0.6 L/ha	PRIAXOR 1.5 L/ha
Efficacy after 2 applications														
LEAF1 late	42-56	28-35	*2*	*Mean*	*8.9*	***98.6***	*98.1*	*98.6*		*100.0*	2=	2=		1>
				Min	7.4	**97.1**	96.1	97.1		100.0				1=
				Max	10.3	**100.0**	100.0	100.0		100.0				
LEAF1 very late	50-68	36-45	*6*	*Mean*	*9.6*	***96.3***								
				Min	4.6	**77.3**								
				Max	20.0	**100.0**								
	50-68	36-45	*5*	*Mean*	*7.5*	***95.5***		*93.8*				1>		
				Min	4.6	**77.3**		69.1				4=		
				Max	11.0	**100.0**		100.0						
	54-68	36-45	*5*	*Mean*	*9.3*	***100.0***				*100.0*				5=
				Min	4.6	**100.0**				100.0				
				Max	20.0	**100.0**				100.0				
	50-68	36-45	*4*	*Mean*	*6.6*	***100.0***		*100.0*		*100.0*		*4=*		*4=*
				Min	4.6	**100.0**		100.0		100.0				
				Max	9.6	**100.0**		100.0		100.0				
	50-51	36	*2*	*Mean*	*8.6*	***88.9***	*94.1*	*84.6*			*1=*	*1>*		
				Min	6.2	**77.3**	88.2	69.1			1<	1=		
				Max	11.0	**100.0**	100.0	100.0						
	50	36	*1*	*Mean*	*6.2*	***100.0***	*100.0*	*100.0*		*100.0*	*1=*	*1=*		*1=*
	57	38	*1*	*Mean*	*20.0*	***100.0***			*100.0*	*100.0*			*1=*	*1=*
LEAF2 early	30	15	*1*	*Mean*	*8.9*	***93.2***	*94.2*	*88.0*			1=	1>		
LEAF2 late	42-59	24-36	3	*Mean*	*15.3*	***96.5***	*97.1*	*97.8*			3=	3=		
				Min	11.5	**94.7**	94.2	95.3						
				Max	19.0	**100.0**	99.0	99.4						
	42-68	24-39	*2*	*Mean*	*12.2*	***97.4***	*96.2*	*97.4*		*98.9*	2=	2=		1=
				Min	15.4	**94.7**	94.2	95.3		98.4				1<
				Max	19.0	**100.0**	98.1	99.4		99.4				
LEAF2 very late	50-68	36-45	*6*	*Mean*	*18.1*	***96.8***								
				Min	11.2	**80.5**								
				Max	30.0	**100.0**								
	50-68	36-45	*5*	*Mean*	*15.7*	***96.1***		*95.0*				*5=*		

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC** [b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**CA2445 250 g/L PTZ EC**	**CA2702 AZX 250 g/L SC**		**PRIAXOR PCS + FLX** [**] **225 g/L EC**	**CA3642 at 1.0 L/ha compared to**			
				Rate		**1.0 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**0.6 L/ha**	**1.5 L/ha**	**CA2445**	**CA2702**		**PRIAXOR**
						150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g ATX/ha**	**225 g/ha PCS + 112.5 g/ha FLX**	**0.8 L/ha**	**0.8 L/ha**	**0.6 L/ha**	**1.5 L/ha**
				Min Max	11.2 21.0	**80.5** **100.0**		74.8 100.0						
	50-68	36-45	5	*Mean* Min Max	*14.4* 11.2 18.2	***100.0*** **100.0** **100.0**		*100.0* 100.0 100.0		*100.0* 100.0 100.0		*5=*		*5=*
	50-51	36	*2*	*Mean* Min Max	*16.1* 11.2 21.0	***90.3*** **80.5** **100.0**	*81.2* 62.4 100.0	*85.4* 74.8 100.0			*2=*	*2=*		
	57	38	*1*	*Mean*	30.0	***100.0***			*100.0*	*100.0*			*1=*	*1=*
LEAF3 early	28-37	14-16	*4*	*Mean* Min Max	*7.9* 5.0 13.9	***91.6*** **77.0** **100.0**								
	28-37	14-16	*3*	*Mean* Min Max	*8.8* 5.7 13.9	***91.6*** **77.0** **100.0**	*93.1* 86.2 98.5	*75.2* 52.6 100.0			2= 1<	1> 2=		
	28-37	14-16	*3*	*Mean* Min Max	*5.8* 5.0 6.8	***96.5*** **89.5** **100.0**				*99.4* 98.2 100.0				*3=*
	34	15	*1*	*Mean*	*5.0*	***100.0***			*100.0*	*100.0*			*1=*	*1=*
LEAF3 late	36-42	21-26	*3*	*Mean* Min Max	*16.5* 5.4 34.1	***95.7*** **87.0** **100.0**		*100.0* 100.0 100.0		*99.7* 99.0 100.0		*3=*		*3=*
	36	22	*1*	*Mean*	*10.0*	***87.0***	*98.0*	*100.0*		*99.0*	*1=*	*1=*		*1=*
LEAF3 very late	54-60	38	2	*Mean* Min Max	19.9 16.2 23.5	***100.0*** **100.0** **100.0**		*100.0* 100.0 100.0		*100.0* 100.0 100.0		2=		

[b] UTC: % infestation in untreated control at assessment date
** PCS + FLX: 150 g/l Pyraclostrobin, 75 g/l Fluxapyroxad

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
Two assessments of efficacy are available for leaf level 1 on a late assessment date (28-35 DA-B) with a mean efficacy of 99 % and showing no significant differences in efficacy between CA3642 and the reference products CA2445 and CA2702.
At very late assessment dates (27-30 DA-B), a mean efficacy of 96 % was observed in leaf level 1 that was comparable to the efficacy of the reference products CA2702 and PRIAXOR in most assessments. A higher efficacy was recorded for the test product CA3642 compared to the reference product CA2702 in 1 out of 5 assessments and a lower efficacy compared to the reference product CA2445 in 1 out of 2 assessments.

At an early assessment date (15 DA-B), 93 % efficacy of CA3642 was observed in leaf level 2 that was comparable to the efficacy of the reference product CA2445 and higher compared to reference product CA2702. At a later assessment date (28-35 DA-B), mean efficacy of 97 % for CA3642 was observed on leaf level 2. Compared to the reference products CA2445 and CA2702, a comparable control was achieved. Compared to the reference products PRIAXOR, a comparable control was achieved in 1 out of 2 assessments and a lower efficacy in 1 out 2 assessments were observed. In the latter case, an efficacy of 95 % and 98 % was recorded for the test product CA3642 and the reference product PRIAXOR, respectively. At very late assessment dates (28-35 DA-B), mean efficacy of 97 % for CA3642 was observed on leaf level 2. Compared to the reference products CA2445, CA2702 and PRIAXOR, a comparable control was achieved in all assessments.

At early assessment dates (14-16 DA-B), 92 % efficacy of CA3642 was observed in leaf level 3. CA3642 gave comparable efficacy to PRIAXOR where that was applied. Compared to the reference products CA2445 and CA2702, a comparable control was observed for each product in 2 of 3 assessments. At late and very assessment dates (21-26 DA-B; 38 DA-B), 96 % and 100 % efficacy of CA3642 was observed in leaf level 3, respectively. Compared to the reference products, no significant differences were observed in the performance of CA3642.

Over the trial period, CA3642 achieved acceptable to excellent control (87 - 100 %) on all three upper leaf levels after two applications. At all assessments with 2 applications, CA3642 significantly reduced disease compared to the untreated control or gave full control. CA3642 was overall comparable to the authorised reference standards.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Puccinia hordei* on winter barley in the South-East EPPO zone.

Comments of zRMS:

10 efficacy trials were conducted to control of *Puccinia hordei* in winter barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness after 2 applications. The mean efficacy was 96-99% on L1, 93-97% on L2 and 92-100% on L3. No results after 1 application were available. No significant differences between test and reference products were observed.
Based on the above summary, CA3642 at 1 l/ha after 2 applications is effective for control of PUCCHD in winter barley in the SE zone.

Summary of data on PUCCHD in winter barley

Data is presented from a total of 32 trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Puccinia hordei (*PUCCHD) in winter barley. In the vast majority of trial assessments across the Maritime, North-East EPPO and South-East zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the three EPPO zones. In the Maritime, North-East and South-East EPPO zones the vast majority of trial assessments indicated a significantly higher or comparable efficacy for CA3642 compared to the reference products; the efficacy of CA3642 against PUCCHD was considered sufficient in most cases.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 90.9 – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.8 % – 93.6 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 83.7 – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.5 % – 34.3 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late or very late assessments ranged from 87 % – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.6 % – 34.1 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of PUCCHD in winter barley.

Winter Barley (HORVW) – *Pyrenophora* spp.

Trials were undertaken to assess the efficacy of CA3642 against *Pyrenophora teres* (net blotch of barley). In some trials which were established the field trial contractors recorded another *Pyrenophora* species, namely *Pyrenophora graminea*. As these were reportedly different species of *Pyrenophora*, the data is presented in separate tables, but is grouped within this section as it is established that both azoxystrobin and prothioconazole are effective against both species. According to research by Bakonyi & Justesen (2007[1]) "there is a very close genetic relationship amongst barley-pathogenic Pyrenophora species", therefore the data for the latter species is considered supportive.

Net blotch of barley (PYRNTE - *Pyrenophora teres*)

A total of 59 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Net blotch of barley (PYRNTE) in winter barley in the Maritime (14 trials), North-East (31 trials) and South-East (14 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Great Britain (2 trials), Germany (7 trials), Czech Republic (3 trials) and France (2 trials).
The trial from the North-East EPPO zone was carried out in Latvia (2 trials), Lithuania (2 trials), and Poland (27 trials).
Trials from the South-East EPPO zone were carried out in Bulgaria (9 trials), Romania (2 trials) and Hungary (3 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

[1] J. Bakonyi & A.F. Justesen. 2007. "Genetic Relationship of Pyrenophora graminea, P. teres f. maculata and P. teres f. teres Assessed by RAPD Analysis". Journal of Phytopathology Vol 155, Issue 2, pp 76-83.

Leaf stripe of barley (PYRNGR - *Pyrenophora graminea*)

A total of two trials carried out between 2019 and 2021 to evaluate the efficacy of CA3642 recorded the presence of leaf stripe of barley (PYRNGR) in winter barley in the Maritime (2 trials) EPPO zone.

Trials from the Maritime EPPO zone were carried out in France (2 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application. These trials are supplemental to the trials on *Pyrenophora teres*, in the Maritime and Mediterranean EPPO zones.

HORVW – PYRNTE – Maritime EPPO zone

A total of 14 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PYRNTE in the Maritime EPPO zone. Trials were carried out in Great Britain (2 trials), Germany (7 trials), Czech Republic (3 trials) and France (2 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-29 days later, at BBCH 39-61.

Table 3.2-375: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PYRNTE – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	Summarized PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC		CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	1.0 L/ha 200 g AZX/L + 80 g/L CKZ	0.8 L/ha 160 g AZX/L + 64 g/L CKZ	Summarized PTZ products	CA2702 0.8 L/ha	CA2702 0.6 L/ha	MIRADOR XTRA 1.0 L/ha	MIRADOR XTRA 0.8 L/ha
Efficacy after 2 applications																
LEAF1 early	44	15	1	Mean	22.8	**81.6**	65.8	36.8				1=	1>			
LEAF1 late	39-52	25-29	5	Mean	7.3	**78.6**		64.9					2>			
				Min	4.5	**64.6**		34.6					3=			
				Max	13.3	**100.0**		81.4								
	39-52	25-29	4	Mean	5.9	**81.9**	84.6	72.5				4=	2>			
				Min	4.5	**64.6**	58.3	58.2					2=			
				Max	8.6	**100.0**	100.0	81.4								
	46	27	1	Mean	13.3	**65.4**		34.6			66.9		1>			1=
LEAF1 very late	52-77	38-46	6	Mean	24.3	**69.8**	72.5	64.8				5=	2>			
				Min	5.5	**29.1**	40.0	20.1				1<	4=			
				Max	86.9	**89.3**	100.0	84.8								
	52-77	36-46	7	Mean	21.6	**64.4**	67.0					6=				
				Min	5.0	**29.1**	34.0					1<				
				Max	86.9	**89.3**	100									
	57	36	1	Mean	5.0	**32.0**	34.0		18.0			1=		1=		
LEAF2 early	28-44	14-15	3	Mean	10.4	**91.0**	93.7	52.1				3=	3>			
				Min	5.3	**80.0**	84.5	33.5								

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	Summarized PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC		CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha		0.8 L/ha	0.6 L/ha	1.0 L/ha	0.8 L/ha	Summarized PTZ products	CA2702		MIRADOR XTRA	
						150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	200 g AZX/ha	150 g AZX/ha	200 g AZX/L + 80 g/L CKZ	160 g AZX/L + 64 g/L CKZ		0.8 L/ha	0.6 L/ha	1.0 L/ha	0.8 L/ha
				Max	20.0	**100.0**	100.0	66.0								
	28-36	14-15	*2*	*Mean*	*5.6*	***96.6***	*98.3*	*61.5*				2=	2=			
				Min	5.3	**93.1**	96.6	56.9								
				Max	5.8	**100.0**	100.0	66.0								
LEAF2 late	39-52	25-29	*4*	*Mean*	*12.6*	***87.2***	*84.6*	*67.8*				4=	2>			
				Min	8.8	**72.5**	66.4	51.9					2=			
				Max	15.8	**98.1**	98.7	82.3								
	39-52	25-29	*6*	*Mean*	*16.2*	***83.9***		*59.3*					4>			
				Min	8.8	**72.5**		38.8					2=			
				Max	36.6	**98.1**		82.3								
	46-49	27-28	*2*	*Mean*	*23.5*	***77.2***		*42.4*			*53.2*		2>			1>
				Min	10.3	**73.8**		38.8			34.0					1=
				Max	36.6	**80.6**		45.9			72.4					
LEAF2 very late	57-77	38-46	*6*	*Mean*	*33.8*	***74.8***	*69.6*	*52.7*				1>	2>			
				Min	5.6	**44.6**	32.1	0.0				5=	4=			
				Max	83.2	**90.6**	93.1	91.0								
	57-77	38-46	*4*	*Mean*	*39.2*	***78.3***	*72.7*	*57.2*				*1>*	*4=*			
				Min	13.4	**68.7**	47.8	7.0				3=				
				Max	83.2	**85.1**	89.1	91.0								
	64	43	*1*	*Mean*	*5.6*	***44.6***	*32.1*	*0.0*		*42.9*		*1=*	*1=*		*1=*	

Leaf level assm. timing	DA-A	DA-B	No. of tri-als	Na-me Conc Ty-pe	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	Summarized PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC		CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha		0.8 L/ha	0.6 L/ha	1.0 L/ha	0.8 L/ha	Summarized PTZ products	CA2702		MIRADOR XTRA	
						150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	200 g AZX/ha	150 g AZX/ha	200 g AZX/L + 80 g/L CKZ	160 g AZX/L + 64 g/L CKZ		0.8 L/ha	0.6 L/ha	1.0 L/ha	0.8 L/ha
LEAF3 early	28-46	14-15	*9*	*Me-an*	*13.5*	***74.0***										
				Min	5.5	**28.1**										
				Max	23.9	**100.0**										
	28-46	14-15	*7*	*Me-an*	*15.4*	***73.7***	*76.2*	*48.4*				7=	4>			
				Min	7.2	**28.1**	42.2	14.1					3=			
				Max	23.9	**100.0**	100.0	88.4								
	28-46	14-15	*8*	*Me-an*	*14.5*	***76.2***		*48.5*					5>			
				Min	7.2	**28.1**		14.1					3=			
				Max	23.9	**100.0**		88.4								
	35	14	1	*Me-an*	*5.5*	***56.4***	*87.3*		*69.1*			1=		1=		
	33	14	1	*Me-an*	*7.6*	***93.4***		*48.7*			*88.2*		*1>*			*1=*
LEAF3 late	50-52	28-29	*2*	*Me-an*	*30.0*	***97.9***	*98.1*	*70.9*				2=	2>			
				Min	24.3	**97.5**	96.6	64.0								
				Max	35.6	**98.3**	99.6	77.8								
	46-52	21-29	*4*	*Me-an*	*37.5*	***85.4***		*49.1*					4>			
				Min	14.9	**72.4**		14.1								
				Max	75.1	**98.3**		77.8								
	42-49	21-28	*2*	*Me-an*	*45.4*	***72.8***		*27.2*			*42.8*		2>			*1>*
				Min	14.9	**72.4**		14.1			14.1					1=

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of tri-als**	**Na-me Conc Ty-pe**	**UTC** [b]	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**Summarized PTZ products EC**	**CA2702 250 g/L AZX SC**		**MIRADOR XTRA AZX + CPZ**[**] **280 g/L SC**		**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**1.0 L/ha**	**0.8 L/ha**	**Summarized PTZ products**	**CA2702**		**MIRADOR XTRA**	
						150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**	**200 g AZX/L + 80 g/L CKZ**	**160 g AZX/L + 64 g/L CKZ**		**0.8 L/ha**	**0.6 L/ha**	**1.0 L/ha**	**0.8 L/ha**
				Max	75.1	**73.2**		40.3			69.4					
LEAF3 very late	77	46	*1*	*Me-an*	*59.8*	***77.9***	*78.8*	*59.2*				*1=*	*1>*			
Efficacy after 1 application																
LEAF3 early	*15*		*2*	*Me-an*	*18.1*	***47.3***	*74.2*	*57.8*				*2<*	*1=*			
				Min	10.7	**32.7**	55.1	33.6					*1<*			
				Max	25.5	**62.0**	93.3	82.0								
LEAF3 late	*29-31*		*2*	*Me-an*	*17.9*	***57.0***	*66.7*	*45.4*				*1=*	*1>*			
				Min	14.4	**41.7**	61.8	37.5				1<	1=			
				Max	21.4	**72.4**	71.5	53.3								

[b] UTC: % infestation in untreated control at assessment date

**AZX + CPZ: azoxystrobin 200 g /L + cuproconazole 80 g/L

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
One assessment of efficacy is available for leaf level 1 on an early assessment date (15 DA-B) showing numerically and significantly higher efficacy of CA3642 (82 %) compared to the reference products CA2445/JOAO (66 %) and CA2702 (37 %).
At late assessment dates (25-29 DA-B) and at very late assessment dates (36-46 DA-B), 79 % and 64 % efficacy were observed in leaf level 1, respectively. The observed efficacy was equivalent or significantly higher compared to the efficacy of the reference products CA2445/JOAO, MIRADOR XTRA and CA2702 in all late (25-29 DAB) assessments.
At very late assessment dates, an equivalent efficacy was observed in five out of six assessments compared to the reference standard CA2445/JOAO/PROLINE and in one assessment a lower efficacy was recorded for CA3642 (89%) compared to CA2445/JOAO/PROLINE (100 %). Compared to the reference product CA2702 containing the single active substance azoxystrobin applied at a dose rate of 0.8 L/ha CA2702, the test product CA3642 showed a significantly higher efficacy in 2 out of 6 assessments.

Three assessments of efficacy are available for leaf level 2 on an early assessment date (14-15 DA-B) showing equivalent or significantly higher efficacy of CA3642 (91 %) compared to the reference products CA2445/JOAO (94 %) and CA2702 (52 %). At late assessment dates (25-29 DA-B), 84 % efficacy was observed in leaf level 2. In all late assessments, the observed efficacy was equivalent compared to the efficacy of the reference products CA2445/JOAO and significantly higher in 4 assessments for the reference product CA2702.
At very late assessment dates (38-46 DA-B), 75 % efficacy was observed in leaf level 2. In these very late assessments, the observed efficacy was significantly higher compared to the efficacy of the reference products CA2445/JOAO (1 assessment) and CA2702 (2 assessments) and equivalent in the other assessments.

At early assessment dates (14-15 DA-B), 74 % efficacy of CA3642 was observed in leaf level 3 and was equivalent to the efficacy of the reference product CA2445/JOAO in 7 assessments, PROLINE (76 %) and higher than the efficacy of CA2702 (48 %) in 5 of 7 assessments. At late assessment dates (27-31 DA-B), mean efficacy of 85% for CA3642 was observed on leaf level 3 in four assessments. CA3642 gave significantly higher efficacy compared to CA2702 in all 4 assessments and was comparable to CA2445/JOAO in the 2 assessments where these were applied.
At a very late assessment dates (46 DA-B), 78 % efficacy of CA3642 was observed in leaf level 3 that was comparable to the efficacy of the reference products CA2445/JOAO/PROLINE and significantly higher than CA2702.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
Efficacy after one application was assessed 15-31 days after application in two trials on leaf level 3 at early and late assessment dates. A mean efficacy ranging from 47 – 57 % was observed for the test product CA3642. Higher efficacy was recorded for the reference products PROLINE with a mean efficacy of 67 – 74 %. Compared to the reference product CA2702, the test product CA3642 showed an equivalent or significantly lower efficacy.

Over the trial period, CA3642 achieved acceptable to excellent control (44.6 – 97.9 %) on all three upper leaf levels after two applications. At most assessments, with either 1 or 2 applications, target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PYRNTE was generally comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora teres* on winter barley in the Maritime EPPO zone.

HORVW – PYRNGR – Maritime EPPO zone

A total of two trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PYRNGR in the Maritime EPPO zone. Trials were carried out in France (2 trials) in 2019.
The first application took place at crop stage BBCH 33-37 and the second application was done 14-18 days later, at BBCH 49-59.

Table 3.2-376: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PYRNGR – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	JOAO PTZ 250 g/L EC	CA3642 at 1.0 L/ha compared to	
				Rate		1.0 L/ha 150 g/ ha AZX + 150 g/ ha PTZ	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	CA2702 0.8 L/ha	JOAO 0.8 L/ha
Efficacy after 2 applications										
LEAF1 very late	53	39	*1*	*Mean*	7.0	***84.3***	*71.4*	*88.6*	*1=*	*1=*
LEAF2 early	33	15	*1*	*Mean*	8.0	***61.3***	*35.0*	*76.3*	*1>*	*1=*
LEAF2 very late	53	39	*1*	Mean	10.7	**67.3**	48.6	67.3	*1=*	*1=*
LEAF3 early	33	15	*1*	*Mean*	13.2	***39.4***	*13.6*	*61.4*	*1=*	*1=*
Efficacy after 1 application										
LEAF3 early	14	-	*1*	*Mean*	3.0	***13.3***	*40.0*	*50.0*	*1=*	*1=*

[b] UTC: % infestation in untreated control at assessment date

After two applications of CA3642 applied at 1.0 L/ha
One assessment of efficacy is available for leaf level 1 on very late assessment date (39 DA-B) showing a numerically higher or equal control of CA3642 compared to the reference products JOAO and CA2702.

At early assessment dates (15 DA-B), 61 % efficacy of CA3642 was observed in leaf level 2 with equal efficacy compared JOAO and significantly higher compared to CA2702. At very late assessment dates (39 DA-B), 67 % efficacy of CA3642 was observed in leaf level 2 that was comparable to the efficacy of the reference product JOAO. Compared to the reference product CA2702, the test product CA3642 showed a numerically higher efficacy with a difference of 19 %.

At an early assessment date (15 DA-B), mean efficacy of 39 % for CA3642 was observed on leaf level 3 with equal efficacy compared to the reference product.

After one application of CA3642 applied at 1.0 L/ha
Efficacy after one application was assessed in one trial 14 days after application on leaf level 3 and an efficacy of 13 % was observed for the test product CA3642. Though a numerically lower efficacy was recorded for CA3642, the observed difference was not significant compared to the reference products CA2702 and JOAO.

Over the trial period, CA3642 achieved acceptable to excellent control (39.4 - 84.3 %) on all three upper leaf levels after two applications. At all assessments, with 2 applications, target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PYRNGR was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora* spp. on winter barley in the Maritime EPPO zone.

Comments of zRMS:

14 efficacy trials were conducted to control of *Pyrenophora teres* in winter barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 2 applications. Very low results were presented after 1 application (47-57%). The test product at claimed dose rates had results of 82% in the early assessment and 64-79% in the late assessment on L1, 75-91% on L2 and 74-85% on L3. CA2702 achieved significant inferior effectiveness compared to the test product. No differences between CA3642 and other references were observed. Also 2 efficacy trials have been submitted for *Pyrenophora graminea*. The mean efficacy was 84% on L1 in the very late assessment and 61-67% on L2 in the early and very late assessment respectively after 2 applications. Insufficient results were observed after 1 application.
Based on the above summary, CA3642 at 1 l/ha after 2 applications is effective for control of PYRNTE in winter barley in the MAR zone.

HORVW – PYRNTE – North-East EPPO zone

A total of 31 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PYRNTE in the North-East EPPO zone. Trials were carried out in Latvia (2 trials), Lithuania (2 trials), and Poland (27 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 30-37 and the second application was done 15-49 days later, at BBCH 43-61.

Table 3.2-377: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PYRNTE – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	CA2445 PTZ 250 g/L EC	CA2702 AZX 250 g/L SC		OSIRIS 65 EPC+MTC** 65 g/L EC	DELARO 325 PTZ+TFS*** 325 g/L	CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ ha PTZ	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	1.0 L/ha 175 g/L PTZ + 150 g TFS/ha	CA2445 0.8 L/ha	CA2702 0.8 L/ha	 0.6 L/ha	OSIRIS 65 2.0 L/ha	DELARO 325 1.0 L/ha
Efficacy after 2 applications																
LEAF1	*39-45*	*12-18*	*4*	*Mean*	*6.2*	***88.0***										
early				Min	4.8	**93.8**										
				Max	8.0	**98.8**										
	39-45	*12-18*	*3*	*Mean*	*6.1*	***96.3***			*68.1*		*92.1*			3>		1>
				Min	4.8	**93.8**			60.4		90.0					2=
				Max	8.0	**98.8**			72.7		94.5					
	45	15	1	*Mean*	*6.5*	***63.1***		*72.3*		*73.8*			*1<*		*1<*	
LEAF1	49-72	24-34	*12*	*Mean*	*9.2*	***79.1***										
late				Min	*4.8*	***50.9***										
				Max	*13.0*	***99.3***										
	49-70	24-34	*7*	*Mean*	*9.2*	***75.7***		*71.0*		*81.2*			1>		7=	
				Min	5.1	**50.9**		43.6		63.6			6=			
				Max	14.4	**99.3**		98.6		99.3						
	49-58	28-33	*5*	*Mean*	*9.6*	***83.9***			*71.1*					3>		
				Min	4.8	**55.9**			66.7					2=		
				Max	13.0	**94.6**			82.0							
	49-58	28-33	*4*	*Mean*	*9.4*	***91.0***			*70.7*		*90.6*			3>		4=
				Min	4.8	**87.8**			66.7		87.5			1=		
				Max	13.0	**94.6**			82.7		94.0					
	49-70	33-34	*4*	*Mean*	*10.5*	***73.4***	*80.2*					*4=*				
				Min	5.5	**50.9**	58.8									
				Max	14.4	**99.3**	98.6									

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	CA2445 PTZ 250 g/L EC	CA2702 AZX 250 g/L SC		OSIRIS 65 EPC+MTC** 65 g/L EC	DELARO 325 PTZ+TFS*** 325 g/L	CA3642 at 1.0 L/ha compared to				
				Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ ha PTZ**	**0.8 L/ha** **200 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.6 L/ha** **150 g AZX/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha** **175 g/L PTZ + 150 g TFS/ha**	**CA2445** **0.8 L/ha**	**CA2702** **0.8 L/ha**	**0.6 L/ha**	**OSIRIS 65** **2.0 L/ha**	**DELARO 325** **1.0 L/ha**
LEAF1 very late	59-68	36-37	3	*Mean*	*5.2*	***85.3***										
				Min	4.8	**73.2**										
				Max	5.6	**92.5**										
	59-60	36-37	2	*Mean*	*5.2*	***81.4***			*88.4*		*92.6*			*2=*		*2=*
				Min	4.8	**73.2**			87.5		89.3					
				Max	5.6	**89.6**			89.3		95.8					
	68	37	1	*Mean*	*5.3*	***92.5***	*84.9*	*67.9*		*81.1*		*1=*	*1=*		*1=*	
LEAF2 early	33-63	12-18	*8*	*Mean*	*9.3*	***82.1***										
				Min	*5.4*	***50.4***										
				Max	*14.9*	***93.5***										
	43-63	14-15	*4*	*Mean*	*8.0*	***73.8***		*72.3*		*78.2*			*4=*		*4=*	
				Min	5.4	**50.4**		47.8		53.9						
				Max	11.5	**90.1**		95.1		100.0						
	33-45	12-18	*4*	*Mean*	*10.6*	***90.4***			*63.3*		*89.0*			3>		4=
				Min	6.2	**88.8**			49.5		83.2			1=		
				Max	14.9	**93.5**			82.3		96.8					
LEAF2 late	40-70	24-34	*15*	*Mean*	*12.8*	***80.9***										
				Min	*4.8*	***37.6***										
				Max	*28.3*	***99.3***										
	49-70	25-34	*8*	*Mean*	*11.8*	***80.1***	*81.3*	*55.9*				8=	4>			
				Min	5.6	**37.6**	67.6	31.8					4=			
				Max	28.3	**99.3**	98.6	97.3								
	40-70	24-34	*9*	*Mean*	*11.3*	***80.1***		*60.2*					4>			
				Min	5.6	**37.6**		31.8					5=			

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**CA2445 PTZ 250 g/L EC**	**CA2702 AZX 250 g/L SC**		**OSIRIS 65 EPC+MTC** 65 g/L EC**	**DELARO 325 PTZ+TFS*** 325 g/L**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha** 150 g/ha AZX + 150 g/ ha PTZ	**0.8 L/ha** 200 g PTZ/ha	**0.8 L/ha** 200 g AZX/ha	**0.6 L/ha** 150 g AZX/ha	**2.0 L/ha** 75 g EPC/ha + 55 g MTC/ha	**1.0 L/ha** 175 g/L PTZ + 150 g TFS/ha	**CA2445** 0.8 L/ha	**CA2702** 0.8 L/ha	0.6 L/ha	**OSIRIS 65** 2.0 L/ha	**DELARO 325** 1.0 L/ha
				Max	28.3	**99.3**		97.3								
	49-70	24-34	*7*	*Mean*	*10.5*	***78.9***		*62.8*		*64.4*			2>		6=	
				Min	5.6	**37.6**		31.8		49.4			5=		1<	
				Max	28.3	**99.3**		97.3		99.3						
	45-58	29-33	*6*	*Mean*	*15.1*	***82.1***			*63.3*					4>		
				Min	4.8	**53.2**			50.0					2=		
				Max	22.2	**93.2**			83.8							
	45-58	29-31	*5*	*Mean*	*13.8*	***87.9***			*65.9*		*84.1*			4>		1>
				Min	4.8	**83.3**			52.0		74.6			1=		4=
				Max	22.2	**93.2**			83.8		94.6					
	50	33	*1*	*Mean*	21.6	***53.2***	50.5		50.0			*1>*		*1>*		
	52	24	*1*	*Mean*	*7.6*	***80.3***		*94.7*		*96.1*			*1=*		*1=*	
LEAF2 very late	51-71	35-38	*9*	*Mean*	*9.7*	***75.6***										
				Min	*5.4*	***57.3***										
				Max	*13.9*	***90.8***										
	58-70	35-38	*6*	*Mean*	*8.8*	***78.8***	*81.9*	*60.4*		*76.2*		6=	4>		6=	
				Min	5.4	**65.8**	65.8	39.3		68.5			2=			
				Max	12.0	**90.8**	91.3	76.4		84.3						
	51-60	35-37	*3*	*Mean*	*11.6*	***69.3***			*65.3*					1>		
				Min	7.5	**57.3**			49.3					2=		
				Max	13.9	**79.9**			84.9							
	59-60	36-37	*2*	*Mean*	*13.6*	***75.3***			*73.3*		*86.8*			1>		1=
				Min	13.3	**70.7**			61.7		85.0			1=		1<
				Max	13.9	**79.9**			84.9		88.5					

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**CA2445 PTZ 250 g/L EC**	**CA2702 AZX 250 g/L SC**		**OSIRIS 65 EPC+MTC[**] 65 g/L EC**	**DELARO 325 PTZ+TFS[***] 325 g/L**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ ha PTZ**	**0.8 L/ha** **200 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.6 L/ha** **150 g AZX/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha** **175 g/L PTZ + 150 g TFS/ha**	**CA2445** **0.8 L/ha**	**CA2702** **0.8 L/ha**	 **0.6 L/ha**	**OSIRIS 65** **2.0 L/ha**	**DELARO 325** **1.0 L/ha**
LEAF3 early	35-63	12-18	9	Mean	*13.0*	***80.0***										
				Min	4.9	**43.4**										
				Max	25.4	**94.8**										
	35-64	14-15	6	*Mean*	*9.2*	***77.9***		*66.6*					1>			
				Min	4.9	**43.4**		45.3					5=			
				Max	14.9	**94.8**		93.9								
	43-64	14-15	*5*	*Mean*	*9.5*	***74.5***		*66.6*		*81.8*			*5=*		*4=*	
				Min	4.9	**43.4**		45.3		60.4					1<	
				Max	14.9	**93.5**		93.9		98.0						
	39-45	12-18	*3*	*Mean*	*20.6*	***84.1***			*50.7*		*79.9*			3>		3=
				Min	18.0	**82.2**			44.6		75.0					
				Max	25.4	**85.4**			54.7		87.2					
	35	15	*1*	*Mean*	*7.7*	***94.8***	*97.4*	*66.2*				1=	1>			
LEAF3 late	70	34	*1*	*Mean*	17.8	**61.8**	70.8	55.1		63.5		1=	1=		1=	
LEAF3 very late	68-71	35-36	*2*	*Mean*	*17.4*	***81.7***	*82.3*	*62.9*		*76.6*		2=	2=		2=	
				Min	12.9	**72.9**	73.6	47.3		63.6						
				Max	21.9	**90.4**	91.3	78.5		89.5						
Efficacy after 1 application																
LEAF2 early	19		1	*Mean*	*5.4*	***92.6***			*79.6*		*94.4*			1=		1=
LEAF2 late	49		1	*Mean*	*4.8*	***81.3***		*39.6*		*93.8*			*1=*		*1=*	
LEAF3 early	19		1	*Mean*	*5.7*	***93.0***			*66.7*		*98.2*			1=		1=
LEAF3 late	27-48		3	*Mean*	*7.1*	***68.2***										
				Min	4.7	**38.3**										
				Max	11.3	**66.4**										
	48-49		2	*Mean*	*8.0*	***52.3***		*34.5*		*72.9*			*1>*		*2=*	

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**CA2445 PTZ 250 g/L EC**	**CA2702 AZX 250 g/L SC**		**OSIRIS 65 EPC+MTC[**] 65 g/L EC**	**DELARO 325 PTZ+TFS[***] 325 g/L**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ ha PTZ**	**0.8 L/ha** **200 g PTZ/ha**	**0.8 L/ha** **200 g AZX/ha**	**0.6 L/ha** **150 g AZX/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha** **175 g/L PTZ + 150 g TFS/ha**	**CA2445** **0.8 L/ha**	**CA2702** **0.8 L/ha**	**0.6 L/ha**	**OSIRIS 65** **2.0 L/ha**	**DELARO 325** **1.0 L/ha**
				Min	4.7	**38.3**		32.7		61.7			1=			
				Max	11.3	**66.4**		36.2		84.1						
	27		1	*Mean*	*5.3*	***100.0***			*100.0*		*100.0*			1=		1=

[b] UTC: % infestation in untreated control at assessment date
[**] EPC + MTC: Epoxiconazole 37.5g/l + Metconazole 27.5g/l
[***] PTZ+TFS: 175 g/l Prothioconazole, 150 g/l Trifloxystrobin

After two applications of CA3642 applied at 1.0 L/ha

Performance of CA3642 was assessed in leaf level 1 on early (12-17 DA-B), late (24-34 DA-B) and very late (36-37 DA-B) assessment dates. At these assessment dates, a mean efficacy of 88%, 79% and 85% respectively was recorded for CA3642.

At an early assessment date, significantly higher efficacy was recorded for CA3642 compared to CA2702 in 3 out of 4 assessments, in the other assessment a significantly lower efficacy for CA3642 was recorded. Compared to DELARO, in 1 out of 3 assessments, a significantly higher efficacy was observed. At late assessment dates, comparable or significantly higher efficacy was recorded for CA3642 in all assessments and compared to CA2445, CA2702, OSIRIS 65 EC, and DELARO 325. At very late assessment dates, comparable efficacy was recorded for CA3642 in all assessments and compared to CA2445, CA2702 OSIRIS 65 EC, and DELARO 325.

In leaf level 2 at early (12-18 DA-B), late (24-34 DA-B) and very late (35-38 DA-B) assessment dates, a mean efficacy of 82 %, 81 % and 76 % was recorded for CA3642, respectively. At an early assessment date, an equivalent efficacy was recorded for CA3642 compared to CA2702 and OSIRIS 65 EC in 4 out of 4 assessments. Compared to DELARO 325, in further 4 out of 4 assessments, an equivalent efficacy was observed. At late assessment dates, comparable or significantly higher efficacy was recorded for CA3642 in all assessments and compared to CA2445 (8 assessments), CA2702 (8 assessments), OSIRIS 65 EC (7 assessments), and DELARO 325 (5 assessments) with only one exception for OSIRIS 65 EC where a lower efficacy was recorded. At very late assessment dates, comparable or significantly higher efficacy was recorded for CA3642 in all assessments and compared to CA2445 (6 assessments), CA2702 (3 assessments) OSIRIS 65 EC (6 assessments), and DELARO 325 (2 assessments). Only in one trial a lower efficacy was reported at a very late assessment date compared to the reference standard DELARO 325.

In leaf level 3 at early (12-18 DA-B), late (34 DA-B) and very late (35-36 DA-B) assessment dates, a mean efficacy of 80 %, 62 %, 82 % was recorded for CA3642, respectively. At an early assessment date, equivalent and significantly higher efficacy was recorded for CA3642 compared to CA2702 in 9 out of 9 assessments. Compared to OSIRIS 65 EC, in 4 out of 5 assessments, an equivalent efficacy was observed. At the late and very late assessment date, equivalent efficacy was recorded for CA3642 compared to CA2445, CA2702 and OSIRIS 65 EC.

After one application of CA3642 applied at 1.0 L/ha

Efficacy after one application was assessed 19, 27 or 48-49 days after one application on leaf level 2 or 3.

In leaf level 2, a mean efficacy ranging from 81 - 93 % was observed for the test product CA3642 at early and late assessment dates that was comparable to the reference products CA2445, CA2702, OSIRIS 65 EC and DELARO 325. In leaf level 3, a mean efficacy ranging from 68 - 93 % was observed for the test product CA3642 at early and late assessment dates. In the majority of cases, an equivalent efficacy was recorded for the reference products CA2445, CA2702, OSIRIS 65 EC and DELARO 325, and in one assessment CA3642 gave significantly higher efficacy compared to CA2702 applied at 0.8 L/ha.

Overall, CA3642 applied at 1.0 L/ha achieved already after one application control levels up to 93 %. This makes it a good partner for trial programs. Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

Over the trial period, CA3642 achieved acceptable to excellent control (61.8 – 88 %) on all three upper leaf levels after two applications. At all assessments, with either 1 or 2 applications, target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PYRNTE was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora teres* on winter barley in the North-East EPPO zone.

Comments of zRMS:

31 efficacy trials were conducted to control of *Pyrenophora teres* in winter barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 81-93% on L2 and 68-93% on L3 after 1 application. In case of 2 applications, the test product at claimed dose rate presented results of 79-88% on L1, 76-82% on L2 and 62-82% on L3. CA2702 had significant inferior effectiveness in most trials whilst other reference products had similar effect compared to CA3642.
Based on the above summary, CA3642 at 1 l/ha after 1-2 application is effective for control of PYRNTE in winter barley in the NE zone.

HORVW – PYRNTE – South-East EPPO zone

A total of 14 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against PYRNTE in the South-East EPPO zone. Trials were carried out in Bulgaria (9 trials), Romania (2 trials) and Hungary (3 trial) between 2019 and 2021.
The first application took place at crop stage BBCH 31-39 and the second application was done 14-29 days later, at BBCH 41-61.

In one trial *Pyrenophora teres* f. sp. *maculata* was recorded instead of *Pyrenophora teres*. As the former is as a subspecies of the latter, the results of this are presented hereunder together with the results of *P. teres*.

Table 3.2-378: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against PYRNTE – valid assessments – South-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	CA2702 AZX 250 g/L SC		RISA 20 EC TBC[***] 200 g/L EC	PRIAXOR PCS + FLX[**] 225 g/L EC	CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	1.25 L/ha 250 g TBC/ha	1.5 L/ha 225 g/ha PCS + 112.5 g/ha FLX	CA2445 (PROLINE) 0.8 L/ha	CA2702 0.8 L/ha	CA2702 0.6 L/ha	RISA 20 EC 1.25 L/ha	PRIAXOR 1.5 L/ha
Efficacy after 2 applications																
LEAF1 late	38-68	21-30	*9*	*Mean*	*11.6*	***79.5***		*80.6*					1>			
				Min	6.3	**64.0**		64.6					6=			
				Max	29.3	**100.0**		100.0					2<			
	42-52	28-30	*3*	*Mean*	*16.1*	***90.5***	*93.1*	*93.6*				3=	3=			
				Min	6.3	**71.4**	79.4	81.0								
				Max	29.3	**100.0**	100.0	100.0								
	42-49	25-28	*5*	*Mean*	*9.9*	***70.7***		*76.0*		*69.3*			3=		4=	
				Min	7.4	**64.0**		64.6		61.7			2<		1<	
				Max	17.5	**75.0**		86.9		79.8						
	38-42	21-28	*2*	*Mean*	*6.9*	***81.2***		*72.6*			*98.7*		2=			1=
				Min	6.3	**71.4**		64.1			97.4					1<
				Max	7.8	**91.0**		81.0			100.0					
LEAF1 very late	67-68	39-45	2	*Mean*	*10.0*	***82.9***		*64.0*			*82.2*		*1>*			*2=*
				Min	*5.6*	**65.7**		28.0			64.3		*1=*			
				Max	14.3	***100.0***		*100.0*			*100.0*					
LEAF2 early	32-41	14-15	*3*	*Mean*	*13.5*	***72.3***										
				Min	4.5	**37.5**										
				Max	26.6	***100.0***										
	32	14-15	*2*	*Mean*	*15.6*	***58.4***		*40.0*					*1>*			
				Min	4.5	**37.5**		39.8					*1=*			
				Max	26.6	**79.3**		40.2								

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als**	**Na-me Conc Type**	**UTC b**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2445 (PROLINE) PTZ 250 g/L EC**	**CA2702 AZX 250 g/L SC**		**RISA 20 EC TBC*** 200 g/L EC**	**PRIAXOR PCS + FLX** 225 g/L EC**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.6 L/ha 150 g AZX/ha**	**1.25 L/ha 250 g TBC/ha**	**1.5 L/ha 225 g/ha PCS + 112.5 g/ha FLX**	**CA2445 (PROLINE) 0.8 L/ha**	**CA2702 0.8 L/ha**	**CA2702 0.6 L/ha**	**RISA 20 EC 1.25 L/ha**	**PRIAXOR 1.5 L/ha**
	32-42	15	*2*	*Mean*	*18.0*	***89.7***					*88.8*					*2=*
				Min	9.4	**79.3**					80.8					
				Max	26.6	**100.0**					96.8					
	32	14	1	*Mean*	*4.5*	***37.5***		*40.2*		*49.4*			*1=*		*1=*	
	41	15	1	*Mean*	*9.4*	***100.0***			*56.4*		*96.8*			*1>*		*1=*
LEAF2 late	38-52	21-30	*11*	*Mean*	*25.6*	***74.9***		*73.8*					1>			
				Min	6.5	**38.5**		41.5					9=			
				Max	100.0	**100.0**		100.0					1<			
	42-52	28-30	*3*	*Mean*	*49.4*	***86.9***	*92.9*	*91.0*				2=	2=			
				Min	15.5	**60.6**	78.7	72.9				1<	1<			
				Max	100.0	**100.0**	100.0	100.0								
	42-49	25-28	*7*	*Mean*	*14.7*	***68.9***		*70.9*		*68.0*			7=		1>	
				Min	6.5	**38.5**		41.5		55.4					5=	
				Max	29.3	**77.2**		83.4		77.8					1<	
	42-68	28-39	*2*	*Mean*	*22.8*	***71.2***		*57.8*			*92.6*		*1>*			*1=*
				Min	15.5	**60.6**		42.7			87.7		1<			1<
				Max	30.0	**81.7**		72.9			97.4					
LEAF2 very late	50-68	36-45	3	*Mean*	*11.9*	***95.9***		*75.5*			*90.7*		*1>*			*3=*
				Min	6.6	**87.6**		37.1			73.7		*2=*			
				Max	18.6	**100.0**		100.0			100.0					
	50	36	1	*Mean*	*6.6*	***100.0***	*100.0*	*89.4*			*98.5*	*1=*	*1=*			*1=*
LEAF3 early	29-32	14-15	*4*	*Mean*	*12.4*	***62.8***		*56.0*					1>			
				Min	4.7	**37.6**		20.7					3=			

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC [b]	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	CA2702 AZX 250 g/L SC		RISA 20 EC TBC*** 200 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC	CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	1.25 L/ha 250 g TBC/ha	1.5 L/ha 225 g/ha PCS + 112.5 g/ha FLX	CA2445 (PROLINE) 0.8 L/ha	CA2702 0.8 L/ha	CA2702 0.6 L/ha	RISA 20 EC 1.25 L/ha	PRIAXOR 1.5 L/ha
				Max	30.0	**86.0**		89.5								
	32	14-15	*2*	*Mean*	*6.9*	***49.6***		*56.8*		*61.2*			2=		1=	
				Min	4.7	**37.6**		39.1		47.9					1<	
				Max	9.1	**61.7**		74.5		74.5						
	29-41	15	*3*	*Mean*	*51.4*	***83.3***					*86.3*					*1>*
				Min	5.7	**65.9**					72.3					*2=*
				Max	67.1	**98.0**					96.5					
	41	15	*1*	*Mean*	*5.7*	***86.0***	*91.2*	*89.5*			*96.5*	*1=*	*1=*			*1=*
	29	15	*1*	*Mean*	*30.0*	***98.0***			*58.7*		*92.0*			*1>*		*1>*
LEAF3 late	36-52	22-30	*10*	*Mean*	*38.5*	***80.0***		*71.9*					10=			
				Min	9.7	**39.0**		37.4								
				Max	100.0	**99.9**		100.0								
	36-52	22-30	*3*	*Mean*	*69.9*	***88.9***	*96.8*	*95.1*					3=	3=		
				Min	9.7	**67.0**	90.7	85.6								
				Max	100.0	**99.9**	100.0	100.0								
	42-49	24-28	*7*	*Mean*	*30.5*	***73.3***		*72.2*		*72.4*			7=		7=	
				Min	12.3	**39.0**		37.4		43.9						
				Max	45.3	**85.9**		86.4		85.4						
	36	22	*1*	*Mean*	*9.7*	***67.0***	*90.7*	*85.6*			*95.9*	*1=*	*1=*			*1=*
LEAF3 very late	60	38	*1*	*Mean*	*8.9*	***100.0***		*100.0*			*100.0*		*1=*			*1=*
LEAF4 early	32	15	*1*	*Mean*	*67.1*	***65.9***		*20.7*			*72.3*			1>		1=
Efficacy after 1 application																
LEAF4 early	18		*1*	*Mean*	*4.2*	***43.9***		*45.1*		*44.3*			1=		1=	
LEAF4 late	26		*1*	*Mean*	*6.5*	***100.0***			*100.0*		*100.0*			*1=*		*1=*

[b] UTC: % infestation in untreated control at assessment date
[**] PCS + FLX: 150 g/l Pyraclostrobin, 75 g/l Fluxapyroxad
[***] TBC: 200 g/L Tebuconazol

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At late assessment dates (21-30 DA-B), 80 % efficacy was observed in leaf level 1. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at a late date was comparable without any significant difference to the used reference standard (CA2702) in seven out of nine assessments. Compared to reference products CA2445/PROLINE in 3 trials (mean efficacy: 93 %) efficacy of CA3642 was equivalent at 91% Compared to RISA 20 EC in 5 trials (mean efficacy: 69 %) the same level of control was observed for CA3642 (71%) although in 1 assessment efficacy was significantly lower. At very late assessment dates (39-45 DA-B), equivalent efficacy was observed for CA3642 compared to the reference products CA2702 and PRIAXOR in 1 trial and in the other trial CA3642 was equivalent to PRIAXOR and significantly higher than CA2702.

At early assessment dates (16-17 DA-B), an efficacy ranging from 38 % to 100 % was observed in leaf level 2. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at an early date was equivalent to PRIAXOR and RISA, significantly higher compared to CA2702 applied at 0.6 L/ha, and also applied at 0.8 L/ha in 1 of 2 trials.
At later assessment dates (21-30 DA-B), a higher efficacy of 75 % was observed on leaf level 2. Compared to the reference products (CA2445/PROLINE, CA2702, RISO 20 EC, PRIAXOR), a comparable or even higher efficacy was observed in most of the assessments (19 out 23 pairwise assessments). At very late assessment dates (36-45 DA-B), a mean efficacy of 96 % was observed for CA3642. For the reference standards CA2702 and PRIAXOR, a mean efficacy of 76 % and 91 % was recorded, respectively.

On leaf level 3, 63 % efficacy was observed for CA3642 at early assessment dates (14-15 DA-B) applied at the target rate (1.0 L/ha). Compared to the reference standards CA2445/PROLINE, CA2702, RISA 20 EC and PRIAXOR, comparable or significantly higher efficacy was recorded in 10 out of 11 pairwise assessments. At later assessment dates (22-30 DA-B), 80 % efficacy was achieved for CA3642 without any recorded significant differences compared to the reference standards CA2445/PROLINE, CA2702, RISA 20 EC and PRIAXOR in all assessments.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
Efficacy after one application was assessed 18 and 26 days after application in two trials on leaf level 4. Insufficient control (44 %) was achieved 18 days after application. However, the same level of control was also observed for both reference standards used in this trial (CA2702: 45 % efficacy, PRIAXOS: 44 % efficacy). The second trial provided excellent control (100 %) for the test product CA3642 and both reference standards (CA2702 and PRIAXOR).

Over the trial period, CA3642 achieved acceptable to excellent control (63 - 100 %) on all three upper leaf levels after two applications. At all assessments except 1, with either 1 or 2 applications, both rates of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against PYRNTE was overall comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Pyrenophora teres* on winter barley in the South-East EPPO zone.

Comments of zRMS:

14 efficacy trials were conducted to control of *Pyrenophora teres* in winter barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 44% in the early assessment and 100% in the late assessment on L4 after 1 application. In case of 2 applications, the test product at claimed dose rate presented 80-83% on L1, 72-96% on L2, 63-100% on L3 and 66% in the early assessment on L4. CA2702 achieved inferior effectiveness compared to CA3642. No significant differences between test and other products were observed in most trials.

Based on the above summary, CA3642 at 1 l/ha after 1-2 applications is effective for control of PYRNTE in winter barley in the SE zone.

Summary of data on *Pyrenophora* spp. in winter barley

Data is presented from a total of 61 trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Pyrenophora* spp. in winter barley. In the vast majority of trial assessments across the Maritime, North-East and South-East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the three EPPO zones. In the Maritime, North-East and South-East EPPO zones most of the assessments indicated a significantly higher or comparable efficacy for CA3642 compared to the reference products; the efficacy of CA3642 against *Pyrenophora* spp. was considered sufficient in most cases.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 39.4 – 97.9 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.5 % to 86.9 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 61.8 – 88 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.8 % to 28.3 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late or very late assessments ranged from 63 % – 100 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.5 % – 100 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of *Pyrenophora* spp. in winter barley.

Winter Barley (HORVW) – Ramularia leaf spot of barley (RAMUCC- *Ramularia collo-cygni*)

A total of 28 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Ramularia leaf blotch of barley (RAMUCC) in winter barley in the Maritime (16 trials), North-East (5 trials) and South-East (7 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Great Britain (4 trials), Germany (6 trials), Czech Republic (1 trial) and France (5 trials).
Trials from the North-East EPPO zone were carried out in Latvia (2 trials), and Poland (3 trials).
Trials from the South-East EPPO zone were carried out in Romania (2 trials) and Slovakia (5 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

HORVW – RAMUCC – Maritime EPPO zone

A total of 16 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against RAMUCC in the Maritime EPPO zone. Trials were carried out in Great Britain (4 trials), Germany (6 trials), Czech Republic (1 trial) and France (5 trials) between 2019 and 2021.
The first application took place at crop stage BBCH 30-37 and the second application was done 14-34

days later, at BBCH 39-61.

Table 3.2-379: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against RAMUCC – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	Summarized PTZ products	CA2702 AZX 250 g/L SC		DELARO 325 PTZ+TFS** 325 g/L SC	CA3642 at 1.0 L/ha compared to			
				Rate		1.0 L/ha		0.8 L/ha	0.6 L/ha	0.75 L/ha	Summarized PTZ products	CA2702		DELARO 325
						150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	200 g AZX/ha	150 g AZX/ha	175 g PTZ/ha + 150 g TFS/ha	200 g PTZ/ha	0.8 L/ha	0.6 L/ha	0.75 L/ha
Efficacy after 2 applications														
LEAF1 late	39-69	25-34	8	*Mean*	*34.4*	***63.9***								
				Min	8.5	**31.0**								
				Max	89.4	**91.5**								
	39-69	25-34	7	*Mean*	*34.7*	***68.6***	*78.9*				5=			
				Min	8.5	**38.5**	49.3				2<			
				Max	89.4	**91.5**	100.0							
	39-69	25-34	6	*Mean*	*20.9*	***73.7***	*83.8*	*39.3*			5=	5>		
				Min	8.5	**38.6**	96.3	0			1<	1=		
				Max	44.0	**91.5**	100.0	69.9						
	47-48	31-32	2	*Mean*	*61.0*	***34.7***			*38.1*				1=	
				Min	32.6	**31.0**			35.6				1<	
				Max	89.4	**38.5**			40.6					
	40	26	*1*	*Mean*	*32.6*	***31.0***			*35.6*	*42.0*			1=	*1=*
	47	31	*1*	*Mean*	*89.4*	***38.5***	*49.3*		*40.6*		1<		1<	
LEAF1 very late	53-70	38-51	*9*	*Mean*	*45.7*	***58.0***	*56.9*				1>			
				Min	5.7	**11.1**	38.7				5=			
				Max	100.0	**97.4**	97.1				3<			
	53-70	38-51	*8*	*Mean*	*29.9*	***53.3***	*62.3*	*48.5*			1>	2>		
				Min	5.7	**20.3**	38.7	1.6			5=	5=		
				Max	100.0	**97.4**	97.1	96.5			2<	1<		
	53-70	38-51	*6*	*Mean*	*33.3*	***59.3***	*66.2*				4=			
				Min	5.7	**20.3**	45.8				2<			
				Max	100.0	**97.4**	97.1							
	64-	41-	*3*	*Mean*	*44.5*	***27.3***	*38.3*				2=			

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**Summarized PTZ prod-ucts**	**CA2702 AZX 250 g/L SC**		**DELARO 325 PTZ+TFS** 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**			
				Rate		**1.0 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**0.75 L/ha**	**Summarized PTZ prod-ucts**	**CA2702**		**DELARO 325**
						150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**	**175 g PTZ/ha + 150 g TFS/ha**	**200 g PTZ/ha**	**0.8 L/ha**	**0.6 L/ha**	**0.75 L/ha**
	70	49												
				Min	12.6	**11.1**	16.8				1<			
				Max	94.0	**40.5**	59.5							
	64	48	*1*	*Mean*	*94.0*	***11.1***	*16.8*		*12.0*		1<		1=	
LEAF2 early	44	15	*1*	*Mean*	*12.2*	***61.5***	*67.2*	*11.5*			1=	1>		
LEAF2 late	39-69	24-34	9	*Mean*	44.9	**70.9**								
				Min	5.8	**23.9**								
				Max	97.1	**88.4**								
	39-69	24-34	7	*Mean*	*36.2*	***69.1***	*77.9*	*43.3*			4=	4>		
				Min	5.8	**32.4**	26.9	0			3<	2=		
				Max	76.3	**88.4**	100.0	94.8				1<		
	39-69	25-34	*8*	*Mean*	43.8	**63.5**	68.2				4=			
				Min	5.8	**23.9**	26.9				4<			
				Max	97.1	**88.4**	100.0							
	47-48	31-32	*2*	*Mean*	*75.6*	***41.5***			*37.2*				2=	
				Min	54.0	**23.9**			25.3					
				Max	97.1	**59.1**			49.1					
	47	31	*1*	*Mean*	97.1	***23.9***	*33.6*		*25.3*		1<		1=	
	48	32	*1*	*Mean*	*54.0*	***59.1***			*49.1*	*63.1*			1=	1=
LEAF2 very late	57-70	38-49	9	*Mean*	*31.3*	***44.1***	*55.4*				1>			
				Min	15.8	**6.5**	4.9				5=			
				Max	100.0	**96.3**	97.3				3<			
	57-70	38-49	*8*	*Mean*	*37.7*	***49.5***	*60.8*	*52.9*			1>	1>		
				Min	15.8	**28.8**	4.9	9.2			5=	5=		
				Max	100.0	**96.3**	97.3	95.5			2<	2<		
	64	48	*1*	*Mean*	*98.9*	***6.5***	*12.2*		*6.4*		1<		1=	

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	Summarized PTZ products	CA2702 AZX 250 g/L SC		DELARO 325 PTZ+TFS[**] 325 g/L SC	CA3642 at 1.0 L/ha compared to			
				Rate		1.0 L/ha		0.8 L/ha	0.6 L/ha	0.75 L/ha	Summarized PTZ products	CA2702		DELARO 325
						150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	200 g AZX/ha	150 g AZX/ha	175 g PTZ/ha + 150 g TFS/ha	200 g PTZ/ha	0.8 L/ha	0.6 L/ha	0.75 L/ha
LEAF3 early	28-44	14-17	*5*	*Mean*	*15.8*	***62.7***								
				Min	5.4	**37.7**								
				Max	36.2	**90.7**								
	28-44	14-17	*4*	*Mean*	*18.4*	***55.7***	*71.4*				2=			
				Min	12.2	**37.7**	51.6				2<			
				Max	36.2	**80.1**	93.1							
	28-44	14-16	*3*	*Mean*	*20.5*	***61.7***	*74.7*	*37.2*			2=	2=		
				Min	12.6	**42.9**	51.6	23.0			1<	1>		
				Max	36.2	**80.1**	93.1	59.4						
	31-33	15-17	*2*	*Mean*	*8.8*	***64.2***			*54.7*				1>	
				Min	5.4	**37.7**			27.9				1=	
				Max	12.2	**90.7**			81.5					
	31	15	*1*	*Mean*	*5.4*	***90.7***			*81.5*	*87.0*			1=	1=
LEAF3 very late	53	39	*1*	*Mean*	*42.6*	***37.3***	86.2	*19.5*			*1<*	*1=*		

[b] UTC: % infestation in untreated control at assessment date
[**]PTZ+TFS: 175 g/l Prothioconazole, 150 g/l Trifloxystrobin

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At late assessment dates (25-34 DA-B), 64 % mean efficacy of CA3642 was observed in leaf level 1 that was equivalent compared to the efficacy of the reference product CA2445/JOAO/PROLINE 275 (79 %) in five out of seven assessments. Six assessments are available comparing the performance of CA3642 (74 %) and CA2702 (39 %) showing a significantly or numerically higher efficacy in all assessments. At very late assessment dates (38-51 DA-B), mean efficacy of 58 % for CA3642 was observed on leaf level 1 in nine assessments. Compared to the reference products CA2445/JOAO/PROLINE 275 (57 % efficacy) an equivalent or numerically higher control was achieved in six out of nine assessments. Compared to the reference products CA2702 (49 % efficacy) an equivalent or numerically higher control was achieved in eight out ofnine assessments.

One assessment of efficacy is available for leaf level 2 on an early assessment date (15 DA-B) showing equivalent and significantly higher efficacy of CA3642 (62 %) compared to the reference products CA2445/JOAO/PROLINE 275 (67 %) and CA2702 (11 %), respectively. At late assessment dates (24-39 DA-B), 71 % mean efficacy of CA3642 was observed in leaf level 2 that was equivalent compared to the efficacy of the reference products CA2445/JOAO/PROLINE (78 % efficacy) in four out of eight assessments. Compared to the reference standard CA2702 (43 % efficacy) in eight out of nine assessments an equivalent or higher efficacy was recorded. At very late assessment dates (38-51 DA-B), 50 % efficacy were observed in leaf level 2. This observed efficacy was equivalent or significantly higher compared to the efficacy of the reference products CA2445/JOAO/PROLINE 275 (61 % efficacy) in five of eight assessments and CA2702 (53 % efficacy) in six out of nine very late assessments.

At early assessment dates (14-17 DA-B), 63 % mean efficacy of CA3642 was observed in leaf level 3 from 5 trials. For the reference standards CA2445/JOAO/PROLINE 275 a mean efficacy of 71 % was recorded from 4 trials. However, in two out of four assessments the performance of CA3642 was equivalent to the reference standard. Five assessments are available comparing the performance of CA3642 (62 %) and CA2702 showing a significantly higher efficacy of CA3642 in two out of five assessments. One trial is available with at a very late assessment (39 DA-B) on leaf level 3 for efficacy evaluation of CA3642 and CA2445/JOAO/PROLINE 275. Compared to CA2445/JOAO/PROLINE 275 (86 %) and CA2702 (20 %) a significantly lower and numerically higher control was achieved for CA3642 (37 %).

Over the trial period, CA3642 achieved insufficient to acceptable control (37 - 71 %) on all three upper leaf levels after two applications. However, at vast majority of assessments, with 2 applications, the target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against RAMUCC was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Ramularia collo-cygni* on winter barley in the Maritime EPPO zone.

Comments of zRMS:

16 efficacy trials were conducted to control of *Ramullaria collo-cygni* in winter barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications. The mean efficacy was 64% on L1 in the late assessment, 62-71% on L2 and 63% on L3 in the early assessment. No results after 1 application were available. No significant differences between test and reference products were observed in most trials.
Based on the above summary, CA3642 at 1 l/ha after 2 applications is moderately effective for control of RAMUCC in winter barley in the MAR zone.

HORVW – RAMUCC – North-East EPPO zone

A total of five trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against RAMUCC in the North-East EPPO zone. Trials were carried out in Latvia (2 trials) and Poland (3 trials) between 2020 and 2021.
The first application took place at crop stage BBCH 32 and the second application was done 23-34 days later, at BBCH 45-59.

According to guidance provided by the Polish National authority, where data from the North-East EPPO zone is insufficient in numbers, they will also take into account trials placed in the neighbouring countries of Germany, Czech Republic and Slovakia. In this situation, seven additional trials from Germany and Czech Republic are presented to justify the efficacy of 1.0 L/ha CA3642 applied up to two times in winter barley against RAMUCC. CA3642 was first applied at crop stage BBCH 31-35 and the second application was done 14-21 days later, at BBCH 43-55.

Table 3.2-380: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against RAMUCC – valid assessments – North-East EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC[b]	CA3642 (150 g/L AZX + 150 g/L PTZ) SC	OSIRIS 65 EC EPC + MTC[**] 65 g/L EC	CA2702 AZX 250 g/L SC		Summarized PTZ products	DELARO 325 SC PTZ+TFS[**] 325 g/L SC	CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	2.0 L/ha 75 g EPC/ha + 55 g MTC/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha	OSIRIS 65 EC 2.0 L/ha	CA2702 0.8 L/ha	 0.6 L/ha	Summarized PTZ pro-ducts 0.8 L/ha	DELARO 325 1.0 L/ha
Efficacy after 2 applications																
North-East EPPO Zone																
LEAF1 late	55-63	22-29	*2*	*Mean*	*4.2*	***50.3***		*45.1*		*52.6*			2=		2=	
				Min	3.7	**38.3**		36.2		45.7						
				Max	4.7	**62.2**		54.1		59.5						
LEAF2 late	55-63	22-29	*2*	*Mean*	*18.7*	***35.2***		*33.3*		*35.1*			2=		2=	
				Min	14.0	**31.8**		30.0		32.9						
				Max	23.3	**38.6**		36.5		37.3						
LEAF2 very late	59-68	36-37	*2*	*Mean*	*6.6*	***82.9***										
				Min	*4.6*	***74.4***										
				Max	*8.2*	**91.3**										
	59	36	*1*	*Mean*	*8.2*	***74.4***			*79.27*		*86.6*			1=		1<
	68	37	*1*	*Mean*	*4.6*	***91.3***	*89.1*	*69.6*		*87.0*		1=	1>		1=	
LEAF3 early	39-47	12-13	*2*	*Mean*	*7.7*	***52.7***										
				Min	*5.2*	***28.43***										
				Max	*10.2*	***76.92***										
	39	12	*1*	*Mean*	*5.2*	***76.92***			*53.85*		*86.54*			1=		1=
	47	13	*1*	*Mean*	*10.2*	***28.43***		*31.37*		*40.20*			1=		1=	
Germany and Czech Republic																
LEAF1 late	48-53	29-33	4	*Mean*	*22.8*	***62.3***										
				Min	17.6	**31.0**										
				Max	32.6	**91.5**										
	50-53	29-33	3	*Mean*	*19.5*	***75.6***		*58.3*		*87.1*			2>		2=	
				Min	17.6	**48.3**		44.9		69.3			1=		1<	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 (150 g/L AZX + 150 g/L PTZ) SC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**CA2702 AZX 250 g/L SC**		**Summarized PTZ products**	**DELARO 325 SC PTZ+TFS** 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**				
				Rate		**1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ**	**2.0 L/ha 75 g EPC/ha + 55 g MTC/ha**	**0.8 L/ha 200 g AZX/ha**	**0.6 L/ha 150 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha**	**OSIRIS 65 EC 2.0 L/ha**	**CA2702 0.8 L/ha**	**0.6 L/ha**	**Summarized PTZ products 0.8 L/ha**	**DELARO 325 1.0 L/ha**
				Max	20.9	**91.5**		60.0		100.0						
	48	32	*1*	*Mean*	*32.6*	***31.0***		*35.6*			*42.0*			1=		1=
LEAF1 very late	57-69	38-51	*5*	*Mean*	*38.4*	***56.6***		*59.2*		*61.6*			2>		1>	
				Min	5.7	**20.3**		1.6		45.8			2=		2=	
				Max	100.0	**97.4**		89.5		97.1			1<		2<	
LEAF2 late	48-53	29-32	4	*Mean*	*19.4*	***66.5***										
				Min	*5.8*	***59.1***										
				Max	*54.0*	***82.8***										
	48-53	29-32	3	*Mean*	*7.8*	***68.9***		*78.3*		*69.3*			2=		2=	
				Min	5.8	**60.7**		69.1		28.0			1<		1<	
				Max	10.7	**82.8**		94.8		100.0						
	48	32	*1*	*Mean*	*54.0*	***59.1***			*49.1*		*63.1*			1=		1=
LEAF2 very late	57-69	38-51	*5*	*Mean*	*35.0*	***57.7***		*71.5*		*66.2*			3=		1>	
				Min	15.8	**28.8**		21.1		26.9			2<		3=	
				Max	100.0	**96.3**		95.5		97.3					1<	
LEAF3 early	31	15	*1*	*Mean*	*5.4*	***90.7***			*81.5*		*87.0*			1=		1=

[b] UTC: % infestation in untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5 g/l + Metconazole 27.5 g/l
***PTZ+TFS: 175 g/l Prothioconazole, 150 g/l Trifloxystrobin

<u>After two applications of CA3642 applied at 1.0 L/ha</u>

At late assessment dates (22-29 DA-B), 50 % efficacy of CA3642 was observed in leaf level 1 in two trials conducted in the North-East EPPO Zone. For the reference standards CA2702 and CA2445, a mean efficacy of 45 % and 53 % was recorded. No significant differences were found in all assessments.

For the same assessment date (22-29 DA-B), mean efficacy of 35 %, 33 % and 35 % was determined for leaf level 2 for CA3642, CA2702 and CA2445.

At very late assessment on leaf 2 the reference product DELARO 325 EC, gave significantly higher efficacy than of CA3642. Efficacy of CA2445 or OSIRIS 65 EC was comparable to CA3642 and CA2702 was comparable or lower.

On leaf 3 at an early assessment efficacy of CA3642 was comparable to the reference products CA2445, OSIRIS 65 EC and DELARO 325 EC, and gave higher efficacy compared to CA2702 in 1 of 2 trials.

<u>Supporting trials from Germany and Czech Republic</u>

Three assessments of efficacy are available for leaf level 1 on late assessment dates (29-33 DA-B) comparing efficacy between CA3642 and the reference products CA2445 and CA2702. The observed efficacy was 76 %, 58 % and 87 % for CA3642, CA2702 and CA2445, respectively. CA3642 gave significantly higher efficacy compared to CA2702 in 2 trials and lower than CA2445 in 1 trial. Efficacy was comparable to DELARO in the trial where this was present.

Five assessments of efficacy are available for leaf level 1 on very late assessment dates (38-51 DA-B) comparing efficacy between CA3642 and the reference products CA2445 and CA2702. The observed efficacy was 69 %, 78 % and 69 % for CA3642, CA2702 and CA2445, respectively. CA3642 gave significantly higher, comparable, and significantly lower efficacy compared to CA2702 in two, two and one trial(s), respectively. Compared to the reference standard CA2445, a significantly higher or equivalent efficacy was observed in 3 out of 5 trials.

On leaf level 2, performance of CA3642 was assessed at late and very assessment dates. At the late assessment date (29-32 DA-B), an efficacy of 69 % was observed for CA3642 being comparable to the efficacy recorded for the reference standards CA2702 and CA2445.

At a very late assessment date (38-51 DA-B), 58 % efficacy was observed in leaf level 2. Performance of CA3642 applied at the target dose rate (1.0 L/ha) was numerically lower, however statistically equivalent compared to the reference standards CA2702 and CA2445 in three out of five assessments. Significantly lower efficacy was recorded in 2 and 1 assessment for CA3642 compared to the reference standards CA2702 and CA3445.

On leaf level 3, performance of CA3642 was assessed at an early assessment date (15 DA-B) and a mean efficacy of 91 % was recorded. In this trial CA3642 provided an equivalent control compared to the used reference standards CA2702 and DELARO.

Over the trial period, CA3642 achieved insufficient to good control (35 - 83 %) on all three upper leaf levels after two applications. At the majority of assessments, with 2 applications, the target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against RAMUCC was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Ramularia collo-cygni* on winter barley in the North-East EPPO zone.

Comments of zRMS: 5 efficacy trials were conducted to control of *Ramullaria collo-cygni* in winter barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved low to moderate effectiveness after 2 applications. The mean efficacy

was 50% on L1, 83% on L2 in the very late assessment and 53% on L3 in the early assessment. Limited number of trials has been submitted in the NE zone however the efficacy trials conducted in Germany and Czech Republic have been included to the overall calculation as support for the Polish registration. Taking into account all trials, moderate effectiveness was detected after 2 applications. No significant differences between test and reference products were observed in most trials. No results after 1 application were available. Based on the above summary, CA3642 at 1 l/ha in 2 applications is moderately effective for control of RAMUCC in winter barley in the MAR zone.

HORVW – RAMUCC – South-East EPPO zone

A total of seven trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against RAMUCC in the South-East EPPO zone. Trials were carried out in Romania (2 trials) and Slovakia (5 trials) in 2020.
The first application took place at crop stage BBCH 31-32 and the second application was done 19-32 days later, at BBCH 49-59.

Table 3.2-381: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against RAMUCC – valid assessments – South-East EPPO zone

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[b]**	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Priaxor PCS + FLX** 225 g/L EC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g/ha PCS + 112.5 g/ha FLX**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**	**Priaxor 1.5 L/ha**
LEAF1 late	49-54	28-34	*5*	*Mean*	*24.5*	***85.1***	*79.7*	*87.2*	91.8	5>	3=	5<
				Min	8.0	**69.9**	63.2	76.8	85.7		2<	
				Max	47.5	**98.5**	99.2	99.2	95.6			
LEAF2 early	*34-36*	*15*	*3*	*Mean*	*8.4*	***87.6***	*82.9*	*90.2*	*96.0*	3>	1=	3<
				Min	7.8	**85.1**	81.3	87.7	94.7		2<	
				Max	9.4	**90.5**	85.2	92.9	98.2			
LEAF2 late	49-61	28-34	*7*	*Mean*	*29.7*	***81.8***	*78.0*	*84.0*		5>	6=	
				Min	6.5	**66.3**	58.2	75.5		2=	1<	
				Max	65.8	**96.8**	98.3	97.9				
	49-54	28-34	*5*	*Mean*	*38.8*	***77.1***	*70.4*	*79.7*	*86.4*	5>	4=	5<
				Min	19.8	**66.3**	58.2	75.5	82.8		1<	
				Max	65.8	**96.8**	77.7	87.3	94.7			
LEAF3 early	*34-36*	*15*	*3*	*Mean*	*17.0*	***85.5***	*80.3*	*87.2*	*94.1*	3>	2=	3<
				Min	15.3	**83.4**	77.9	84.8	91.3		1<	
				Max	18.6	**89.2**	82.9	90.6	96.9			

[b] UTC: % infestation in untreated control at assessment date
** PCS + FLX: 150 g/l Pyraclostrobin, 75 g/l Fluxapyroxad

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At late assessment dates (28-34 DA-B), 85 % efficacy was observed in leaf level 1 over 5 trials. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at a late date was significantly higher compared to the used reference standard CA2702 in all five assessments, was equivalent compared to the used reference standard CA2445 in three out of five assessments and was significantly lower compared to the reference standard PRIAXOR in all assessments. Overall, the performance of CA3642 provided a good control.

At early assessment dates (15 DA-B), 88 % efficacy was observed in leaf level 2 over 3 trials. Efficacy of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at an early date was significantly higher compared to the used reference standards CA2702 and lower compared to PRIAXOR in all assessments. Compared to CA2445 efficacy was lower in 2 trials but the overall means were comparable.
At later assessment dates (28-34 DA-B), an efficacy of 82 % was observed on leaf level 2. Compared to the reference product CA2702 the test product CA3642 showed significantly higher or equivalent efficacy. The performance of CA3642 and CA2445 was comparable in six out of seven assessments. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at a late date was significantly lower compared to the reference standard PRIAXOR in all assessments.

On leaf level 3, 86 % efficacy was observed for CA3642 at early assessment dates (15 DA-B) applied at the target rate (1.0 L/ha). Efficacy of CA3642 was higher to the used reference standards CA2702 in all assessments. Compared to the reference product CA2445 the test product CA3642 showed comparable efficacy in two out of three assessments. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at a late date was significantly lower compared to the reference standard PRIAXOR in all assessments.

Over the trial period, CA3642 achieved acceptable to good control (77 – 88 %) on all three upper leaf levels after two applications. At all assessments, with 2 applications, the target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against RAMUCC was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Ramularia collo-cygni* on winter barley in the South-East EPPO zone.

Comments of zRMS:

7 efficacy trials were conducted to control of *Ramullaria collo-cygni* in winter barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. The mean efficacy was 85% on L1, 82-88% on L2 and 86% on L3. No results after 1 application were available. CA2702 presented slight inferior results whilst similar or slight superior efficacy compared to CA3642 were observed for other reference products.
Based on the above summary, CA3642 at 1 l/ha in 2 applications is effective for control of RAMUCC in winter barley in the SE zone.

Summary of data on RAMUCC in winter barley

Data is presented from a total of 28 trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Ramularia collo-cygni (*RAMUCC) in winter barley. In the vast majority of trial assessments applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the three EPPO zones. In the Maritime, North-East and South-East EPPO zones the vast majority of data indicated a significantly higher or comparable efficacy for CA3642 compared to the reference products; the efficacy of CA3642 against RAMUCC was considered sufficient in most cases.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 37 – 71 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 5.4 % – 97.1 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 35 – 83 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 3.7 % – 23.3 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 82 % – 88 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 8.0 % – 65.8 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of RAMUCC in winter barley

Winter Barley (HORVW) – Leaf blotch of cereals (RHYNSE- *Rhynchosporium secalis*)

A total of 20 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Leaf blotch of cereals (RHYNSE) in winter barley in the Maritime (13 trials), North-East (4 trials) and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Great Britain (3 trials), Germany (7 trials), and France (3 trials).
The trial from the North-East EPPO zone was carried out in Latvia (1 trial), and Poland (3 trials).
Trials from the South-East EPPO zone were carried out in Bulgaria (1 trial) and Slovakia (2 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are generally grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

HORVW – RHYNSE – Maritime EPPO zone

A total of 13 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against RHYNSE in the Maritime EPPO zone. Trials were carried out in Great Britain (3 trials), Germany (7 trials), and France (3 trials) between 2019 and 2021.

The first application took place at crop stage BBCH 30-37 and the second application was done 14-31 days later, at BBCH 39-61.

Table 3.2-382: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against RHYNSE – valid assessments – Maritime EPPO zone

Leaf level assm. Timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	Summarized PTZ products EC	CA2702 AZX 250 g/L SC		CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.6 L/ha 150 g AZX/ha	Summarized PTZ products 200 g PTZ/ha	CA2702 0.8 L/ha	0.6 L/ha
Efficacy after 2 applications												
LEAF1 early	46	15	*1*	*Mean*	*11.1*	**82.0**	*58.6*	*47.8*		1=	1>	
LEAF1 very late	56-77	37-46	*4*	*Mean*	*15.3*	***75.6***	*82.7*	*73.6*		3=	1>	
				Min	8.4	**68.6**	66.1	60.9		1<	3=	
				Max	29.4	**87.4**	88.2	84.7				
	77	46	*1*	*Mean*	*29.4*	***87.4***	*93.9*	*60.9*		1<	1>	
LEAF2 early	34-53	14-15	*4*	*Mean*	*10.6*	***78.8***	*84.1*			4=		
				Min	7.1	**70.1**	70.92					
				Max	14.1	**93.0**	90.14					
	34-46	15	*3*	*Mean*	*11.7*	***74.1***	*82.1*	*62.0*		3=	3=	
				Min	9.3	**70.1**	70.9	50.5				
				Max	14.1	**77.4**	88.2	70.9				
	53	14	*1*	*Mean*	*7.1*	***93.0***	*90.1*		*66.2*	1=		1>
LEAF2 late	53	29	*1*	*Mean*	6.0	***80.0***	*100.0*	*100.0*	*100.0*	1=	1=	1=
LEAF2 very late	56-77	37-46	*6*	*Mean*	*19.3*	***83.6***	*81.7*	*69.7*		1>	2>	
				Min	7.1	**59.4**	46.7	55.1		4=	3=	
				Max	51.5	**94.9**	96.9	93.3		1<	1<	
	77	46	*1*	*Mean*	51.5	***79.2***	*88.54*	*61.4*		1<	1>	
LEAF3 early	31-53	14-17	*7*	*Mean*	*13.5*	***83.0***	*85.0*			7=		
				Min	7.2	**58.2**	63.8					
				Max	20.4	**92.8**	100.0					
	31-46	15-17	*5*	*Mean*	*13.9*	***81.2***	*82.9*	*61.0*		5=	1>	
				Min	7.2	**58.1**	63.8	30.2			4=	
				Max	20.4	**92.7**	100.0	91.7				
	39-53	14-15	2	*Mean*	12.5	**87.6**	90.2		54.9	2=	2>	
				Min	9.6	**82.3**	87.5		48.96			
				Max	15.3	**92.8**	92.81		60.8			
LEAF3 late	*53*	*32-33*	*2*	*Mean*	*14.6*	***92.4***	*99.0*	*89.3*		2=	2=	
				Min	9.0	**92.2**	98.0	87.9				
				Max	20.1	**92.5**	100.0	90.6				
LEAF3 very late	52-77	35-46	*2*	*Mean*	*28.7*	***96.0***	*99.3*	*65.6*		1=	2>	

Leaf level assm. Timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**[b]	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	**Summarized PTZ products EC**	**CA2702 AZX 250 g/L SC**		**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g/ha AZX + 150 g/ha PTZ**	**200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.6 L/ha 150 g AZX/ha**	**Summarized PTZ products 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**0.6 L/ha**
				Min	18.5	**92.0**	98.5	46.7		1<		
				Max	38.8	**100.0**	100.0	84.9				
	52	35	*1*	*Mean*	*18.5*	***100.0***	*100.0*	*84.9*		1=	1>	
	77	46	*1*	*Mean*	*38.8*	***92.0***	*98.5*	*46.7*		1<	1>	

[b] UTC: % infestation in untreated control at assessment date

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
One assessment of efficacy is available for leaf level 1 on an early assessment date (15 DA-B) showing numerically higher efficacy of CA3642 (82 % efficacy) compared to the reference products PROLINE 275 (59 % efficacy) and significantly higher efficacy compared to CA2702 (48 % efficacy). At very late assessment dates (36-46 DA-B), 76 % efficacy were observed in leaf level 1 for CA3642. The observed efficacy was equivalent or significantly higher compared to the efficacy of the reference products PROLINE 275 (83 % efficacy) and CA2702 (74 % efficacy) in three and four out of four trials.

Four assessments of efficacy are available for leaf level 2 on an early assessment date (14-15 DA-B) showing equivalent performance of CA3642 (79 % efficacy) compared to the reference products CA2445/JOAO/PROLINE 275 (84 % efficacy). Numerically higher efficacy was achieved with CA3642 (74 %) in two out of three trials compared to efficacy of CA2702 (62 %). One assessment is available for a late assessment (29 DA-B) at leaf level 2 with good control achieved after application of CA3642 (80 % efficacy) compared to excellent control of reference standards (CA2445/JOAO: 100 % efficacy; CA2702: 100 % efficacy); however, the recorded difference was not significant. At very late assessment dates (38-46 DA-B), 84 % efficacy was observed in leaf level 2 that was equivalent or higher compared to the efficacy of the reference products CA2445/JOAO/PROLINE 275 (82% efficacy) and CA2702 (70 % efficacy) in five out of six trials.

At early assessment dates (14-17 DA-B), 83 % efficacy of CA3642 was observed in leaf level 3 that was equivalent to the efficacy of the reference product CA2445/JOAO/PROLINE 275 (85 % efficacy). Five assessments are available comparing the performance of CA3642 (81 % efficacy) and CA2702 (61 % efficacy) showing a significantly or numerically higher efficacy in all assessments. At late assessment dates (32-33 DA-B), mean efficacy of 92 % for CA3642 was observed on leaf level 3 in two assessments. Compared to the reference products CA2445/JOAO/PROLINE 275 and CA2702 with a mean efficacy of 99 % and 89 %, respectively, an equivalent or numerically higher control was achieved. At a very late assessment dates (35-46 DA-B), 96 % efficacy of CA3642 was observed in leaf level 3 that was significantly higher compared to CA2702 (66 %) in both trials. Compared to CA2445/JOAO/PROLINE 275 (99 % efficacy) and efficacy was lower in 1 trial and comparable in the other trial.

Over the trial period, CA3642 achieved acceptable to excellent control (74 – 96 %) on all three upper leaf levels after two applications. At all assessments, with 2 applications, the target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against RHYNSE was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Rhynchosporium secalis* on winter barley in the Maritime EPPO zone.

Comments of zRMS:

13 efficacy trials were conducted to control of *Rhynchosporium secalis* in winter barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 2 applications. The mean efficacy was 76-82% on L1, 79-84% on L2 and 83-96% on L3. The reference products containing prothioconazole presented similar effect compared to the test product. CA2702 achieved significant inferior efficacy. No results after 1 application were available.
Based on the above summary, CA3642 at 1 l/ha in 2 applications is effective for control of RHYNSE in winter barley in the MAR zone.

HORVW – RHYNSE – North-East EPPO zone

A total of four trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against RHYNSE in the North-East EPPO zone. Trials were carried out in Latvia (1 trial), and Poland (3 trials) between 2019 and 2021.

The first application took place at crop stage BBCH 32-37 and the second application was done 16-37 days later, at BBCH 59-61.

Table 3.2-383: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against RHYNSE – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	OSIRIS 65 EC EPC + MTC** 65 g/L EC	CA2702 AZX 250 g/L SC		CA2445 PTZ 250 g/L EC	DELARO 325 SC PTZ+TFS** 325 g/L SC	CA3642 at 1.0 L/ha compared to				
				Rate		1.0 L/ha	2.0 L/ha	0.6 L/ha	0.8 L/ha	0.8 L/ha	1.0 L/ha	OSIRIS 65 EC	CA2702		CA2445	DELARO 325 SC
						150 g/ha AZX + 150 g/ha PTZ	75 g EPC/ha + 55 g MTC/ha	150 g AZX/ha	200 g AZX/ha	200 g PTZ/ha	175 g PTZ/ha + 150 g TFS/ha	2.0 L/ha	0.6 L/ha	0.8 L/ha	0.8 L/ha	1.0 L/ha
Efficacy after 2 applications																
North-East EPPO Zone																
LEAF1 late	52	24	*1*	*Mean*	*13.8*	***93.48***	*98.55*		*95.65*			1=		1=		
LEAF2 early	43	15	*1*	*Mean*	*7.6*	***84.21***	*98.68*		*92.11*			1=		1=		
LEAF2 late	49-62	24-33	*4*	*Mean*	*7.9*	***85.1***										
				Min	6.9	**60.0**										
				Max	10.1	**95.7**										
	49-62	24-33	*3*	*Mean*	*8.0*	***81.59***			*85.47*					3=		
				Min	6.9	**60.00**			67.14							
				Max	10.1	**95.65**			95.05							
	49-52	24-33	*2*	*Mean*	*9.5*	***92.38***	*96.34*		*94.63*			2=		2=		
				Min	6.9	**89.11**	95.65		94.20							
				Max	10.1	**95.65**	97.03		95.05							
	49-62	25-33	*2*	*Mean*	*7.0*	***77.83***			*80.67*	*73.54*				2=	2=	
				Min	6.9	**60.00**			67.14	51.43						
				Max	7.0	**95.65**			94.20	95.65						
	50	31	*1*	*Mean*	*7.9*	***92.41***		*83.54*			*94.94*			1=		1=
	52	24	*1*	*Mean*	*10.1*	***89.11***	*97.03*		*95.05*			1=		1=		
LEAF3 early	*33-51*	*14-15*	*3*	*Mean*	*10.2*	***81.9***										
				Min	8.5	**54.1**										
				Max	10.9	**93.6**										
	43-51	*14-15*	*2*	*Mean*	*9.9*	***73.8***			*82.5*					2=		
				Min	8.5	**54.12**			68.24							
				Max	9.3	**93.55**			96.77							
	33	14	*1*	*Mean*	*10.9*	***98.7***		*83.49*			*96.33*		1=			1=
	51	14	*1*	*Mean*	*8.5*	***54.12***			*68.24*	*24.71*				1=	1=	
	43	15	*1*	*Mean*	*9.3*	***93.55***	*96.77*		*96.77*			1=		1=		
Germany																
LEAF1 very late	56-58	37-38	*3*	*Mean*	*10.6*	***78.6***			*70.4*	*79.0*				3=	3=	
				Min	8.4	**68.6**			60.9	66.1						
				Max	14.8	**87.4**			84.7	88.2						
LEAF2 early	34	15	*1*	*Mean*	*14.1*	***75.2***			*64.4*	*70.9*				1=	1=	

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	OSIRIS 65 EC EPC + MTC** 65 g/L EC	CA2702 AZX 250 g/L SC		CA2445 PTZ 250 g/L EC	DELARO 325 SC PTZ+TFS** 325 g/L SC	CA3642 at 1.0 L/ha compared to				
				Rate		**1.0 L/ha**	**2.0 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.0 L/ha**	**OSIRIS 65 EC**	**CA2702**		**CA2445**	**DELARO 325 SC**
						150 g/ha AZX + 150 g/ha PTZ	**75 g EPC/ha + 55 g MTC/ha**	**150 g AZX/ha**	**200 g AZX/ha**	**200 g PTZ/ha**	**175 g PTZ/ha + 150 g TFS/ha**	**2.0 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**1.0 L/ha**
LEAF2 late	53	29	*1*	*Mean*	*6.0*	***80.0***			*100.0*	*100.0*				1=	1=	
LEAF2 very late	56-69	37-49	*3*	*Mean*	*14.6*	***81.4***			*71.7*	*79.2*				2=	1>	
				Min	*7.1*	**59.38**			71.0	46.1				1<	2=	
				Max	*26.7*	**92.96**			93.3	85.9						
LEAF3 early	34-39	15	*3*	*Mean*	*18.9*	***90.2***				*85.4*					3=	
				Min	14.9	**85.2**				63.8						
				Max	20.4	**92.8**				99.5						
	34-36	15	*2*	*Mean*	*17.7*	***88.9***			*90.8*	*81.6*				2=	2=	
				Min	14.9	**85.2**			89.9	63.8						
				Max	20.4	**92.65**			91.7	99.5						
	39	15	*1*	*Mean*	*15.3*	***92.81***		*60.78*		*92.81*			1>		1=	
LEAF3 late	53	32-33	*2*	*Mean*	*14.6*	***92.4***			*89.3*	*99.0*				2=	2=	
				Min	9.0	**92.2**			87.9	98.0						
				Max	20.1	**92.5**			90.6	100.0						

[b] UTC: % infestation in untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/l + Metconazole 27.5g/l
***PTZ+TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
One assessment of efficacy is available for leaf level 1 on a late assessment date (24 DA-B) showing no significant differences in efficacy between CA3642 and the reference products OSIRIS 65 EC and CA2702. The observed efficacy was 93 %, 99 % and 96 % for CA3642, OSIRIS 65 EC and CA2702, respectively.

On leaf level 2, performance of CA3642 was assessed at early and late assessment dates. At the early assessment date (15 DA-B), an efficacy of 84% was observed for CA3642 being statistically equivalent to the efficacy recorded for the reference standards OSIRIS 65 EC (99 % efficacy) and CA2702 (92 efficacy). At late assessment dates (24-33 DA-B), 85 % mean efficacy was observed in leaf level 2. Performance of CA3642 applied at the target dose rate (1.0 L/ha) and assessed at late dates was equivalent to the used reference standards CA2702, CA2445, OSIRIS 65 EC and DELARO 352 SC at all assessments.

On leaf level 3, performance of CA3642 was assessed at early assessment dates (14-15 DA-B) and a mean efficacy of 82 % was recorded. In all assessments, CA3642 provided an equivalent control compared to the used reference standards CA2702, CA2445, OSIRIS 65 EC and DELARO 352 SC at all assessments.

<u>Supporting trials from Germany</u>
Three assessments of efficacy are available for leaf level 1 on a very late assessment dates (37-38 DA-B) showing no significant differences in efficacy between CA3642 and the reference products CA2445 and CA2702. The observed efficacy was 79 %, 70 % and 79 % for CA3642, CA2702 and CA2445, respectively.

On leaf level 2, performance of CA3642 was assessed at early, late and very assessment dates. At the early assessment date (15 DA-B), an efficacy of 75% was observed for CA3642 being statistically equivalent to the efficacy recorded for the reference standards CA2702 and CA2445. At a late assessment date (29 DA-B), 80 % efficacy was observed in leaf level 2. Performance of CA3642 applied at the target dose rate (1.0 L/ha) was numerically lower, however statistically equivalent compared to the reference standards CA2702 and CA2445. At very late assessment dates (37-49 DA-B), the observed efficacy of CA3642 was comparable or significantly higher than reference standards, except in 1 trial where CA2702 gave higher efficacy.

On leaf level 3, performance of CA3642 was assessed at an early assessment date (15 DA-B) and a mean efficacy of 90 % was recorded. In all assessments, CA3642 provided an equivalent control compared to the used reference standards CA2702 at 0.8 L/ha and CA2445, and was significantly higher compared to CA2702 at 0.6 L/ha. At late assessment dates (32-33 DA-B), CA3642 provided an equivalent control compared to the used reference standards CA2702 and CA2445. The observed efficacy was 92 %, 90 % and 99 % for CA3642, CA2702 and CA2445 respectively.

Over the trial period, CA3642 achieved good to excellent control (82 – 93 %) on all three upper leaf levels after two applications. At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots in the North-East EPPO Zone. The efficacy against RHYNSE was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Rhynchosporium secalis* on winter barley in the North-East EPPO zone.

Comments of zRMS:

4 efficacy trials were conducted to control of *Rhynchosporium secalis* in winter barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. The mean efficacy was 94% on L1, 84-85% on L2 and 82% on L3. Limited number of trials have been submitted in the NE zone however the trials conducted in Germany have been included to the overall calculation as support for the Polish registration. The moderate to high level of control were observed in these trials. No results after 1 application were available. No significant differences between test and reference products were observed.
Based on the above summary, CA3642 at 1 l/ha in 2 applications is effective for control of RHYNSE in winter barley in the NE zone.

HORVW – RHYNSE – South-East EPPO zone

A total of three trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha against RHYNSE in the South-East EPPO zone. Trials were carried out in Bulgaria (1 trial) and Slovakia (2 trials) between 2019 and 2020.
The first application took place at crop stage BBCH 32-37 and the second application was done 18-21 days later, at BBCH 49-59.

Table 3.2-384: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVW against RHYNSE – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	RISA 20 EC TBC*** 200 g/L EC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	Priaxor PCS + FLX** 225 g/L EC	CA3642 at 1.0 L/ha compared to			
				Rate		1.0 L/ha	1.25 L/ha	0.8 L/ha	0.8 L/ha	1.5 L/ha	RISA 20 EC	CA2702	CA2445	PRIAXOR
						150 g/ ha AZX + 150 g/ha PTZ	250 g TBC/ha	200 g AZX/ha	200 g PTZ/ha	225 g/ha PCS + 112.5 g/ha FLX	1.25 L/ha	0.8 L/ha	0.8 L/ha	1.5 L/ha
Efficacy after 2 applications														
LEAF1 late	*40-51*	*24-31*	*3*	*Mean*	*7.9*	***87.0***		*58.3*				3>		
				Min	6.0	**78.3**		25.0						
				Max	10.3	**93.3**		76.0						
	42	24	*1*	*Mean*	*6.0*	***78.3***	*21.7*	*25.0*			1>	1>		
	50-51	30-31	*2*	*Mean*	*9.8*	***91.3***		*74.9*	*90.7*	*97.9*		2>	2=	2<
				Min	7.5	**89.3**		73.8	89.3	97.1				
				Max	10.3	**93.3**		76.0	92.0	98.7				
LEAF2 early	32	14	*1*	*Mean*	*12.8*	***85.9***	*42.2*	*58.6*			1>	1>		
LEAF2 late	42-51	24-31	*3*	*Mean*	*12.4*	***84.58***		*60.6*				3>		
				Min	13.2	**81.2**		44.9						
				Max	17.6	**87.88**		68.8						
	42	24	1	*Mean*	*16.5*	***81.2***	*43.0*	*44.85*			1>	1>		
	50-51	30-31	2	*Mean*	*20.4*	***86.27***		*68.5*	*85.9*	*95.8*		2>	2=	2<
				Min	13.2	**84.66**		68.2	84.7	93.2				
				Max	17.6	**87.88**		68.8	87.1	98.5				
LEAF3 early	32-36	14-15	*3*	*Mean*	*17.6*	***91.9***		*77.5*				3>		
				Min	7.1	**86.07**		72.1						
				Max	35.9	**95.77**		81.7						
	32	14	*1*	*Mean*	*35.9*	***86.07***	*66.6*	*72.1*			1>	1>		
	34-36	15	*2*	*Mean*	*8.5*	***94.8***		*80.1*	*91.4*	*99.0*		2>	2>	2<
				Min	7.1	**93.88**		78.6	89.8	98.0				
				Max	9.8	**95.77**		81.7	93.0	100.0				
LEAF3 late	42	24	*1*	*Mean*	*48.9*	***85.5***	*64.4*	*70.6*			1>	1>		

[b] UTC: % infestation in untreated control at assessment date

** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

*** TBC: 200 g/L Tebuconazol

After two applications of CA3642 applied at 1.0 L/ha

Three assessments of efficacy are available for leaf level 1 on a late assessment date (24-31 DA-B) with a mean efficacy of 87 %. Compared to the reference product CA2702 (58 % efficacy), a significantly higher control was recorded in all three assessments. In two assessments, no significant differences were observed in the efficacy of the test product CA3642 (91 % efficacy) and the reference product CA2445 (91 % efficacy). For the reference product PRIAXOR, a significantly higher efficacy (98% efficacy) was observed compared to the test product CA3642 (91 % efficacy). CA3642 gave significantly higher efficacy compared to RISA 20 EC.

At an early date (14 DA-B), 86 % efficacy of CA3642 was observed in leaf level 2 that was significantly higher compared to the efficacy of the reference products RISA 20 EC (42 % efficacy) and CA2702 (59 % efficacy). Three assessments of efficacy are available for leaf level 2 on a late assessment date (24-31 DA-B) with a mean efficacy of 85 %. Compared to the reference product CA2702 (61 % efficacy), a significantly higher control was recorded in all three assessments. In two assessments, no significant differences were observed in the efficacy of the test product CA3642 (86 % efficacy) and the reference product CA2445 (86 % efficacy). For the reference product PRIAXOR, a significantly higher efficacy (96% efficacy) was observed compared to the test product CA3642 (86 % efficacy). CA3642 gave significantly higher efficacy compared to RISA 20 EC.

Three assessments of efficacy are available for leaf level 3 on a early assessment date (14-15 DA-B) with a mean efficacy of 91 %. Compared to the reference product CA2702 (77 % efficacy), a significantly higher control was recorded in all three assessments. In two assessments, significant differences were observed in the efficacy of the test product CA3642 (95 % efficacy) and the reference products CA2445 (91 % efficacy) and PRIAXOR (99 % efficacy). CA3642 gave significantly higher efficacy compared to RISA 20 EC.
At a late date (24 DA-B), 86 % efficacy of CA3642 was observed in leaf level 3 that was significantly higher compared to the efficacy of the reference products RISA 20 EC (64 % efficacy) and CA2702 (71 % efficacy).

Over the trial period, CA3642 achieved good control (85 – 92 %) on all three upper leaf levels after two applications. At all assessments, with 2 applications, the target rate of CA3642 significantly reduced disease severity compared to untreated plots. The efficacy against RHYNSE was comparable to, or better than, that derived from applications of the authorised reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control *Rhynchosporium secalis* on winter barley in the South-East EPPO zone.

Comments of zRMS:

3 efficacy trials were conducted to control of *Rhynchosporium secalis* in winter barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. The mean efficacy was 87% on L1, 85-86% on L2 and 86-92% on L3. CA2702 and Risa 20 EC presented significant inferior results compared to the test product. Similar effect was visible in case of CA2445 whilst superior effect was observed in case of Priaxor. No results after 1 application were available. Limited number of trials has been submitted and cMSs are kindly asked to consider this use on national level.

Summary of data on RHYNSE in winter barley

Data is presented from a total of 20 trials to evaluate the efficacy of CA3642 applied at 1.0 L/ha to control *Rhynchosporium secalis (*RHYNSE) in winter barley. In the vast majority of trial assessments across the Maritime, North-East and South-East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to that observed from applications of the reference products across the three EPPO zones. In the Maritime, North-East and South-East EPPO zones the vast majority of trial assessments indicated a significantly higher or comparable efficacy for CA3642 compared to the reference products; the efficacy of CA3642 against RHYNSE was considered sufficient in most cases.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early, late or very late assessments ranged from 76 – 96 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 6.0 % – 38.8 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 82 – 93 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 6.9 % – 13.8 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 85 % – 92 % for applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 6.0 % – 48.9 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of RHYNSE in winter barley.

Winter barley (HORVW) – Green leaf area

A total of 81 trials were carried out between 2019 and 2020 to evaluate the efficacy of CA3642 in terms of green leaf area in winter triticale in the Maritime (30 trials), North-East (47 trials) and South-East (4 trials) EPPO zones.

The trials from the Maritime EPPO zone were carried out Czech Republic (4 trials), Germany (12 trials), France (10 trials), Great Britain (4 trials).

The trials from the North-East EPPO zone were carried out in Lithuania (5 trials), Latvia (10 trials) and Poland (32 trials).

The trials from the South-East EPPO zone were carried out Hungary (4 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.
In some trial valid efficacy assessments are available from the date of the second application or even before. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Overall, CA3642 applied at the dose rates (1.0 L/ha) consistently showed comparable or better retention of green leaf area compared to the used reference standard on all three presented leaf levels (L1, L2 and L3)

HORVW – Green leaf area – Maritime EPPO zone

In total, 30 trials from the Maritime EPPO zone are available to evaluate the efficacy of 1.0 L/ha of CA3642 applied up to two times in winter barley, assessed in terms of green leaf area. Trials were carried out in Czech Republic (4 trials), Germany (12 trials), France (10 trials), Great Britain (4 trials) between 2019 and 2020.

The first application took place at crop stage BBCH 31-47 and the second application was done 14-39 days later, at BBCH 39-65.

After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 221 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.0 L/ha was statistically significant compared to the untreated control in in 25 out of 30 trials assessed 28-52 days after application.
Application of CA3642 at 1.0 L/ha resulted in equivalent green leaf area compared to the application of CA2445/JOAO/PROLINE 275 (400 % of cf UTC) in 20 out of 25 trials assessed. In all 25 trials, the application of CA3642 applied at 1.0 L/ha resulted in an equivalent or significantly higher green leaf area compared to the application of CA2702.
Two trials are not considered for mean calculation since it is not possible to calculate with a value of 0 % green leaf area.

Table 3.2-385: Efficacy of CA3642 (1.0 L/ha) in HORVW assessed as green leaf area (GLA) – valid assessments – Maritime EPPO zone

Country	Crop Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	CA2445 & JOAO PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC	
					Rate		**1.0 L/ha**	**0.8 L/ha**	**0.72 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**198 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**	**160 g AZX/L + 64 g/L CKZ**	**200 g AZX/L + 80 g/L CKZ**
FRA	ETINCELLE	45	31		GRNARE cf UTC	42.5 b 100.0	**67.5 a** **158.8**	67.5 a 158.8		67.5 a 158.8	55.0 a 129.4			
DEU	Kosmos	56	35		GRNARE cf UTC	0.8 d 100.0	**15.8 ab** **1975.0**	12.8 abc 1600.0		12.8 abc 1600.0	11.5 bc 1437.5			
FRA	Etincel	48	25		GRNARE cf UTC	5.0 e 100.0	**56.3 c** **1126.0**	78.8 a 1576.0		78.8 a 1576.0	30.5 d 610.0			
GBR	HAWKING	49	27		GRNARE cf UTC	23.8 b 100.0	**31.3 ab** **131.5**	23.8 b 100.0		23.8 b 100.0	31.3 ab 131.5			
DEU	Lomerit	52	28		GRNARE cf UTC	53.8 b 100.0	**86.3 a** **160.4**	85.0 a 158.0		85.0 a 158.0	80.5 a 149.6			
CZE		50	29		GRNARE cf UTC	65.0 b 100.0	**77.5 a** **119.2**				75.0 a 115.4		77.5 a 119.2	
FRA	Maltesse	52	28		GRNARE cf UTC	15.0 d 100.0	**50.0 bc** **333.3**	68.0 ab 453.3		68.0 ab 453.3	34.5 c 230.0			
CZE	Triumf	48	29		GRNARE cf UTC	52.5 d 100.0	**82.5 a** **157.1**				65.0 c 123.8		82.5 a 157.1	
FRA	KWS JAGU-	43	29		GRNA	53.8	**70.0 a**	66.3 ab		66.3 ab	56.3 c			

Country	Crop Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	CA2445 & JOAO PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC	
					Rate		1.0 L/ha	0.8 L/ha	0.72 L/ha		0.8 L/ha	0.6 L/ha	0.8 L/ha	1.0 L/ha
							150 g/ha AZX + 150 g/ha PTZ	200 g PTZ/ha	198 g PTZ/ha	200 g PTZ/ha	200 g AZX/ha	150 g AZX/ha	160 g AZX/L + 64 g/L CKZ	200 g AZX/L + 80 g/L CKZ
	AR				RE cf UTC	c 100.0	**130.1**	123.2		123.2	104.6			
GBR	CARAT	58	27		GRNARE cf UTC	11.3 b 100.0	**30.0 a** **265.5**		30.0 a 265.5	30.0 a 265.5	30.0 a 265.5			
FRA	Rafaela	47	32		GRNARE cf UTC	10.0 a 100.0	**10.0 a** **100.0**	12.5 a 125.0		12.5 a 125.0	11.0 a 110.0			
CZE	BECKEN-BAUER	48	32		GRNARE cf UTC	75.0 a 100.0	**77.5 a** **103.3**					80.0 a 106.7		
DEU	Kosmos	53	33		GRNARE cf UTC	35.0 a 100.0	**32.5 a** **92.9**	35.0 a 100.0		35.0 a 100.0	32.5 a 92.9			
FRA	ORBIT	72	33		GRNARE cf UTC	2.5 f 100.0	**22.5 e** **900.0**	52.5 ab 2100.0		52.5 ab 2100.0				
FRA	ETINCEL	69	34		GRNARE cf UTC	50.0 b 100.0	**78.8 a** **157.6**	82.5 a 165.0		82.5 a 165.0	72.5 a 145.0			
GBR	KWS Orwell	57	35		GRNARE cf UTC	65.0 d 100.0	**95.0 a** **146.2**		95.3 a 146.6	95.3 a 146.6		68.8 d 105.8		
DEU	Orbit	59	35		GRNARE cf UTC	13.8 h 100.	**80.0 a** **579.7**	83.8 a 607.2		83.8 a 607.2		61.3 d 444.2		

Country	Crop Variety	DA-A	DA-B	No of tri-als	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	CA2445 & JOAO PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC	
					Rate		**1.0 L/ha**	**0.8 L/ha**	**0.72 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**198 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**	**160 g AZX/L + 64 g/L CKZ**	**200 g AZX/L + 80 g/L CKZ**
						0								
DEU	Meridian	57	38		GRNA RE cf UTC	18.3 g 100.0	**31.0 c** **169.4**	24.5 d 133.9		24.5 d 133.9	31.5 c 172.1			
FRA	ETINCEL	52	38		GRNA RE cf UTC	42.5 c 100.0	**71.3 ab** **167.8**		66.3 ab 156.0	66.3 ab 156.0	55.0 bc 129.4			
DEU	Lomerit	52	38		GRNA RE cf UTC	10.0 c 100.0	**15.0 b** **150.0**	23.8 a 238.0		23.8 a 238.0	16.3 b 163.0			
FRA	ETINCELLE	56	38		GRNA RE cf UTC	0.0 d -	**17.5 c** **-**		32.5 b -	32.5 b -	3.8 d -			
FRA	Etincel	53	39		GRNA RE cf UTC	30.0 c 100.0	**82.5 a** **275.0**		82.5 a 275.0	82.5 a 275.0	56.3 b 187.7			
DEU	SU Vireni	64	42		GRNA RE cf UTC	52.5 a 100.0	**50.0 a** **95.2**	60.0 a 114.3		60.0 a 114.3	52.5 a 100.0			
CZE	KWS Meridi-an	64	43		GRNA RE cf UTC	60.0 d 100.0	**72.5 bc** **120.8**	77.5 abc 129.2		77.5 abc 129.2	65.0 cd 108.3			67.5 cd 112.5
DEU	Sandra	69	49		GRNA RE cf UTC	22.5 e 100.0	**46.3 c** **205.8**	46.3 c 205.8		46.3 c 205.8	36.3 d 161.3			
GBR	Orwell	67	49		GRNA RE	71.3 c	**82.5 ab**		90.0 a	90.0 a	78.8 b			

Country	Crop Variety	DA-A	DA-B	No of tri-als	Name Conc Type	UTC[b]	CA3642 150 g/L AZX + 150 g/L PTZ SC	CA2445 & JOAO PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	PTZ products EC	CA2702 250 g/L AZX SC		MIRADOR XTRA AZX + CPZ** 280 g/L SC	
					Rate		**1.0 L/ha**	**0.8 L/ha**	**0.72 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**198 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**	**160 g AZX/L + 64 g/L CKZ**	**200 g AZX/L + 80 g/L CKZ**
					cf UTC	100.0	**115.7**		126.2	126.2	110.5			
DEU	SU Ellen	65	51		GRNARE cf UTC	0.0 b -	**15.0 a** -	18.8 a -		18.8 a -	13.8 a -			
DEU	Meridian	70	51		GRNARE cf UTC	3.8 e 100.0	**18.8 b** **494.7**	9.0 d 236.8		9.0 d 236.8	11.3 cd 297.4			
DEU	Meridian	73	52		GRNARE cf UTC	7.0 c 100.0	**15.8 b** **225.7**	21.0 ab 300.0		21.0 ab 300.0	14.5 b 207.1			
DEU	Tonic	50	29		GRNARE cf UTC	22.5 e 100.0	**76.3 c** **339.1**	90.5 b 402.2		90.5 b 402.2	52.5 d 233.3			
				30	*Mean* Min Max	*30.5* 0.0 75.0	***321.3*** **92.9** **1975.0**							
				21	*Mean* Min Max	*28.5* 0.8 71.3	***369.6*** **92.9** **1975.0**	*429.8* 0.0 2100.0						
				25	*Mean* Min Max	*28.9* 0.8 71.3	***344.6*** **92.9** **1975.0**			*399.8* 100.0 2100.0				
				25	*Mean* Min Max	*33.4* 0.8 75.0	***294.8*** **92.9** **1975.0**				*220.6* 100.0 1437.5			
				6	*Mean* Min Max	*37.9* 11.3 71.3	***196.0*** **115.7** **275.0**		*161.6* 0.0 275.0					
				3	*Mean* Min	*43.0* 13.8	***276.4*** **103.3**					*161.6* 0.0		

Country	**Crop Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC[b]**	**CA3642 150 g/L AZX + 150 g/L PTZ SC**	**CA2445 & JOAO PTZ 250 g/L EC**	**PROLINE 275 PTZ 275 g/L EC**	**PTZ products EC**	**CA2702 250 g/L AZX SC**		**MIRADOR XTRA AZX + CPZ** 280 g/L SC**	
					Rate		**1.0 L/ha**	**0.8 L/ha**	**0.72 L/ha**		**0.8 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g PTZ/ha**	**198 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**	**150 g AZX/ha**	**160 g AZX/L + 64 g/L CKZ**	**200 g AZX/L + 80 g/L CKZ**
					Max	75.0	**579.7**					275.0		
				2	*Mean*	*58.8*	***138.2***						*138.2*	
					Min	52.5	**119.2**						119.2	
					Max	65.0	**157.1**						157.1	
				1	*Mean*	*60*	***120.8***			*129.2*	*108.3*			*112.5*

[b] UTC: % green leaf area in untreated control at assessment date
**AZX + CPZ: azoxystrobin 200 g /L + cuproconazole 80 g/L

Comments of zRMS:

The mean green leaf area of whole plant increased by 221,3% at 1 l/ha after 2 applications. No statistical differences between test and reference products can be observed in most trials in the Maritime EPPO climatic zone. Significant positive impact on green leaf area has been noted.

HORVW – Green leaf area – North-East EPPO zone

In total, 43 trials from the North-East EPPO zone are available to justify the minimum effective dose of 1.0 L/ha of CA3642 applied up to two times in winter barley, assessed in terms of green leaf area. Trials were carried out in Lithuania (5 trials), Latvia (8 trials) and Poland (30 trials) between 2019 and 2021.

The first application took place at crop stage BBCH 31-47 and the second application was done 14-39 days later, at BBCH 39-65.

After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 50 % compared to the untreated control. The increase of green leaf area induced by CA3642 at 1.0 L/ha was statistically significant compared to the untreated control in in 22 out of 43 trials assessed.

Application of CA3642 at 1.0 L/ha resulted in equivalent green leaf area compared to the application of CA2702 (130 % of cf UTC at 0.6 L/ha application rate) in 28 out of 29 trials assessed. In 13 and 10 and out of 25 and 21 trials, the application of CA3642 applied at 1.0 L/ha resulted in an equivalent or significantly higher green leaf area compared to the application of CA2445 and OSIRIS 65 EC, respectively. In all nine trials, the application of CA3642 provided an equivalent or significantly higher green leaf area compared to the application of DELARO 325 EC.

Table 3.2-386: Efficacy of CA3642 (1.0 L/ha) in HORVW assessed as green leaf area (GLA) – valid assessments – North-East EPPO zone

Country	**Crop Variety**	**DA-A**	**DA-B**	**No of trials & ARM Action Codes**	**Name Conc Type**	**UTC**	**CA3642 150 g/L AZX + 150 g/L PTZ SC**	**CA2702 AZX 250 g/L SC**		**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**DELARO 325 SC PTZ+TFS** 325 g/L SC**
					Rate		**1.0 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**2.0 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g AZX/ha**	**150 g AZX/ha**	**200 g PTZ/ha**	**75 g EPC/ha + 55 g MTC/ha**	**175 g PTZ/ha + 150 g TFS/ha**
POL	Kosmos	55	27		GRNARE cf UTC	42.5 a 100.0	**42.5 a 100.0**	40.0 a 94.1			37.5 a 88.2	
POL	Meridian	73	24		GRNARE cf UTC	15.0 a 100.0	**20.0 a 133.3**	20.0 a 133.3			20.0 a 133.3	
LVA	Meridian	47	22		GRNARE cf UTC	5.0 b 100.0	**10.0 a 200.0**	8.5 a 170.0		8.5 a 170.0		
POL	ZENEK	56	26		GRNARE cf UTC	28.8 a 100.0	**33.8 a 117.4**	30.0 a 104.2			35.0 a 121.5	
POL	-	72	26		GRNARE cf UTC	15.0 b 100.0	**22.5 a 150.0**	20.0 ab 133.3			22.5 a 150.0	
LTU	Meridian	48	33		GRNARE cf UTC	20.938 a 100.0	**28.063 a 134.0**	28.125 a 134.3		29.063 a 138.8		
POL	KOBUZ	54	25		GRNARE cf UTC	31.3 a 100.0	**31.3 a 100.0**	31.3 a 100.0			28.8 a 92.0	
POL	Gloria	61	22		GRNARE cf UTC	10.5 e 100.0	**20.0 bc 190.5**	15.0 d 142.9			21.3 bc 202.9	
LVA	KWS Tenor	51	31		GRNARE cf UTC	20.0 c 100.0	**28.8 bc 144.0**	26.3 bc 131.5		38.8 a 194.0		
LVA	Meridian	49	34		GRNARE cf UTC	11.3 b 100.0	**15.0 a 132.7**	13.8 a 122.1		15.0 a 132.7		
POL	Ordinale	60	21		GRNARE cf UTC	11.0 d 100.0	**17.5 ab 159.1**	12.8 cd 116.4			15.0 bc 136.4	
POL	Lomerit	52	24		GRNARE cf UTC	4.3 f 100.0	**10.0 e 232.6**	16.3 bcd 379.1			21.3 a 495.3	
POL	Titus	72	24		GRNARE cf UTC	10.0 a 100.0	**15.0 a 150.0**	15.0 a 150.0			15.0 a 150.0	
LTU	Mercurioo	48	33		GRNARE cf UTC	10.250 a 100.0	**12.500 a 122.0**	11.438 a 111.6		12.188 a 118.9		
POL	Kosmos	70	34		GRNARE cf UTC	32.5 b 100.0	**65.0 a 200.0**	52.5 ab 161.5		72.5 a 223.1	57.5 ab 176.9	
POL	KWS KOSMOS	57	38		GRNARE cf UTC	47.5 a 100.0	**47.5 a 100.0**	51.3 a 108.0		48.8 a 102.7	45.0 a 94.7	
POL	Kosmos	68	36		GRNARE cf UTC	60.0 b 100.0	**93.8 a 156.3**	85.0 a 141.7		92.5 a 154.2	83.8 a 139.7	

Country	Crop Variety	DA-A	DA-B	No of trials & ARM Action Codes	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ SC	CA2702 AZX 250 g/L SC		CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC	DELARO 325 SC PTZ+TFS** 325 g/L SC
					Rate		**1.0 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**2.0 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g AZX/ha**	**150 g AZX/ha**	**200 g PTZ/ha**	**75 g EPC/ha + 55 g MTC/ha**	**175 g PTZ/ha + 150 g TFS/ha**
				TA		b	**a**	a		a	a	
POL	Zenek	68	37		GRNARE cf UTC	75.0 b 100.0	**85.0 a 113.3**	83.8 a 111.7		85.0 a 113.3	85.0 a 113.3	
POL	Arenia	49	33		GRNARE cf UTC	51.250 b 100.0	**73.750 a 143.9**	68.750 a 134.1		68.750 a 134.1	71.250 a 139.0	
POL	Antonella	68	34		GRNARE cf UTC	37.5 a 100.0	**37.5 a 100.0**	42.5 a 113.3		45.0 a 120.0	47.5 a 126.7	
LVA	Meridian	66	32		GRNARE cf UTC	49.25 a 100.0	**46.25 a 93.9**	45.5 a 92.4		48.0 a 97.5		
LVA	Meridian	62	25		GRNARE cf UTC	14.8 a 100.0	**23.0 a 155.4**	17.5 a 118.2		20.5 a 138.5		
POL	Gloria	71	38		GRNARE cf UTC	63.8 d 100.0	**71.3 c 111.8**	70.0 c 109.7		78.8 ab 123.5	75.0 bc 117.6	
POL	Kosmos	71	35		GRNARE cf UTC	50.000 a 100.0	**55.000 a 110.0**	57.500 a 115.0		60.000 a 120.0	62.500 a 125.0	
LVA	KWS Tenor	66	33		GRNARE cf UTC	7.500 a 100.0	**7.500 a 100.0**	6.250 a 83.3		5.750 a 76.7		
POL	Wootan	61	41		GRNARE cf UTC	73.8 b 100.0	**86.3 a 116.9**	83.8 a 113.6		92.5 a 125.3	86.3 a 116.9	
POL	Kosmos	70	37		GRNARE cf UTC	71.3 b 100.0	**85.0 a 119.2**	85.0 a 119.2		85.0 a 119.2	85.0 a 119.2	
POL	MELANIA	55	37		GRNARE cf UTC	71.3 a 100.0	**73.8 a 103.5**	73.8 a 103.5		78.8 a 110.5	70.0 a 98.2	
POL	Melania	70	34		GRNARE cf UTC	42.5 b 100.0	**62.5 ab 147.1**	62.5 ab 147.1		75.0 a 176.5	57.5 ab 135.3	
POL	Holmes	65	38		GRNARE cf UTC	28.8 c 100.0	**42.5 ab 147.6**		33.8 bc 117.4			40.0 abc 138.9
POL	Jakubus	61	34		GRNARE cf UTC	37.5 f 100.0	**57.5 b-e 153.3**		52.5 e 140.0			61.3 a-d 163.5
POL	Quadriga	49	28		GRNARE cf UTC	41.3 c 100.0	**48.8 abc 118.2**		46.3 abc 112.1			48.8 abc 118.2
POL	Concordia	45	29		GRNARE cf UTC	25.0 c 100.0	**31.3 ab 125.2**		27.5 bc 110.0			33.8 a 135.2
POL	Kosmos	59	36		GRNARE cf UTC	55.0 b 100.0	**72.5 ab 131.8**		70.0 ab 127.3			70.0 ab 127.3

Country	**Crop Variety**	**DA-A**	**DA-B**	**No of trials & ARM Action Codes**	**Name Conc Type**	**UTC**	**CA3642 150 g/L AZX + 150 g/L PTZ SC**	**CA2702 AZX 250 g/L SC**		**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**DELARO 325 SC PTZ+TFS** 325 g/L SC**
					Rate		**1.0 L/ha** **150 g/ha AZX + 150 g/ha PTZ**	**0.6 L/ha** **200 g AZX/ha**	**0.8 L/ha** **150 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**	**2.0 L/ha** **75 g EPC/ha + 55 g MTC/ha**	**1.0 L/ha** **175 g PTZ/ha + 150 g TFS/ha**
LTU	Tenor	50	33		GRNARE cf UTC	7.500 c 100.0	**20.3 ab** **270.8**		15.938 ab 212.5	14.375 abc 191.7		
LTU	Torerro	50	32		GRNARE cf UTC	19.7 b 100.0	**41.6 a** **211.1**		27.8 ab 141.3	38.1 a 193.7		
LVA	Meridian	48	27		GRNARE cf UTC	12.5 c 100.0	**23.8 abc** **190.4**		16.3 bc 130.4	25.0 abc 200.0		
LVA	Meridian	48	27		GRNARE cf UTC	17.5 b 100.0	**31.0 a** **177.1**		22.5 ab 128.6	32.0 a 182.9		
POL	KWS Kosmos	58	33		GRNARE cf UTC	20.0 e 100.0	**32.5 bcd** **162.5**		32.5 bcd 162.5			35.0 a-d 175.0
POL	Impala	50	31		GRNARE cf UTC	31.3 b 100.0	**36.3 ab** **116.0**		33.8 ab 108.0			37.5 ab 119.8
POL	Zenek	55	33		GRNARE cf UTC	17.5 e 100.0	**26.3 bc** **150.0**		21.3 cde 121.4			30.0 ab 171.4
POL	Quadriga	60	37		GRNARE cf UTC	15.0 c 100.0	**40.0 ab** **266.7**		32.5 ab 216.7			42.5 ab 283.3
LTU	Marisa	51	35		GRNARE cf UTC	2.500 b 100.0	**7.000 a** **280.0**		4.250 ab 170.0	4.813 ab 192.5		
				43	*Mean* Min Max	*30.6* 2.5 75.0	***149.7*** **93.9** **280.0**					
				29	*Mean* Min Max	*33.9* 4.3 75.0	***135.8*** **93.9** **232.6**	*130.9* 83.3 379.1				
				14	*Mean* Min Max	*23.7* 2.5 55.0	***178.6*** **116.0** **280.0**		*142.7* 108.0 216.7			
				25	*Mean* Min Max	*35.0* 2.5 75.0	***149.3*** **93.9** **280.0**			*146.0* 76.7 223.1		
				21	*Mean* Min Max	*40.2* 4.3 75.0	***135.9*** **100.0** **232.6**				*146.3* 88.2 495.3	
				9	*Mean* Min	*30.2* 15.0	***152.4*** **116.0**					*159.2* 118.2

Country	**Crop Variety**	**DA-A**	**DA-B**	**No of trials & ARM Action Codes**	**Name Conc Type**	**UTC**	**CA3642 150 g/L AZX + 150 g/L PTZ SC**	**CA2702 AZX 250 g/L SC**		**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**DELARO 325 SC PTZ+TFS** 325 g/L SC**
					Rate		**1.0 L/ha**	**0.6 L/ha**	**0.8 L/ha**	**0.8 L/ha**	**2.0 L/ha**	**1.0 L/ha**
							150 g/ha AZX + 150 g/ha PTZ	**200 g AZX/ha**	**150 g AZX/ha**	**200 g PTZ/ha**	**75 g EPC/ha + 55 g MTC/ha**	**175 g PTZ/ha + 150 g TFS/ha**
					Max	55.0	**266.7**					283.3

[b] UTC: % green leaf area in untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/l + Metconazole 27.5g/l; ***PTZ+TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

Comments of zRMS:

The mean green leaf area of whole plant increased by 49,7% at 1 l/ha after 2 applications. No statistical differences between test and reference products can be observed in most trials in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted.

HORVW – Green leaf area – South-East EPPO zone

In total, four trials from the South-East EPPO zone are available to evaluate the efficacy of 1.0 L/ha of CA3642 applied up to two times in winter barley, assessed in terms of green leaf area. Trials were carried out in Hungary (4 trials) in 2021.

The first application took place at crop stage BBCH 31-47 and the second application was done 14-39 days later, at BBCH 39-65.

After two applications of CA3642 at 1.0 L/ha, the mean green leaf area increased by 325 % compared to the untreated control. Compared to the reference standards CA2702 and PRIAXOR, no significant differences in the performance were observed.
The increase of green leaf area induced by CA3642 at 1.0 L/ha was statistically not significant compared to the untreated control in the trials assessed 27-38 days after application.

Table 3.2-387: Efficacy of CA3642 (1.0 L/ha) in HORVW assessed as green leaf area (GLA) – valid assessments – South-East EPPO zone

Country	**Crop Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC[b]**	**CA3642 150 g/L AZX + 150 g/L PTZ SC**	**CA2702 AZX 250 g/L SC**	**Priaxor PCS + FLX** 225 g/L EC**
				Rate		**1.0 L/ha**	**0.6 L/ha**	**1.5 L/ha**
						150 g/ ha AZX + 150 g/ha PTZ	**150 g AZX/ha**	**225 g/ha PCS + 112.5 g/ha FLX**
HUN	SU ELLEN	55	27	GRNARE cf UTC	5.0 a 100	**20.0 a** **400.0**	10.0 a 200.0	20.0 a 400.0
HUN	Antonella	55	30	GRNARE cf UTC	5.0 a 100	**40.0 a** **800.0**	20.0 a 400.0	20.0 a 400.0
HUN	GK JUDY	61	35	GRNARE cf UTC	5.0 a 100	**5.0 a** **100.0**	5.0 a 100.0	5.0 a 100.0
HUN	KWS Meridian	57	38	GRNARE cf UTC	5.0 a 100	**20.0 a** **400.0**	20.0 a 400.0	20.0 a 400.0
				Mean Min Max	*5.0* 5.0 5.0	***325.0*** **100.0** **800.0**	*275.0* 100.0 400.0	*325.0* 100.0 400.0

[b] UTC: % green leaf area in untreated control at assessment date
** PCS + FLX: 150 g/l Pyraclostrobin, 75 g/l Fluxapyroxad

Comments of zRMS:

The mean green leaf area of whole plant increased by 225% at 1 l/ha after 2 applications. No statistical differences between CA3642 and Priaxor can be observed in most trials in the South-East EPPO climatic zone. CA2702 achieved inferior results. Significant positive impact on green leaf area has been noted for CA3642.

Spring barley (HORVS)

Spring barley (HORVS) – Powdery mildew of barley (ERYSGH - *Blumeria graminis f. sp. hordei*)

A total of 11 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Powdery mildew (ERYSGH) in spring barley (HORVS) in the Maritime (5 trials), North-East (3 trials) and South-East (3 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in the Czech Republic (2 trials), Germany (2 trials) or Great Britain (1 trial).
Trials from the North-East EPPO zone was carried out in Latvia (1 trial) or Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Slovakia (3 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rate of 1.0 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at 1.0 L/ha consistently and significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products.

HORVS – ERYSGH – Maritime EPPO zone

Five trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against ERYSGH in the Maritime EPPO zone. Trials were carried out in the Czech Republic (2 trials), Germany (2 trials) and Great Britain (1 trial), in 2019 or 2021.
The first application took place at crop stage BBCH 30-37 and the second application was done 9-23 days later, at BBCH 47-59.

Table 3.2-388: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against ERYSGH – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	Summarized PTZ Products EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha	CA3642 at 1.0 L/ha compared to	
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 - 0.72 L/ha 200 g PTZ/ha	SC 200 g AZX /ha or 150 g AZX /ha	Summarized PTZ Products	Summarized CA2702 0.8 L/ha or 0.6 L/ha
Efficacy after 2 applications										
LEAF2 early	23-40	13-17	4	*Mean*	*16.9*	*~~79.9~~ 80.1*	*~~84.2~~ 84.3*	*~~49.2~~ 49.0*	4=	3=
				Min	7.0	~~61.3~~ 61.2	~~61.9~~ 62.0	~~17.4~~ 17.1		1>
				Max	23.9	~~97.2~~ 97.4	100.0	~~72.9~~ 72.3		
LEAF2 late	34.0	19.0	1	*Mean*	*8.7*	*~~93.1~~ 93.6*	*~~95.4~~ 95.6*	*~~65.5~~ 65.4*	1=	1=
LEAF3 early	23-40	13-17	4	*Mean*	36.5	*~~65.2~~ 65.3*	*72.4*	*~~27.2~~ 27.1*	4=	1=
				Min	14.6	~~45.9~~ 46.0	~~45.9~~ 45.8	~~13.7~~ 13.5		3>
				Max	56.1	~~89.7~~ 90.0	~~94.5~~ 94.9	~~61.0~~ 60.9		
LEAF3 late	34.0	19.0	1	*Mean*	*13.4*	*~~84.3~~ 80.0*	*~~96.3~~ 96.7*	*~~61.9~~ 62.0*	1=	1=
Efficacy after 1 application										
LEAF2 early	17.0	-	1	*Mean*	*20.1*	*~~44.8~~ 44.6*	*~~61.2~~ 61.1*	*~~38.8~~ 38.6*	1=	1=
LEAF3 early	8-17	-	3	*Mean*	28.6	*~~57.0~~ 57.3*	*~~67.7~~ 67.9*	*~~42.9~~ 43.4*	2=	2=
				Min	5.9	~~47.4~~ 47.3	50.6	~~30.4~~ 30.5	1<	1>
				Max	73.9	~~64.4~~ 65.3	~~78.0~~ 78.5	~~55.9~~ 56.0		
LEAF3 late	23.0	-	1	*Mean*	*5.1*	*100.0*	*100.0*	*60.8*	1=	1>
LEAF4 early	8-14		2	*Mean*	*9.2*	*~~57.0~~ 56.2*	*~~43.2~~ 43.8*	*~~53.7~~ 53.9*	1=	2=
				Min	4.4	~~34.1~~ 32.7	~~31.8~~ 32.4	~~31.8~~ 32.4	1>	
				Max	13.9	~~79.9~~ 79.6	~~54.7~~ 55.1	~~75.5~~ 75.3		

After two applications of CA3642 applied at 1.0 L/ha

At an early assessment date (13-17 DA-B) 80 % efficacy was observed across 4 trials on leaf level 2, and 65 % efficacy was observed across 4 trials on leaf level 3. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the reference PROLINE 275 in 2 data sets, and with CA2445 in 6 datasets. CA3642 generally compared well with CA2702 with no statistically significant differences in 4 data sets, and with significantly higher efficacy in 4 datasets.

At a slightly later assessment date (19 DA-B) in 1 trial, mean efficacy of 93 % was observed on leaf level 2 and 84 % efficacy was observed on leaf level 3. The efficacy achieved by CA3642 was statistically comparable to the efficacy of both CA2445 and CA2702 in both data sets.

After one application of CA3642 applied at 1.0 L/ha

At early assessment timings (8-17 DA-A) 45 % efficacy was observed in 1 trial on leaf level 2, 57 % efficacy was observed across 3 trials on leaf level 3 and 57 % efficacy was observed across 2 trials on leaf level 4. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the reference CA2445 in 4 out of 6 data sets, significantly higher in 1 data set and significantly lower in 1 data set. CA3642 performance is generally comparable to that of CA2702 with no statistically significant differences in 5 of the 6 data sets, and CA3642 performed significantly better in 1 data set.

At a slightly later assessment date (23 DA-A) in 1 trial, mean efficacy of 100 % was observed on leaf level 3, which was identical to the efficacy achieved by CA2445 and significantly more effective than CA2702.

Overall, CA3642 applied twice at 1.0 L/ha achieved good control at early timings at the leaf 1 level, and good control across the upper leaves at later timings. The data indicate that two applications are required for good control of ERYSGH on the upper leaves.

Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

With either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots in all but one of the 17 data sets.

The efficacy against ERYSGH was comparable to that derived from applications of the reference products in the majority of data sets.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control ERYSGH on spring barley in the Maritime EPPO zone.

Comments of zRMS:

5 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *hordei* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 2 applications. The mean efficacy was 80,1% on L2 and 65,3% on L3 in the early assessment and 93,6% on L2 and 80% on L3 in the late observations. Similar effect was visible for CA2445 whilst significant inferior results was observed in case of CA2702. Insufficient control has been noted after 1 application in the early assessment. Limited number of trials was available and cMSs are kindly asked to consider this use on national level.*

**Accordance to table 3.2-12, oats has minor status in Belgium. Based on EPPO guidelines PP 1/226(3), required number of trials for minor crops is 3 (2-6).*

HORVS – ERYSGH – North-East EPPO zone

Three trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against ERYSGH in the North-East EPPO zone. Trials were carried out in Latvia (1 trial) or Poland (2 trials) in 2019 or 2021.
The first application took place at crop stage BBCH 32-33 and the second application was done 14-21 days later, at BBCH 49-59.

Table 3.2-389: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against ERYSGH – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 PTZ 250 g/L EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha SC	DELARO 325 SC 325 g/L SC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	200 g AZX /ha or 150 g AZX /ha	1 l/ha 325 g ai/ha	CA2445 PTZ 250 g/L	Summarized CA2702 0.8 L/ha or 0.6 L/ha	DELARO 325 SC
Efficacy after 2 applications												
LEAF2 early	29.0	15.0	1	*Mean*	4.5	~~*80.0*~~ *80.1*	~~*60.0*~~ *60.8*	~~*46.7*~~ *47.5*		1=	1=	-
LEAF2 late	40.0	26.0	1	*Mean*	10.0	*66.0*	*71.0*	~~*44.0*~~ *44.5*		1=	1>	-
LEAF3 early	29.0	15.0	1	*Mean*	13.4	~~*67.9*~~ *68.2*	~~*61.9*~~ *61.6*	~~*39.6*~~ *39.4*		1=	1=	-
LEAF3 late	40.0	26.0	1	*Mean*	28.5	~~*69.8*~~ *69.7*	~~*69.1*~~ *69.3*	~~*36.5*~~ *36.6*		1=	1>	-
LEAF4 early	36.0	15.0	1	*Mean*	5.9	~~*93.2*~~ *93.7*		~~*81.4*~~ *81.1*	~~*89.8*~~ *89.5*	-	1=	1=
Efficacy after 1 application												
LEAF3 early	14.0	-	1	*Mean*	7.2	~~*65.3*~~ *65.0*	~~*48.6*~~ *48.5*	~~*36.1*~~ *35.7*		1=	1>	-
LEAF4 early	14-15	-	3	*Mean*	8.8	~~*79.9*~~ *80.1*		~~*72.5*~~ *72.6*		-	3=	-
				Min	4.1	~~56.3~~ 56.2		~~36.2~~ 36.3				
				Max	17.4	100.0		100.0				
			2	*Mean*	4.5	~~*91.7*~~ *92.1*		~~*90.6*~~ *90.8*	~~*97.9*~~ *98.1*		2=	2=
				Min	4.1	~~83.3~~ 84.2		~~81.3~~ 81.6	~~95.8~~ 96.1			
				Max	4.8	100.0		100.0	100.0			
			1	*Mean*	17.4	~~*56.3*~~ *56.2*	~~*51.1*~~ *51.0*	~~*36.2*~~ *36.3*		1=	1=	
LEAF4 late	21.0	-	1	*Mean*	5.6	*91.1*		~~*76.8*~~ *76.7*	~~*94.6*~~ *94.4*	-	1=	1=-
Summary North-East and supporting trials after 2 applications												
LEAF2 early	23-33	13-15	4	*Mean*	12.7	*75.6*	*74.2*	*44.3*	-			
				Min	4.5	*61.3*	*60.0*	*17.4*				
				Max	23.9	*97.1*	*98.6*	*72.9*				
LEAF2 late	34-40	19-26	2	*Mean*	9.4	*79.6*	*83.2*	*54.8*	-			
				Min	8.7	*66.0*	*71.0*	*44.0*				
				Max	10.0	*93.1*	*95.4*	*65.5*				
LEAF3 early	23-33	13-15	4	*Mean*	30.0	*63.0*	*66.0*	*32.0*	-			
				Min	13.4	*45.9*	*45.9*	*13.7*				
				Max	56.1	*89.7*	*94.5*	*61.0*				
LEAF3 late	34-40	19-26	2	*Mean*	21.0	*77.1*	*82.7*	*49.2*				
				Min	13.4	*69.8*	*69.1*	*36.5*				
				Max	28.5	*84.3*	*96.3*	*61.9*				
Efficacy after 1 application												

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha SC**	**DELARO 325 SC 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**200 g AZX /ha or 150 g AZX /ha**	**1 l/ha 325 g ai/ha**	**CA2445 PTZ 250 g/L**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**DELARO 325 SC**
LEAF3 early	8-17	-	4	*Mean* Min Max	23.3 5.9 73.9	*59.1* *47.4* *65.3*	*62.9* *48.6* *78.0*	*41.2* *30.4* *55.9*	-			
LEAF4 early	8-15	-	5	*Mean* Min Max	8.9 4.1 17.4	*70.7* *34.1* *100.0*		*65.0* *31.8* *100.0*	-			

After two applications of CA3642 applied at 1.0 L/ha

At the early timings (15 DA-B) in the trials carried out in the North-East EPPO zone, 80 % efficacy was observed at leaf level 2 in 1 trial, 68 % efficacy was observed at the leaf 3 level in 1 trial, and 93 % efficacy was observed at leaf level 4 in 1 trial. The efficacy of CA3642 applied at 1.0 L/ha was statistically comparable compared to both CA2445 and CA2702 in all three data sets although test product CA3642 substantially outperformed CA2702 numerically in every case.

At a later assessment date (40 DA-B) in 1 trial, efficacy of 66 % was observed on leaf level 2 and 70 % efficacy was observed on leaf level 3 after the application of 1.0 L/ha CA3642. In these assessments efficacy from CA3642 was statistically comparable to CA2445 and significantly higher compared to CA2702.

Results from both North-East EPPO zone and Germany are available for early assessments (13-15 DA-B) on leaf levels 2 and 3 where the achieved mean efficacy was 76 % and 63%, respectively, across 4 trials after application of 1.0 L/ha CA3642. At later timings (19-26 DA-B), efficacy was 80% on leaf 2 and 77% on leaf 3 across 2 trials.

After one application of CA3642 applied at 1.0 L/ha

At early assessment timings (14-15 DA-A) 65 % efficacy was observed in 1 trial on leaf level 3 and 80 % efficacy was observed across 3 trials on leaf level 4. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the reference CA2445 in the 2 data sets where a comparison is possible. CA3642 performance is significantly more effective than CA2702 in 1 of the 4 data sets, and statistically comparable in the other 3 data sets.

At a slightly later assessment date (21 DA-A) in 1 trial, mean efficacy of 91 % was observed on leaf level 4, which was numerically higher than, but not significantly different to the efficacy achieved by CA2702. A comparable level of efficacy was achieved by Delaro.

Results from both North-East EPPO zone and Germany are available for assessment conducted at 8-17 DA-A on leaf levels 3 and 4 where the achieved mean efficacy was 59 % (4 trials) and 71% (5 trials), respectively, after application of 1.0 L/ha CA3642.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (10 data sets).

The efficacy against ERYSGH was comparable to that derived from applications of the reference products in the majority of data sets according to statistical analysis, although the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control ERYSGH on spring barley in the North-East EPPO zone.

Comments of zRMS:

3 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *hordei* in spring barley in the North-East EPPO climatic zone. Also 3 trials conducted in Czech Republic and Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications. The mean efficacy was 75,6% on L2 and 63% on L3 in early assessments and 79,6% on L2 and 77,1% on L3 in the late observations. Similar effect was visible for CA2445 whilst significant inferior for CA2702. The low to moderate control was observed after 1 application with results of 59,1% on L3 and 70,7% on L4 in the early assessment.
Based on above summary, CA3642 at 1 l/ha in 1-2 applications is moderately effective for control of ERYSGH in spring barley in the NE zone.

HORVS – ERYSGH – South-East EPPO zone

Three trials are available to evaluate the efficacy of CA3642 applied once at the proposed dose rate of 1.0 L/ha against ERYSGH in the South-East EPPO zone. All 3 trials were carried out in Slovakia in 2019.
The first application took place at crop stage BBCH 33-34 and the second application was done 14 days later, at BBCH 53-55.

Table 3.2-390: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against ERYSGH – valid assessments – South-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**BUMPER 25 EC 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.5 l/ha 125 g ai/ha**	**CA2702 AZX**	**BUMPER 25 EC**
Efficacy after 1 application										
LEAF4 early	14	-	3	*Mean* Min Max	*5.3* 4.6 6.2	*~~98.1~~ 98.5* ~~97.8~~ 98.2 ~~98.4~~ 98.4	*~~93.2~~ 93.4* ~~91.9~~ 92.3 ~~94.1~~ 94.3	*~~75.8~~ 76.0* ~~72.6~~ 72.4 ~~78.3~~ 78.1	3~~>~~ =	3>

<u>After one application of CA3642 applied at 1.0 L/ha</u>
At an early assessment timing (14 DA-A) 98 % efficacy was observed on leaf level 4 across 3 trials. Performance of CA3642 applied at 1.0 L /ha was significantly more effective than CA2702 and Bumper in all 3 trials.

At all assessments following 1 application, CA3642 significantly reduced disease severity compared to untreated plots (3 data sets).

The efficacy against ERYSGH was greater than that derived from applications of the reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control ERYSGH on spring barley in the South-East EPPO zone.

Comments of zRMS:

3 efficacy trials were carried out to control of *Blumeria graminis* f.sp. *hordei* in spring barley in the South-East EPPO zone. CA3642 at 1 l/ha achieved high effectiveness (98,5%) after 1 application in the early assessment. No significant differences between test product and CA2702 were observed whilst slight inferior results were presented for Bumper 25 EC. No results after 2 applications were available. Limited number of trials has been submitted and cMSs are kindly asked to consider this use on national level.

Summary of data on ERYSGH in HORVS

Data is presented from a total of 12 trials to evaluate the efficacy of CA3642 applied at the proposed rate of 1.0 L/ha to control ERYSGH in spring barley. In all trial assessments across all EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones and the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 65-93% for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 7 % to 56 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 66-93% for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.5% to 56 %.

No data are available for control of ERYSGH after two applications of CA3642 in the South-East EPPO zone. The mean efficacy in the South-East EPPO zone on leaf level 4 at early assessments was 98 % after one application of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.6 % to 6.2 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of ERYSGH in spring barley.

Spring Barley (HORVS) – Brown rust of barley (PUCCHD - *Puccinia hordei*)

A total of 16 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Brown rust (PUCCHD) in spring barley (HORVS) in the Maritime (6 trials), North-East (5 trials) and South-East (5 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (4 trials) or Great Britain (2 trials).
Trials from the North-East EPPO zone was carried out in Latvia (3 trials) or Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials) or Slovakia (3 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rate of 1.0 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at 1.0 L/ha consistently and significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products.

HORVS – PUCCHD – Maritime EPPO zone

Six trials are available to evaluate the efficacy of CA3642 applied twice at the proposed dose rate of 1.0 L/ha against PUCCHD in the Maritime EPPO zone. Trials were carried out in Germany (4 trials) and Great Britain (2 trials), between 2019 and 2021. The first application took place at crop stage BBCH 31-37 and the second application was done 13-21 days later, at BBCH 49-61.

Table 3.2-391: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against PUCCHD – valid assessments – Maritime EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**Summarized PTZ Products EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 - 0.72 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha or 150 g AZX /ha**	**Summarized PTZ Products**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**
Efficacy after 2 applications										
LEAF1 early	35	15-17	2	*Mean*	*7.8*	*96.9*	*~~95.0~~ 95.2*	*~~95.9~~ 96.1*	2=	2=
				Min	5.7	93.9	94.1	94.8		
				Max	9.8	100.0	~~95.9~~ 96.2	~~96.9~~ 97.3		
LEAF1 late	44-55	24-39	3	*Mean*	*8.3*	*91.1*	*~~91.3~~ 91.4*	*~~89.6~~ 89.7*	3=	3=
				Min	6.4	85.4	88.9	~~81.8~~ 81.9		
				Max	10.1	97.9	~~94.1~~ 94.4	~~96.0~~ 96.2		
LEAF2 early	35	15-17	2	*Mean*	*15.9*	*98.4*	*94.8*	*88.5*	2=	2=
				Min	4.1	96.8	92.1	~~79.9~~ 80.0		
				Max	27.7	100.0	97.5	~~97.1~~ 97.0		
LEAF2 late	44-55	24-39	5	*Mean*	*8.0*	*~~82.5~~ 82.6*	*79.0*	*~~76.7~~ 76.6*	5=	4=
				Min	4.3	~~55.8~~ 55.3	44.2	~~48.8~~ 47.7		1>
				Max	12.9	~~96.2~~ 97.0	96.2	~~94.6~~ 94.8		
LEAF3 early	35.0	15.0	1	*Mean*	*5.8*	*100.0*	*74.7*	*82.9*	1=	1=
LEAF4 early	26.0	8.0	1	*Mean*	*8.5*	*~~97.6~~ 97.2*	*~~87.1~~ 87.2*	*~~95.3~~ 95.9*	1=	1=

After two applications of CA3642 applied at 1.0 L/ha

At an early assessment date (8-17 DA-B) 97 % efficacy was observed on leaf level 1 across 2 trials, 98 % efficacy was observed on leaf level 2 across 2 trials, 100% efficacy was observed at leaf level 3 in 1 trial and 98% at leaf level 4 in 1 trial. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 and to the azoxystrobin reference product CA2702 in all 6 data sets.

At later assessment dates (24-39 DA-B), mean efficacy of 91 % was observed on leaf level 1 across 3 trials and 83 % efficacy was observed on leaf level 2 across 5 trials. The efficacy achieved by CA3642 was statistically comparable to the efficacy of the prothioconazole reference products in all 8 data sets, and statistically comparable to CA2702 (azoxystrobin) in 7 out of 8 data sets, with significantly higher efficacy than CA2702 in 1 data set.

Overall, CA3642 applied twice at 1.0 L/ha achieved good control on the upper leaf levels 1, 2 and 3 at all timings.

At all assessments, CA3642 significantly reduced disease severity compared to untreated plots (14 data sets).

The performance of CA3642 against PUCCHD was comparable to, or significantly more effective than that derived from applications of the reference products.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control PUCCHD on spring barley in the Maritime EPPO zone.

Comments of zRMS:

6 efficacy trials were carried out to control of *Puccinia hordei* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness after 2 applications. The mean efficacy was 96,9% on L1, 98,4% on L2, 100% on L3 and 97,2% on L4 in the early assessment and 91,1% on L1 and 82,6% on L2 in the late observations. No significant differences between test and reference products were observed. No results after 1 application were available.
Based on above summary, CA3642 at 1 l/ha in 2 applications is effective for control of PUCCHD in spring barley in the MAR zone.

HORVS – PUCCHD – North-East EPPO zone

Five trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against PUCCHD in the North-East EPPO zone. Trials were carried out in Latvia (3 trials) and Poland (2 trials), between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 13-24 days later, at BBCH 53-61.

Table 3.2-392: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against PUCCHD – valid assessments – trials from North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 PTZ 250 g/L EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha SC	OSIRIS 65 EC EPC + MTC** 65 g/L EC	DELARO 325 SC 325 g/L SC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	200 g AZX /ha or 150 g AZX /ha	2 L/ha 75 g EPC/ha + 55 g MTC/ha	1 l/ha 325 g ai/ha	CA2445 PTZ	Summarized CA2702	OSIRIS or Delaro
Efficacy after 2 applications													
LEAF1 early	28-31	15-17	1	*Mean*	*20.3*	~~*93.6*~~ 93.5		~~*96.1*~~ 96.0	*98.5*			1=	1=
			2	*Mean* Min Max	*13* 5.7 20.3	*90.7* ~~87.7~~ 87.9 ~~93.6~~ 93.5		~~*91*~~ *90.7* ~~86~~ 85.3 ~~96.1~~ 96.0				2=	
			1	*Mean*	*5.7*	~~*87.7*~~ 87.9	~~*91.2*~~	~~*86*~~ *85.3*			~~1=~~	1=	
LEAF2 early	31-32	15-17	2	*Mean* Min Max	*30.8* 14.6 46.9	*97.5* ~~95.2~~ 95.3 ~~99.8~~ 99.9		*97.9* ~~95.9~~ 95.7 ~~100~~ 99.9				2=	
			1	*Mean*	*46.9*	~~*99.8*~~ 99.9	~~*97.4*~~ 97.5	~~*100*~~ 99.9			1=	1=	
			1	*Mean*	*14.6*	~~*95.2*~~ 95.3		~~*95.9*~~ 95.7	~~*97.9*~~ 98.3			1=	1=
LEAF2 late	38-45	21-24	2	*Mean* Min Max	*6.9* 6 7.7	*95* 90 100		*90.8* 81.7 100				2=	
			1	*Mean*	*7.7*	*100*	~~*98.7*~~ 98.5	~~*100*~~ 99.8			1=	1=	
			1	*Mean*	*6*	*90*		~~*81.7*~~ 82.1		~~*91.7*~~ 92.5		1=	1=
LEAF3 early	*29-38*	*14-15*	3	*Mean* Min Max	*28.5* 5.1 63.8	~~*97.8*~~ 97.7 ~~93.3~~ 93.2 100		*98.9* 97 ~~100~~ 99.9					
			2	*Mean* Min Max	*34.5* 5.1 63.8	*100* ~~100~~ 99.9 100	~~*98.1*~~ 97.7 ~~98~~ 97.3 98.1	~~*99.9*~~ 99.6 ~~99.8~~ 99.3 ~~100~~ 99.9			2=		
			1	*Mean*	*16.5*	~~*93.3*~~ 93.2		*97*	~~*98.2*~~ 98.5				
LEAF3 late	45	21	1	*Mean*	*18.1*	*100*	~~*97.8*~~ 98.1	~~*100*~~ 99.8			1=		
Efficacy after 1 application													
LEAF3 early	13	13	1	Mean	*6.7*	~~*95.5*~~ 95.3	~~*88.1*~~	~~*88.1*~~ 88.0		88.6	1=		
Summary North-East and supporting trials after 2 applications													
LEAF1 early	28-35	15-17	3	*Mean* Min Max	*11.9* *5.7* *20.3*	*91.7* *87.7* *93.9*		*93.0* *86.0* *96.9*					
LEAF2 early	31-35	15-17	3	*Mean*	*29.7*	*97.2*		*97.7*					

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha SC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**	**DELARO 325 SC 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**200 g AZX /ha or 150 g AZX /ha**	**2 L/ha 75 g EPC/ha + 55 g MTC/ha**	**1 l/ha 325 g ai/ha**	**CA2445 PTZ**	**Summarized CA2702**	**OSIRIS or Delaro**
				Min Max	*14.6* *46.9*	*95.2* *99.8*		*95.9* *100.0*					
LEAF2 late	38-53	21-39	5	*Mean* Min Max	*7.2* *4.3* *12.9*	*85.9* *55.8* *100.0*		*80.9* *48.8* *100.0*					

After two applications of CA3642 applied at 1.0 L/ha

At the early timings (14-17 DA-B) in the trials carried out in the North-East EPPO zone, 91 % efficacy was observed at leaf level 1 across 2 trials, 98 % efficacy was observed at the leaf 2 level across 2 trials, and 98 % efficacy was observed at leaf level 3 across 3 trials. The efficacy of CA3642 applied at 1.0 L/ha was statistically comparable compared to CA2702 in all 7 data sets, statistically comparable to CA2445 where applied in 4 data sets and statistically comparable to Osiris where applied in 3 data sets.

At later assessment dates (21-24 DA-B), efficacy of 95 % was observed on leaf level 2 across 2 trials and 100 % efficacy was observed on leaf level 3 in 1 trial after two applications of 1.0 L/ha CA3642. The efficacy of CA3642 applied at 1.0 L/ha was statistically comparable compared to CA2445 where applied in 2 of the 3 data sets and to CA2702 in all 3 data sets, and to Delaro in the dataset where this was applied.

Results from both North-East EPPO zone and Germany are available for early assessments (15-17 DA-B) on leaf levels 1 and 2 where the achieved mean efficacy was 92 % across 3 trials and 97% across 3 trials, respectively, after two applications of 1.0 L/ha CA3642.

Results from both North-East EPPO zone and Germany are available for late assessments (21-39 DA-B) on leaf level 2 where the achieved mean efficacy was 86 % across 5 trials after two applications of 1.0 L/ha CA3642.

After one application of CA3642 applied at 1.0 L/ha

At an early assessment timing (13 DA-A) in 1 trial, 96 % efficacy was observed on leaf level 3. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was numerically higher, but statistically comparable to the reference products CA2445 and CA2702.

Overall, CA3642 applied either once or twice at 1.0 L/ha achieved very good control on the upper leaf levels 1, 2 and 3 at all assessment timings.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (11 data sets).

The efficacy against PUCCHD was comparable to that derived from applications of the reference products in all data sets according to statistical analysis.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control PUCCHD on spring barley in the North-East EPPO zone.

Comments of zRMS:

5 efficacy trials were carried out to control of *Puccinia hordei* in spring barley in the North-East EPPO climatic zone. Also 4 trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha achieved high effectiveness after 2 applications. The mean efficacy was 91,7% on L1 and 97,2% on L2 in the early assessments and 85,9% on L2 in the late observation. No significant differences between test and reference products were observed. Also good control (95,3%) was visible after 1 application in the trial conducted in Lithuania.
Based on above summary, CA3642 at 1 l/ha in 1-2 applications is effective for control of PUCCHD in spring barley in the NE zone.

HORVS – PUCCHD – South-East EPPO zone

Five trials are available to evaluate the efficacy of CA3642 applied at once or twice at the proposed dose rate of 1.0 L/ha against PUCCHD in the South-East EPPO zone. Trials were carried out in Hungary (2 trials) and Slovakia (3 trials), in 2019 and 2020.
The first application took place at crop stage BBCH 32-37 and the second application was done 13-27 days later, at BBCH 51-61.

Table 3.2-393: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against PUCCHD – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC	BUMPER 25 EC 250 g/L EC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	0.5 l/ha 125 g ai/ha	CA2702	CA2445	PRIAXOR or Bumper
Efficacy after 2 applications													
LEAF1 late	42-51	24-27	2	*Mean*	*13.1*	~~96.5~~ 96.3	~~91.9~~ 91.8		~~96.5~~ 96.9		2=		2=
				Min	4.3	~~93.0~~ 92.6	~~83.7~~ 83.5		~~93.0~~ 93.8				
				Max	21.9	100.0	100.0		100.0				
			1	*Mean*	*4.3*	~~93.0~~ 92.6	~~83.7~~ 83.5	~~90.7~~ 90.9	~~93.0~~ 93.8		1=	1=	1=
LEAF2 early	28-34	15-20	2	*Mean*	*5.7*	~~84.2~~ 84.5	~~85.1~~ 85.0			71.1	2=		2>
				Min	5.6	~~83.9~~ 84.0	~~83.9~~ 84.3			~~67.2~~ 67.0			
				Max	5.8	~~84.5~~ 84.9	~~86.2~~ 85.6			~~75.0~~ 75.1			
LEAF2 late	35-51	21-27	4	*Mean*	*13.3*	~~91.9~~ 92.0	90.5				2=		
				Min	7.9	~~82.4~~ 82.6	80.9				2>		
				Max	28.3	100.0	100.0						
			1	*Mean*	*8.3*	100.0	100.0	100.0	94.0		1=	1=	1=
			2	*Mean*	*18.3*	100.0	100.0		~~97.0~~ 97.2		2=		2=
				Min	8.3	100.0	100.0		~~94.0~~ 94.4				
				Max	28.3	100.0	100.0		100.0				
			2	*Mean*	*8.2*	~~83.8~~ 84.0	~~81.0~~ 80.9			~~67.2~~ 67.5	2>		2>
				Min	7.9	~~82.4~~ 82.6	80.9			65.1			
				Max	8.5	85.3	~~81.2~~ 80.9			~~69.4~~ 69.9			
LEAF3 early	28-34	15-20	3	*Mean*	*12.8*	~~84.3~~ 84.6	~~83.2~~ 83.0			~~69.9~~ 70.0	2=		3>
				Min	9.2	~~82.9~~ 83.2	~~82.3~~ 82.2			~~65.9~~ 65.8	1>		
				Max	16.4	~~85.9~~ 86.4	~~83.7~~ 83.4			~~73.2~~ 73.6			
LEAF3 late	35-42	21-27	3	*Mean*	*17.9*	~~87.7~~ 87.8	86.4				2=		
				Min	11.2	~~80.0~~ 80.2	~~79.1~~ 79.2				1>		
				Max	23.5	100.0	100.0						
			1	*Mean*	*11.2*	100.0	100.0	~~100.0~~ 99.8	~~96.4~~ 96.2		1=	1=	1=
			2	*Mean*	*21.2*	~~81.5~~ 81.7	79.7			65.8	1=		2>
				Min	18.9	~~80.0~~ 80.2	~~79.1~~ 79.2			63.9	1>		
				Max	23.5	83.1	80.2			67.7			

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**CA2445 PTZ 250 g/L EC**	**PRIAXOR PCS + FLX** 225 g/L EC**	**BUMPER 25 EC 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**0.5 l/ha 125 g ai/ha**	**CA2702**	**CA2445**	**PRIAXOR or Bumper**
Efficacy after 1 application													
LEAF4 early	13-14	13-14	3	*Mean* Min Max	*5.6* 5.2 6.1	*100.0* 100.0 100.0	*~~99.5~~ 99.4* ~~98.4~~ 98.2 100.0			*~~93.0~~ 93.3* ~~90.2~~ 91.0 ~~96.2~~ 96.6	3=		3>

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early assessment date (15-20 DA-B) 84 % efficacy was observed on leaf level 2 across 2 trials and 84 % efficacy was observed on leaf level 3 across 3 trials. CA3642 generally compared well with CA2702 with no statistically significant differences in 4 of 5 data sets and was significantly more effective in 1 data set. CA3642 was significantly more effective than BUMPER in all 5 data sets.

At later assessment dates (24-27 DA-B), mean efficacy of 97 % was observed on leaf level 1 across 2 trials, 92 % efficacy was observed on leaf level 2 across 4 trials and efficacy at 88% was observed on leaf level 3 across 3 trials. The efficacy achieved by CA3642 was statistically comparable to the efficacy of CA2702 in 6 out of the 9 data sets and significantly more effective in 3 data sets. CA3642 was statistically comparable to the efficacy of PRIAXOR in all 5 of the data sets where applied. CA3642 was significantly more effective than BUMPER in all 4 data sets where applied.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
At early assessment timings (13-14 DA-A), 100 % efficacy was observed on leaf level 4 across 3 trials. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the reference CA2701 in all 3 data sets, and significantly more effective compared to BUMPER in all 3 data sets.

Overall, CA3642 applied twice at 1.0 L/ha achieved good control (≥84% control of efficacy) on the upper leaf levels 1, 2 and 3 at all assessment timings.
Under specific circumstances, if for example the weather conditions start to be less favourable for the disease after the first application, only one application might already be enough. However, to ensure reliable control also under favourable disease conditions and to control the full range of claimed disease, the possibility for a second application should be kept.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (17 data sets).

The performance of CA3642 against PUCCHD was comparable to, or more effective than that derived from applications of the reference products in all cases.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control PUCCHD on spring barley in the South-East EPPO zone.

Comments of zRMS:

5 efficacy trials were carried out to control of *Puccinia hordei* in spring barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved high effectiveness after 2 applications. The mean efficacy was 84,5% on L2 and 84,6% on L3 in the early assessments and 96,3% on L1, 92% on L2 and 87,8% on L3 in the late observations. No significant differences between test and reference products were observed. Excellent control (100%) has been noted after 1 application.
Based on above summary, CA3642 at 1 l/ha in 1-2 applications is effective for control of PUCCHD in spring barley in the SE zone.

Summary of data on PUCCHD in HORVS

Data is presented from a total of 16 trials to evaluate the efficacy of CA3642 applied at the proposed rate of 1.0 L/ha to control PUCCHD in spring barley. In all trial assessments across all EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 83-100% for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.1 % to 28 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 91-100% for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 5.7% to 47 %. Across North-East zone and neighbouring countries, efficacy ranged from 92-97% at early assessments following two applications of CA3462 at disease severities ranging between 4.3 and 47%.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early or late assessments ranged from 84-97 % for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 4.3 % to 28 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of PUCCHD in spring barley.

Spring barley (HORVS) – Net blotch of barley (PYRNTE - *Pyrenophora teres*)

A total of 45 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Net blotch (PYRNTE) in spring barley (HORVS) in the Maritime (9 trials), North-East (27 trials) and South-East (9 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Denmark (1 trial), Germany (4 trials) or Great Britain (4 trials).
Trials from the North-East EPPO zone was carried out in Latvia (4 trials), Lithuania (2 trials) and Poland (21 trials).
Trials from the South-East EPPO zone were carried out in Hungary (5 trials), Romania (2 trials) and Slovakia (2 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rate of 1.0 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at 1.0 L/ha consistently and significantly reduced disease compared to the untreated control and was generally comparable to, or more effective than the reference products although comparability to prothioconazole became weaker especially at later timings.

HORVS – PYRNTE – Maritime EPPO zone

Nine trials are available to evaluate the efficacy of CA3642 applied twice at the proposed dose rate of 1.0 L/ha against PYRNTE in the Maritime EPPO zone. Trials were carried out in Denmark (1 trial), Germany (4 trials) and Great Britain (4 trials), between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 13-27 days later, at BBCH 42-59.

Table 3.2-394: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against PYRNTE – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM*	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	Summarized PTZ Products EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha	CA3642 at 1.0 L/ha compared to	
						1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 - 0.72 L/ha 200 g PTZ/ha	SC 200 g AZX /ha or 150 g AZX /ha	Summarized PTZ Products	Summarized CA2702
Efficacy after 2 applications										
LEAF1 early	34-42	15-20	3	*Mean*	*12.2*	*~~70.1~~ 70.0*	*~~78.3~~ 78.6*	*55.7*	2=	1=
				Min	5.5	~~44.8~~ 44.6	~~56.4~~ 57.2	~~19.3~~ 19.2	1>	2>
				Max	22.3	100	100	~~84.3~~ 84.2		
LEAF1 late	37-61	21-37	4	*Mean*	*52*	*67*	*~~63.4~~ 63.5*	*44*	2=	2=
				Min	15.3	~~52~~ 51.9	25	26.7	1>	2>
				Max	100	78	~~80.6~~ 80.8	~~72.5~~ 72.6	1<	
LEAF2 early	30-42	14-15	3	*Mean*	*37.6*	*~~77.6~~ 77.7*	*~~87.9~~ 87.8*	*57.2*	2=	3>
				Min	21.5	~~60.9~~ 61.0	~~82.2~~ 82.3	~~31.2~~ 31.3	1<	
				Max	54.2	~~99.5~~ 99.7	~~99.1~~ 99.0	94.1		
LEAF2 late	37-56	21-39	6	*Mean*	*32*	*~~55.8~~ 55.7*	*~~72.8~~ 72.9*	*~~46.1~~ 45.4*	4=	5=
				Min	5	~~22.8~~ 22.9	~~48.2~~ 48.1	18.7	2<	1>
				Max	91.8	~~76.9~~ 76.3	~~87.8~~ 87.7	~~84~~ 83.3		
LEAF3 early	28-42	14-15	4	*Mean*	*43.3*	*66.9*	*74*	*45.4*	2=	4>
				Min	4.5	42.3	60.5	12.3	1<	
				Max	68.3	86.7	88.9	75.6	1>	
LEAF3 late	53-56	29-37	2	*Mean*	*86*	*29.8*	*47.8*	*15.2*	2<	1=
				Min	72	23.8	42.9	8.5		1>
				Max	100	35.9	52.6	21.9		
LEAF4 early	42	15	1	*Mean*	*100*	*38.2*	*50.2*	*6.3*	1<	1>

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**Summarized PTZ Products EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 - 0.72 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha or 150 g AZX /ha**	**Summarized PTZ Products**	**Summarized CA2702**
Efficacy after 1 application										
LEAF1 late	26	-	1	*Mean*	*38.6*	*72.5*	*94.3*	*46.6*	1<	1>
LEAF2 early	16	-	1	*Mean*	*13.4*	*69.4*	*65.7*	*44.8*	1=	1=
LEAF2 late	26	-	1	*Mean*	*51.6*	*66.7*	*89.5*	*32.4*	1<	1>
LEAF 3 early	16-19	-	3	*Mean*	*25.8*	*42.7*	*70.6*	*48.8*	1=	3=
				Min	11.5	16.5	60.9	43	2<	
				Max	53.8	77	78.1	59.1		
LEAF3 late	26	-	1	*Mean*	*51.2*	*49.6*	*78.3*	*8*	1<	1>
LEAF4 early	16	-	2	*Mean*	*20*	*63.2*	*60.4*	*64.2*	2=	1=
				Min	17.8	46.2	41.6	52		1<
				Max	22.1	80.3	79.2	76.4		
LEAF4 late	26-27	-	2	*Mean*	*35.8*	*45.8*	*69.8*	*3.2*	2<	2>
				Min	11.9	45.3	63.1	0.8		
				Max	59.6	46.2	76.5	5.5		

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At early assessment dates (14-20 DA-B) 70 % efficacy was observed on leaf level 1 across 3 trials, 78 % efficacy was observed on leaf level 2 across 3 trials, 67% efficacy was observed at leaf level 3 across 4 trials and 38% at leaf level 4 in 1 trial. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 in 6 out of the 11 data sets, CA3642 was significantly more effective in 1 data set and was significantly less effective in 4 data sets. Compared to the azoxystrobin reference product CA2702, CA3642 was significantly more effective in 10 of the 11 data sets, and statistically comparable in 1 data set.

At later assessment dates (21-37 DA-B), mean efficacy of 67 % was observed on leaf level 1 across 4 trials, 56 % efficacy was observed on leaf level 2 across 6 trials and 30% efficacy was observed at leaf level 3 across 2 trials. The efficacy achieved by CA3642 was statistically comparable to the efficacy of the prothioconazole reference products in 6 out of the 12 data sets, was significantly less effective in 5 data sets and significantly more effective in 1 data set. The performance of CA3642 was statistically comparable to CA2702 (azoxystrobin) in 8 out of 12 data sets, with significantly higher efficacy than CA2702 in 4 data sets.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
At 16-19 DA-A, 69 % efficacy was observed on leaf level 2 in 1 trial, 43 % efficacy was observed on leaf level 3 across 3 trials and 63% efficacy was observed at leaf level 4 across 2 trials. Performance of CA3642 applied at 1.0 L /ha was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 in 4 out of the 6 data sets, and was significantly less effective in 2 data sets. Compared to the azoxystrobin reference product CA2702, CA3642 was statistically comparable in 5 of the 6 data sets and significantly less effective in 1 data set.

At later assessment dates (26-27 DA-B), mean efficacy of 73 %, 67 % and 50 % was observed on leaf levels 1, 2 and 3, respectively, in 1 trial, and 46 % efficacy was observed on leaf level 4 across 2 trials. The efficacy achieved by CA3642 was significantly less effective than that of the prothioconazole reference products in all 5 data sets. The performance of CA3642 was significantly more effective compared to CA2702 (azoxystrobin) in all 5 data sets.

Overall, CA3642 applied twice at 1.0 L/ha achieved moderate control or a reduction in disease on the upper leaf levels 1, 2 and 3 at all timings. These data indicate that two applications are more effective for the control of PYRNTE.

At all assessments, CA3642 significantly reduced disease severity compared to untreated plots (34 data sets).

The performance of two applications of CA3642 against PYRNTE was comparable to, or significantly more effective than that derived from applications of the reference products. After one application, CA3642 was consistently more effective than the azoxystrobin standard, but became less effective compared to the prothioconazole standards at later assessments.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control PYRNTE on spring barley in the Maritime EPPO zone.

Comments of zRMS: 9 efficacy trials were carried out to control of *Pyrenophora teres* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications. The mean efficacy was 70% on L1, 77,7% on L2, 66,9% on L3 in the early assessment and 67% on L1 in the late observation. The comparable level of control was visible for CA2445 and significant inferior for CA2702. The test product at claimed dose rate

presented moderate effectiveness also after 1 application with results of 69,4% on L2 and 72,5% on L1 in the early and late assessments respectively.
Based on above summary, CA3642 at 1 l/ha in 1-2 applications is moderately effective for control of PYRNTE in spring barley in the MAR zone.

HORVS – PYRNTE – North-East EPPO zone

A total of 27 trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against PYRNTE in the North-East EPPO zone. Trials were carried out in Latvia (4 trials), Lithuania (2 trials) and Poland (21 trials), between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 13-30 days later, at BBCH 45-61.

Table 3.2-395: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against PYRNTE – valid assessments – trials from North-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**OSIRIS 65 EC 65 g/L EC**	**DELARO 325 SC 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha o r 150 g AZX /ha**	**2 l/ha 130 g ai/ha**	**1 l/ha 325 g ai/ha**	**CA2445**	**Summarized CA2702**	**OSIRIS Or DELARO**
Efficacy after 2 applications													
LEAF1 early	28-45	14-18	6	*Mean*	*21.3*	*91.5*		*78.2*				4=	
				Min	4	83.6		42.8				2>	
				Max	48.1	100		100					
			3	*Mean*	*36.7*	*89.6*	*86.7*	*64.2*			3=	1=	
				Min	20.1	83.6	79.2	42.8				2>	
				Max	48.1	95.7	93.8	78.6					
			2	*Mean*	*6.5*	*89.9*		*88.1*	*67*			2=	2>
				Min	4	89.9		87.5	64				
				Max	8.9	90		88.8	70				
			1	*Mean*	*4.8*	*100*		*100*		*97.9*		1=	1=
LEAF1 late	35-55	21-36	14	*Mean*	*9*	*81*		*73.9*				10=	
				Min	4.1	57		41.7				4>	
				Max	16.6	100		99.4					
			3	*Mean*	*9.3*	*96.5*		*89.8*		*98.7*		2=	3=
				Min	4.1	94.4		75		97.6		1>	
				Max	16.6	100		99.4		100			
			10	*Mean*	*8.1*	*76.6*		*69.1*	*75.9*			7=	7=
				Min	4.1	57		41.7	53.5			3>	2>
				Max	13	91.2		91.5	94.6				1<
			9	*Mean*	*8.7*	*73.9*	*72.4*	*65.4*			8=	6=	
				Min	4.1	57	54.7	41.7			1<	3>	
				Max	16.5	87.8	95.9	91.5					

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**OSIRIS 65 EC 65 g/L EC**	**DELARO 325 SC 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha o r 150 g AZX /ha**	**2 l/ha 130 g ai/ha**	**1 l/ha 325 g ai/ha**	**CA2445**	**Summarized CA2702**	**OSIRIS Or DELARO**
LEAF2 early	28-45	14-18	12	*Mean* Min Max	*19.4* 4.9 68.8	*86.6* 61.2 98.4		*77.9* 30.1 94.7				8= 4>	
			7	*Mean* Min Max	*23.7* 4.9 68.8	*84.3* 61.2 96.8	*85.9* 63.7 98.6	*74.4* 30.1 94.7			6= 1<	4= 3>	
			5	*Mean* Min Max	*11.8* 4.9 12.6	*82.6* 61.2 92.9		*84.9* 79.4 87.1	*75.3* 65.5 88.6			5=	4= 1>
			2	*Mean* Min Max	*9.9* 6.4 13.4	*94* 89.6 98.4		*80.3* 68.8 91.8		*93.7* 87.3 100		1= 1>	2=
LEAF2 late	34-55	15-36	19	*Mean* Min Max	*14.4* 4.3 60	*80.7* 58.7 98.3							
			18	*Mean* Min Max	*14.4* 4.3 60	*80.2* 58.7 98.3		*73.5* 44.3 98.3				14= 4>	
			6	*Mean* Min Max	*13.3* 4.3 30	*88.9* 81.4 98.3		*86.4* 76.7 98.3		*91.6* 83.9 100		6=	6=
			12	*Mean* Min Max	*15.2* 5.8 60	*76.4* 58.7 88.5	*77.1* 47.8 96.6	*68.4* 44.3 96.6			9= 2< 1>	9= 3>	
			12	*Mean* Min Max	*11.1* 5.8 18.3	*77.7* 58.7 88.5		*70.8* 44.3 96.6	*77.7* 52.7 93.2			9= 3>	10= 2<

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**OSIRIS 65 EC 65 g/L EC**	**DELARO 325 SC 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha or 150 g AZX /ha**	**2 l/ha 130 g ai/ha**	**1 l/ha 325 g ai/ha**	**CA2445**	**Summarized CA2702**	**OSIRIS Or DELARO**
LEAF3 early	28-36	14-16	11	*Mean* Min Max	*20.1* 4.4 57.9	*86.3* 62.6 97.8		*77.6* 28.2 96.3				10= 1>	
			8	*Mean* Min Max	*23.3* 4.4 57.9	*85* 62.6 97.8	*85.7* 64.9 96.3	*76.2* 28.2 96.3			7= 1<	7= 1>	
			2	*Mean* Min Max	*7.3* 7 7.5	*86.3* 84 88.6		*81.4* 81.3 81.4		*89.8* 85.3 94.3		2=	2=
			4	*Mean* Min Max	*12.3* 6.5 20	*85.4* 64.6 97		*84.9* 80.9 92.4	*80.5* 71.5 84.6			4=	4=
LEAF3 late	35-42	22-26	3	*Mean* Min Max	*5.5* 4.3 7.5	*81.6* 76.7 89.4	*88.3* 83.7 95.7	*67.9* 53.3 85.1	*85.3* 78.7 95.7		3=	1= 2>	3=
LEAF4 early	29-36	15	2	*Mean* Min Max	*11.5* 7.6 15.3	*97.7* 95.4 100	*96.7* 93.5 100	*78.7* 68.4 88.9	*92.5* 85 100		2=	1= 1>	2=
			4	*Mean* Min Max	*9.1* 6.2 15.3	*98.5* 95.4 100		*86.1* 68.4 100				3= 1>	
			2	*Mean* Min Max	*6.8* 6.2 7.4	*99.2* 98.4 100		*93.5* 87.1 100		*97.6* 95.2 100		2=	2=

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2445 PTZ 250 g/L EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha	OSIRIS 65 EC 65 g/L EC	DELARO 325 SC 325 g/L SC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	SC 200 g AZX /ha o r 150 g AZX /ha	2 l/ha 130 g ai/ha	1 l/ha 325 g ai/ha	CA2445	Summarized CA2702	OSIRIS Or DELARO
Efficacy after 1 application													
LEAF1 early	14	14	1	*Mean*	*8.5*	*95.3*		*95.3*	*67.1*			1=	1>
LEAF2 early	14-19		5	*Mean*	*8.4*	*87.6*		*82*				5=	
				Min	5.1	75		63.2					
				Max	16.9	96.8		92.3					
			2	*Mean*	*6.4*	*78.7*	*73.7*	*67.9*			2=	2=	
				Min	5.1	75	63.2	63.2					
				Max	7.6	82.4	84.3	72.5					
			2	*Mean*	*11.4*	*92*		*91.9*	*82.8*			2=	2=
				Min	5.9	89.8		91.5	75.7				
				Max	16.9	94.1		92.3	89.8				
			1	*Mean*	*6.3*	*96.8*		*90.5*		*90.5*		1=	1=
LEAF3 early	14-19		7	*Mean*	*13.9*	*82.1*		*74.5*				6=	
				Min	4	58.8		60				1>	
				Max	32.5	100		93.5					
			3	*Mean*	*9.5*	*80.6*	*77.2*	*72*			3=	3=	
				Min	4.6	68.8	61.6	61.1					
				Max	12.5	93.5	95.7	93.5					
			3	*Mean*	*16.2*	*92.3*		*92.1*	*85.3*			3=	2=
				Min	4.6	91.1		89.8	76.3				1>
				Max	32.5	93.5		93.5	90.5				
			2	*Mean*	*12.5*	*86.4*		*65*		*87*		1=	2=
				Min	4	72.9		60		79		1>	
				Max	21	100		70		95			
LEAF3 late	30		1	*Mean*	*5.1*	*58.8*	*0*	*66.7*	*58.8*			1=	1=
LEAF4 early	14-15		4	*Mean*	*10.6*	*76.8*	*76.7*	*70.2*			4=	3=	
				Min	4.6	37	37	32.6				1>	
				Max	21.5	93.5	93.5	91.5					
			1	*Mean*	*9.2*	*93.5*	*93.5*	*89.1*	*88*		1=	1=	1=

<u>After two applications of CA3642 applied at 1.0 L/ha</u>

At the early timings (14-18 DA-B) in the trials carried out in the North-East EPPO zone, 92 % efficacy was observed at leaf level 1 across 6 trials, 87 % efficacy was observed at the leaf 2 level across 12 trials, 86 % efficacy was observed at leaf level 3 across 11 trials, and 98.5% efficacy was observed on leaf level 4 across 4 trials. The performance of CA3642 applied at 1.0 L/ha was statistically comparable compared to CA2702 in 25 out of 33 data sets and significantly more effective in the other 8 data sets. The performance of CA3642 applied at 1.0 L/ha was statistically comparable to CA2445 where applied in 18 out of 20 data sets and significantly less effective in 2 data sets. Compared to OSIRIS where applied, CA3642 was significantly more effective in 3 data sets and statistically comparable in 10 data sets, and CA3642 was statistically comparable to DELARO in all 7 data sets where applied.

At later assessment dates (21-36 DA-B), efficacy of 81 % was observed on leaf level 1 across 14 trials, 80 % efficacy was observed on leaf level 2 across 18 trials, and 82 % efficacy was observed at leaf level 3 across 3 trials, after two applications of 1.0 L/ha CA3642. The efficacy of CA3642 applied at 1.0 L/ha was statistically comparable compared to CA2445 where applied in 20 of 24 data sets where applied, significantly less effective in 3 data sets and significantly more effective in 1 data set. Compared to CA2702, the performance of CA3642 was statistically comparable in 25 data sets and significantly more effective in 10 data sets.

<u>After one application of CA3642 applied at 1.0 L/ha</u>

At early assessment timings (14-19 DA-A), 95 % efficacy was observed at leaf level 1 in 1 trial, 88 % efficacy was observed at leaf level 2 across 5 trials, 82 % efficacy was observed at leaf level 3 across 7 trials and 77% efficacy was observed at leaf level 4 across 4 trials. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the reference product CA2445 in all 9 data sets where applied, and CA3642 was statistically comparable to the reference product CA2702 in 15 out of all 17 data sets with significantly better control than CA2702 in the other 2 data sets. Compared to OSIRIS in 5 datasets CA3642 was statistically comparable and in 2 datasets CA3642 gave significantly better control.

At a later assessment timing (30 DA-A), 59 % efficacy was observed at leaf level 3 in 1 trial. Performance of CA3642 applied at 1.0 L /ha was statistically comparable to CA2702 and OSIRIS.

Overall, CA3642 applied once or twice at 1.0 L/ha achieved good control on the upper leaf levels 1, 2 and 3 at all assessment timings.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (87 data sets).

The efficacy against PYRNTE was comparable to, or more effective than that derived from applications of the reference products in the vast majority of data sets according to statistical analysis.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control PYRNTE on spring barley in the North-East EPPO zone.

Comments of zRMS:

27 efficacy trials were carried out to control of *Pyrenophora teres* in spring barley in the North-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. The mean efficacy was 91,5% on L1, 86,6% on L2, 86,3% on L3 and 98,5% on L4 in the early assessments and 81% on L1, 80,2% on L2 and 81,6% on L3 in the late observations. The comparable level of control for the reference products has been noted in the most trials. Also acceptable effectiveness was observed after 1 application. CA3642 at claimed dose rate presented results of 95,3% on L1, 87,6% on L2, 82,1% on L3 and 76,8% on L4 in the early assessment.
Based on above summary, CA3642 at 1 l/ha in 1-2 applications is effective for control of PYRNTE in spring barley in the NE zone.

HORVS – PYRNTE – South-East EPPO zone

Nine trials are available to evaluate the efficacy of CA3642 applied twice at the proposed dose rate of 1.0 L/ha against PYRNTE in the South-East EPPO zone. Trials were carried out in Hungary (5 trials), Romania (2 trials) and Slovakia (2 trials), in 2019 or 2020.
The first application took place at crop stage BBCH 31-37 and the second application was done 14-27 days later, at BBCH 51-61.

Table 3.2-396: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against PYRNTE – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Summarized 'PRIAXOR 225 g/L EC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.5 l/ha 125 g ai/ha	1.5 l/ha 338 and 337 g ai/ha	CA2702	CA2445	Bumper or PRIAXOR
Efficacy after 2 applications													
LEAF1 early	36	15	2	*Mean*	*9.4*	*85.9*	*56.4*	*92.6*			2>	1=	
				Min	9	79.6	56.1	91.8				1<	
				Max	9.8	92.2	56.7	93.3					
LEAF1 late	41-51	24-29	3	*Mean*	*22*	*61.4*	*47.7*			*87.7*	2<		2<
				Min	5	38	32			78	1=		1=
				Max	41.9	74.2	62.8			95.8			
			2	*Mean*	*23.5*	*56.1*	*47.4*	*73.3*		*83.6*	1=	1=	1=
				Min	5	38	32	64		78	1<	1<	1<
				Max	41.9	74.2	62.8	82.6		89.3			
LEAF2 early	29-36	15	5	*Mean*	*13.6*	*86.7*	*75.6*				2=		
				Min	4.2	75	56.5				3>		
				Max	24.2	98.4	98.4						
			4	*Mean*	*13.9*	*83.8*	*70*	*85.7*			1=	1=	
				Min	4.2	75	56.5	76.2			3>	3<	
				Max	24.2	90.5	78.6	94.2					
			2	*Mean*	*6.5*	*81.5*	*75.1*	*79*		*90.2*	1=	1=	1=
				Min	4.2	75	71.6	76.2		87.5	1>	1<	1<
				Max	8.8	88.1	78.6	81.8		92.9			
			1	*Mean*	*12.3*	*98.4*	*98.4*		*51.2*		1=		1>

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**CA2445 PTZ 250 g/L EC**	**BUMPER 25 EC 250 g/L EC**	**Summarized 'PRIAXOR 225 g/L EC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 338 and 337 g ai/ha**	**CA2702**	**CA2445**	**Bumper or PRIAXOR**
LEAF2 late	35-51	21-29	7	*Mean*	*22.9*	*72.1*	*61.5*				4=		
				Min	5.9	37.4	29.5				3>		
				Max	68.9	93.2	92.4						
			5	*Mean*	*21*	*69.4*	*63.4*	*73.2*		*81.1*	4=	4=	4=
				Min	5.9	37.4	29.5	53.2		63.3	1>	1<	1<
				Max	68.9	84.8	92.4	86.1		96.2			
			6	*Mean*	*22.3*	*68.6*	*58.4*			*82.7*	4=		4=
				Min	5.9	37.4	29.5			63.3	2>		2<
				Max	68.9	84.8	92.4			96.2			
			1	*Mean*	*26.5*	*93.2*	*80*		*43.8*		1>		1<
LEAF3 early	29-33	15	4	*Mean*	*14.7*	*88.2*	*82.9*				3=		
				Min	4.6	73.9	71.3				1>		
				Max	25.8	97.8	96.1						
			3	*Mean*	*11*	*85.6*	*78.5*	*84.9*		*91.6*	2=	2=	2=
				Min	4.6	73.9	71.3	75.6		83.4	1>	1<	1<
				Max	15.7	97.8	84.8	100		100			
			1	*Mean*	*25.8*	*96.1*	*96.1*		*43.4*		1=		1>
LEAF3 late	35-42	21-27	1	*Mean*	*12.1*	*87.6*	*86.8*	*71.1*		*82.6*	1=	1=	1=
			1	*Mean*	*60.3*	*90.9*	*77.4*		*32.7*		1>		1>
			2	*Mean*	*36.2*	*89.2*	*82.1*				1=		
				Min	12.1	87.6	77.4				1>		
				Max	60.3	90.9	86.8						
Efficacy after 1 application													
LEAF1 early	21		2	*Mean*	*4.5*	*85.7*	*58.7*	*100*			2>	1=	
				Min	4.3	83	53.5	100				1<	
				Max	4.7	88.4	63.8	100					
LEAF2 early	15		2	*Mean*	*6.9*	*84.7*	*59.8*	*95.6*			2>	1=	
				Min	6.8	81.2	58.8	95.6				1<	
				Max	6.9	88.2	60.9	95.7					

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**CA2445 PTZ 250 g/L EC**	**BUMPER 25 EC 250 g/L EC**	**Summarized 'PRIAXOR 225 g/L EC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 338 and 337 g ai/ha**	**CA2702**	**CA2445**	**Bumper or PRIAXOR**
LEAF2 late	21		2	*Mean*	*11*	*84.1*	*52.4*	*94.2*			2>	2<	
				Min	8.3	83.9	51.8	92.8					
				Max	13.7	84.3	53	95.6					
LEAF3 early	15		2	*Mean*	*13*	*80.2*	*54.1*	*96.3*			2>	1=	
				Min	11.8	69.7	51.4	95.1				1<	
				Max	14.2	90.7	56.8	97.5					
LEAF4 early	14-18		2	*Mean*	*7.4*	*86.9*	*82.1*				1=		
				Min	7.2	76.4	68.1				1>		
				Max	7.6	97.4	96.1						
			1	*Mean*	*7.2*	*76.4*	*68.1*	*84.7*		*88.9*	1>	1<	1<
			1	*Mean*	*7.6*	*97.4*	*96.1*		*51.3*		1=		1>

After two applications of CA3642 applied at 1.0 L/ha

At the early timings (15 DA-B) in the trials carried out in the South-East EPPO zone, 86 % efficacy was observed at leaf level 1 across 2 trials, 87 % efficacy was observed at the leaf 2 level across 5 trials, and 88 % efficacy was observed at leaf level 3 across 4 trials. The performance of CA3642 applied at 1.0 L/ha was significantly more effective compared to CA2702 in 6 out of 11 data sets and statistically comparable in the other 5 data sets. The performance of CA3642 applied at 1.0 L/ha was statistically comparable to CA2445 where applied in 4 out of 9 data sets and significantly less effective in 5 data sets. Compared to PRIAXOR where applied, CA3642 was statistically comparable in 3 data sets and significantly less effective in 2 data sets. CA3642 was significantly more effective than BUMPER in 2 data sets where applied.

At later assessment dates (21-29 DA-B), efficacy of 61 % was observed on leaf level 1 across 3 trials, 72 % efficacy was observed on leaf level 2 across 7 trials, and 89 % efficacy was observed at leaf level 3 across 2 trials, after two applications of 1.0 L/ha CA3642. The performance of CA3642 applied at 1.0 L/ha was significantly more effective compared to CA2702 in 6 out of 12 data sets and statistically comparable in the other 6 data sets. The performance of CA3642 applied at 1.0 L/ha was statistically comparable to CA2445 where applied in 6 out of 8 data sets and significantly less effective in 2 data sets. Compared to PRIAXOR where applied, CA3642 was statistically comparable in 6 data sets and significantly less effective in 4 data sets. CA3642 was significantly more effective than BUMPER in 2 data sets where applied.

After one application of CA3642 applied at 1.0 L/ha

At early assessment timings (14-21 DA-A), 86 % efficacy was observed at leaf level 1 across 2 trials, 85 % efficacy was observed at leaf level 2 across 2 trials, 80 % efficacy was observed at leaf level 3 across 2 trials and 87% efficacy was observed at leaf level 4 across 2 trials. The performance of CA3642 applied at 1.0 L/ha was significantly more effective compared to CA2702 in 7 out of 8 data sets and statistically comparable in the other data set. The performance of CA3642 applied at 1.0 L/ha was statistically comparable to CA2445 where applied in 3 out of 7 data sets, where applied, and significantly less effective in 4 data sets. Compared to PRIAXOR where applied, CA3642 was significantly less effective in 1 data set where applied. CA3642 was significantly more effective than BUMPER in 1 data set where applied.

At a later assessment timing (21 DA-A), 84 % efficacy was observed at leaf level 2 across 2 trials. Performance of CA3642 applied at 1.0 L/ha was significantly more effective than CA2702 in both data sets and significantly less effective than CA2445 in both data sets.

Overall, CA3642 applied twice at 1.0 L/ha achieved good control on the upper leaf levels 1, 2 and 3 at the early assessment timings, with moderately good control on leaves 1 and 2 and good control on leaf 3 at the later timings. Good control was achieved on the upper leaf levels 1, 2 and 3 at all timings after 1 application.

With either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots in 32 of the 33 data sets from the SE EPPO zone.

The efficacy against PYRNTE was comparable to, or more effective than that derived from applications of the azoxystrobin reference products, and was comparable to, or less effective than the prothioconazole standard, according to statistical analysis.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control PYRNTE on spring barley in the South-East EPPO zone.

Comments of zRMS:

9 efficacy trials were carried out to control of *Pyrenophora teres* in spring barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved moderate to high effectiveness after 2 applications. The mean efficacy was 85,9% on L1, 86,7% on L2 and 88,2% on L3 in the early assessments and 72,1% on L2 and 89,2% on L3 in the late observations. No significant differences between test product and CA2445 were observed whilst CA2702 presented inferior results. Good control has been noted also after 1 application. CA3642 at claimed dose rate had the mean efficacy of 85,7% on L1, 84,7% on L2, 80,2% on L3 and 86,9% on L4 in the early assessments. Similar effect was visible also in the late observation.
Based on the above summary, CA3642 at 1 l/ha in 1-2 applications is effective for control of PYRNTE in spring barley in the SE zone.

Summary of data on PYRNTE in HORVS

Data is presented from a total of 45 trials to evaluate the efficacy of CA3642 applied at the proposed rate of 1.0 L/ha to control PYRNTE in spring barley. In all except one of the trial assessments across all EPPO zones, applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was generally comparable to, or more effective than that observed from applications of the reference products across the EPPO zones although comparability to prothioconazole became weaker in some assessments especially at later timings.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early assessments ranged from 67-78% for two applications of CA3642 at 1.0 L/ha. At later timings, efficacy dropped to 30-67% on leaf levels 1-3. In these trials disease severity ranged from 4.5 % to 100 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early assessments ranged from 86-92% for two applications of CA3642 at 1.0 L/ha decreasing slightly but still providing good control at 80-82% efficacy at the later timings. In these trials disease severity ranged from 4% to 69 %.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early assessments ranged from 86-88 % for two applications of CA3642 at 1.0 L/ha decreasing on average to 61-89% at the later timings with good control remaining on leaf level 3. In these trials disease severity ranged from 4.2 % to 69 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of PYRNTE in spring barley.

Spring barley (HORVS) – Leaf spot of Barley (RAMUCC - *Ramularia collo-cygni*)

A total of 17 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Leaf spot (RAMUCC) in spring barley (HORVS) in the Maritime (10 trials), North-East (2 trials) and South-East (5 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Denmark (1 trial), Germany (4 trials) or Great Britain (5 trials).
Trials from the North-East EPPO zone was carried out in Latvia (1 trial) or Lithuania (1 trial).
Trials from the South-East EPPO zone were carried out in Romania (2 trials) or Slovakia (3 trials).
In all trials the test product CA3642 was applied 2 times at the proposed dose rate of 1.0 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at 1.0 L/ha significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products in the vast majority of data sets.

HORVS – RAMUCC – Maritime EPPO zone

A total of 10 trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against RAMUCC in the Maritime EPPO zone. Trials were carried out in Denmark (1 trial), Germany (4 trials) and Great Britain (5 trials), in 2019 or 2021.
The first application took place at crop stage BBCH 30-37 and the second application was done 8-26 days later, at BBCH 42-65.

Table 3.2-397: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against RAMUCC – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of tri-als	Name Conc Type Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	Summarized PTZ Products EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha	AVIATOR XPRO 225 g/L EC	GIGANT 275 g/L SC	CA3642 at 1.0 L/ha compared to		
						1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 - 0.72 L/ha 200 g PTZ/ha	SC 200 g AZX /ha or 150 g AZX /ha	1 l/ha 225 g ai/ha	1 l/ha 275 g ai/ha	Summa-rized PTZ	Summa-rized CA2702	AVIA-TOR XPRO or GIGANT
Efficacy after 2 applications													
LEAF1 early	27-36	15-16	3	*Mean*	*25.7*	*54.8*		*46.5*				3=	
				Min	16.3	18.2		20.7					
				Max	39.8	85.7		87.4					
			2	*Mean*	*18.7*	*39.3*	*58*	*26.1*			1=	2=	
				Min	16.3	18.2	54.7	20.7			1<		
				Max	21.1	60.4	61.3	31.4					
			2	*Mean*	*28*	*73.1*		*59.4*		*63.4*		2=	2=
				Min	16.3	60.4		31.4		41.2			
				Max	39.8	85.7		87.4		85.7			
			1	Mean	*39.8*	*85.7*		*87.4*	*88.2*			1=	1=
LEAF1 late	39-52	27-34	8	*Mean*	*46*	*43.1*	*48.6*	*36.6*			5=	6=	
				Min	14	4.6	22.5	6.9			3<	2>	
				Max	100	94.3	100	96.7					
			1	*Mean*	*60.4*	*31.5*	*30.6*	*26.3*		*45.2*	1=	1=	1=
LEAF2 early	27-36	15-16	2	*Mean*	*17.7*	*62.5*				*60.6*			2=
				Min	16.7	52				43.3			
				Max	18.6	73.1				77.8			
			3	*Mean*	*39.2*	*57.5*	*77.2*	*28.5*			1=	1=	
				Min	18.6	37.8	69.5	0			2<	2>	
				Max	60.3	82.6	90.7	85.6					
			4	*Mean*	*33.6*	*61.4*		*40.6*				2=	
				Min	16.7	37.8		0				2>	
				Max	60.3	82.6		85.6					
			1	*Mean*	*16.7*	*73.1*		*76.6*	*81.4*			1=	1=

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**Summarized PTZ Products EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**AVIATOR XPRO 225 g/L EC**	**GIGANT 275 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
						1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	**0.8 - 0.72 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha or 150 g AZX /ha**	**1 l/ha 225 g ai/ha**	**1 l/ha 275 g ai/ha**	**Summarized PTZ**	**Summarized CA2702**	**AVIATOR XPRO or GIGANT**
LEAF2 late	37-52	25-34	6	*Mean*	*49.5*	*36.1*	*40*	*31.7*			4=	5=	
				Min	21.2	0	5.4	0			2<	1>	
				Max	100	61.4	72.5	69.3					
			1	*Mean*	*60.5*	*35.9*	*29.9*	*20.5*		*36.2*	1=	1=	1=
LEAF3 early	27-35	15	3	*Mean*	*63.5*	*36.9*	*55.2*	*10.6*			1=	1=	
				Min	21.4	3.5	14.1	5.5			2<	2>	
				Max	100	57.3	75.8	15					
			1	*Mean*	*21.4*	*57.3*	*75.8*	*11.4*		*60.9*	1<	1>	1=
LEAF3 late	39-52	27-33	2	*Mean*	*59.8*	*38.7*	*43.2*	*36.6*			2=	2=	
				Min	51.3	32.8	42.2	27					
				Max	68.2	44.6	44.2	46.2					
			1	*Mean*	*68.2*	*32.8*	*42.2*	*27*		*46.2*	1=	1=	1=
LEAF4 early	35	15	1	*Mean*	*100*	*53.3*	*67.2*	*8.4*			1=	1>	
Efficacy after 1 application													
LEAF1 early	20	20	1	*Mean*	*4.9*	*100*	*100*	*81.6*			1=	1>	
LEAF2 early	15-20		2	*Mean*	*10*	*73.3*		*51*				1=	
				Min	5.8	58.6		48.6				1>	
				Max	14.2	88		53.4					
			1	*Mean*	*14.2*	*88*	*98.6*	*48.6*			1=	1>	
			1	*Mean*	*5.8*	*58.6*		*53.4*	*56.9*	*55.2*		1=	1= (both ref. products)

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type** **Rate**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**Summarized PTZ Products EC**	**Summarized CA2702 0.8 L/ha or 0.6 L/ha**	**AVIATOR XPRO 225 g/L EC**	**GIGANT 275 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
						1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	**0.8 - 0.72 L/ha 200 g PTZ/ha**	**SC 200 g AZX /ha or 150 g AZX /ha**	**1 l/ha 225 g ai/ha**	**1 l/ha 275 g ai/ha**	**Summa-rized PTZ**	**Summa-rized CA2702**	**AVIA-TOR XPRO or GIGANT**
LEAF3 early	15-20		2	*Mean* Min Max	*17* 10.8 23.1	***92.2*** **84.4** **100**	*92.2* 84.4 100	*72.3* 44.6 100			2=	1= 1>	
			3	*Mean* Min Max	*14.1* 8.4 23.1	***78.9*** **52.4** **100**		*62.1* 41.7 100				2= 1>	
			1	*Mean*	*8.4*	***52.4***		*41.7*	*52.4*	*41.7*		1=	1= (both ref. products)
LEAF4 early	16-20		2	*Mean* Min Max	*24.8* 11.9 37.7	***79.2*** **76.5** **82**	*76.9* 68.1 85.7	*71.2* 42.4 100			2=	1> 1<	

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At early assessment dates (15-16 DA-B) 55 % efficacy was observed on leaf level 1 across 3 trials, 61 % efficacy was observed on leaf level 2 across 4 trials, 37 % efficacy was observed at leaf level 3 across 3 trials and 53 % at leaf level 4 in 1 trial. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 in 5 out of the 9 data sets where applied and was significantly less effective in 4 data sets. CA3642 was significantly more effective than the azoxystrobin reference product CA2702 in 5 data sets and was statistically comparable in 6 data sets.

At later assessment dates (27-34 DA-B), mean efficacy of 43 % was observed on leaf level 1 across 8 trials, 36 % efficacy was observed on leaf level 2 across 6 trials and 39 % efficacy was observed at leaf level 3 across 2 trials. The efficacy achieved by CA3642 was statistically comparable to the efficacy of the prothioconazole reference products in 12 out of the 16 data sets and was significantly less effective in 4 data sets. The performance of CA3642 was statistically comparable to CA2702 (azoxystrobin) in 13 out of 16 data sets, with significantly higher efficacy than CA2702 in 3 data sets. Efficacy from CA3642 was also comparable to that from Gigant in the 3 trials where this was applied.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
At 15-20 DA-A, 100 % efficacy was observed on leaf level 1 in 1 trial, 73 % efficacy was observed on leaf level 2 across 2 trials, 79 % efficacy was observed on leaf level 3 across 3 trials and 79 % efficacy was observed at leaf level 4 across 2 trials. Performance of CA3642 applied at 1.0 L /ha was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 in all 6 data sets where applied. Compared to the azoxystrobin reference product CA2702, CA3642 was statistically comparable in 3 of the 8 data sets, significantly more effective in 4 data sets and significantly less effective in 1 data set.

Overall, CA3642 achieved moderate to good control on the upper leaves 1, 2 and 3 after one application at 1.0 L/ha, and two applications achieved moderate control of disease on the upper leaf levels 1 and 2 at the early timings, decreasing to a reduction in disease severity at the later timings.

CA3642 significantly reduced disease severity compared to untreated plots in 31 out of 35 data sets.

The performance of one or two applications of CA3642 against RAMUCC was comparable to, or significantly more effective than that derived from applications of the reference products in the majority of data sets.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control RAMUCC on spring barley in the Maritime EPPO zone.

Comments of zRMS:

10 efficacy trials were carried out to control of *Ramularia collo-cygni* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved low to moderate effectiveness after 2 applications. Also moderate control was observed after 1 application in the early observations. The mean efficacy was 100% on L1, 73,3% on L2, 78,9% on L3 and 79,2% on L4. Comparable results have been noted for the reference products.
Based on the above summary, CA3642 at 1 l/ha in 1-2 application is moderately effective for control of RAMUCC in spring barley in the MAR zone.

HORVS – RAMUCC – North-East EPPO zone

Two trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against RAMUCC in the North-East EPPO zone. Trials were carried out in Latvia (1 trial) and Lithuania (1 trial), in 2020 or 2021.

The first application took place at crop stage BBCH 37 and the second application was done 12-17 days later, at BBCH 59-61.

Table 3.2-398: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against RAMUCC – valid assessments – North-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type / Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC / 1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	Summarized CA2702 0.8 L/ha or 0.6 L/ha / SC 200 g AZX /ha or 150 g AZX /ha	CA2445 PTZ 250 g/L EC / 0.8 L/ha 200 g PTZ/ha	CA3642 at 1.0 L/ha compared to: Summarized CA2702	CA3642 at 1.0 L/ha compared to: CA2445 PTZ
Efficacy after 2 applications										
LEAF1 early	27	15	1	*Mean*	*6.9*	*78.3*	*63.8*	*69.6*	1=	1=
LEAF2 early	27-32	15	2	*Mean* Min Max	*7.3* 4.4 10.1	*79.5* 77.2 81.8	*49.2* 41.6 56.8	*83.1* 82.2 84.1	2=	2=
LEAF3 early	32	15	1	*Mean*	*9.4*	*69.1*	*52.1*	*73.4*	1=	1=
Efficacy after 1 application										
LEAF3 early	12	-	1	*Mean*	5.5	*78.2*	*80*	*81.8*	1=	1=
LEAF4 early	17	-	1	*Mean*	4.2	*28.6*	*21.4*	*33.3*	1=	1=
Summary North-East and supporting trials after 2 applications										
LEAF1 early	27-36	15-16	3	*Mean* Min Max	21.0 6.9 39.8	*74.8* *60.4* *85.7*	*60.9* *31.4* *87.4*			
LEAF1 early (SVK)	37	16	1		54.9	*82.3*	*74.0*	*88.7*		
LEAF2 early	27-36	15-16	4	*Mean* Min Max	12.5 4.4 18.6	*71.0* *52.0* *81.8*	*43.8* *0.0* *76.6*			
LEAF2 early (SVK)	37	16	1		76.9	*79.1*	*70.9*	*80.5*		
LEAF3 early	27-32	15	2	*Mean* Min Max	15.4 9.4 21.4	*63.2* *57.3* *69.1*	*31.8* *11.4* *52.1*	*74.6* *73.4* *75.8*		
LEAF3 early (SVK)	37	16	1		84.8	*76.3*	*67.3*	*76.3*		
Efficacy after 1 application										
LEAF3 early	12-15	-	2	*Mean* Min Max	7.0 5.5 8.4	*65.3* *52.4* *78.2*	*60.8* *41.7* *80.0*			

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early timing (14-17 DA-B) in the trials carried out in the North-East EPPO zone, 78 % efficacy was observed at leaf level 1 in 1 trial, 80 % efficacy was observed at the leaf 2 level across 2 trials, and 69 % efficacy was observed at leaf level 3 in 1 trial. The efficacy of CA3642 applied at 1.0 L/ha was statistically comparable to that of both CA2702 and CA2445 in all 4 data sets.

Results from both North-East EPPO zone and Germany are available for early assessments (15-16 DA-B) on leaf levels 1, 2 and 3 where the achieved mean efficacy was 75 % across 3 trials, 71% across 3 trials and 63 % across 2 trials, respectively, after two applications of 1.0 L/ha CA3642.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
At 12-17 DA-A, 78 % efficacy was observed on leaf level 3 in 1 trial and 29 % efficacy was observed at leaf level 4 in 1 trial. Performance of CA3642 applied at 1.0 L/ha was statistically comparable to that of both CA2702 and CA2445 in both data sets.

Results from both North-East EPPO zone and Germany are available for assessments at 12-15 DA-A on leaf level 3 where the achieved mean efficacy was 65 % across 2 trials.

Overall, CA3642 applied either once or twice at 1.0 L/ha achieved moderately good to good control on the upper leaf levels 1, 2 and 3 at all assessment timings.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (6 data sets).

The efficacy against RAMUCC was comparable to that derived from applications of the reference products in all data sets according to statistical analysis.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control RAMUCC on spring barley in the North-East EPPO zone.

Comments of zRMS:

2 efficacy trials were carried out to control of *Ramularia collo-cygni* in spring barley in the North-East EPPO climatic zone. Also 2 trials conducted in Germany have been included to the overall calculation as support for the Polish registration. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications with results of 74,8% on L1, 71% on L2 and 63,2% on L3. Also similar effect was visible after 1 application. The mean efficacy was 65,3% on L3 in the early assessment. No significant differences between test and reference products were observed. In 1 trial conducted in Slovakia, the test product at claimed dose rate presented low to high level of control in the early assessment. RAMUCC has a local significance in spring barley and 4 efficacy trials is sufficient for the Polish registration.
Based on the above summary, CA3642 at 1 l/ha in 1-2 application is moderately effective for control of RAMUCC in spring barley in the NE zone.

HORVS – RAMUCC – South-East EPPO zone

Five trials are available to evaluate the efficacy of CA3642 applied twice at the proposed dose rate of 1.0 L/ha against RAMUCC in the South-East EPPO zone. Trials were carried out in Romania (2 trials) and Slovakia (3 trials), in 2019 or 2020.
The first application took place at crop stage BBCH 32-37 and the second application was done 13-21 days later, at BBCH 55-61.

Table 3.2-399: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against RAMUCC – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Nativo Pro 325 g/L SC	Priaxor PCS + FLX** 225 g/L EC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.5 l/ha 125 g ai/ha	0.6 l/ha 195 g ai/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha	CA2702	CA2445	Bumper or Nativo Pro or Priaxor
Efficacy after 2 applications														
LEAF1 early	35-37	16-20	2	*Mean*	*32.3*	***81.3***	*74*	*87.6*				2>	1= 1<	
				Min	9.6	**80.2**	74	86.5						
				Max	54.9	**82.3**	74	88.7						
			1	*Mean*	*9.6*	***80.2***	*74*	*86.5*		*67.7*		2>	1=	1>
			1	*Mean*	*54.9*	***82.3***	*74*	*88.7*			*96.2*	1>	1<	1<
LEAF1 late	36-41	22-23	3	*Mean*	*19.7*	***80.7***	*77*					1=		
				Min	8.3	**74.7**	65.1					2>		
				Max	27.1	**85.3**	83.3							
			1	*Mean*	*8.3*	***74.7***	*65.1*	*85.5*		*57.8*		1>	1<	1>
			2	*Mean*	*25.5*	***83.7***	*82.9*		*53.5*			1=		2>
				Min	23.9	**82.2**	82.6		44.7			1>		
				Max	27.1	**85.3**	83.3		62.2					
LEAF2 early	30-37	15-20	3	*Mean*	*32.5*	***87***	*82.4*	*89.2*				1=	3=	
				Min	5.1	**79.1**	70.9	80.5				2>		
				Max	76.9	**100**	100	100						
			2	*Mean*	*10.4*	***91***	*88.1*	*93.6*		*84.6*		1=	3=	1=
				Min	5.1	**82.1**	76.3	87.2		71.2		1>		1>
				Max	15.6	**100**	100	100		98				
			1	*Mean*	*76.9*	***79.1***	*70.9*	*80.5*			*93.9*	1>	1=	1<
LEAF2 late	36-41	22-23	3	*Mean*	*33*	***79.5***	*75.9*					1=		
				Min	15.4	**77.9**	72.1					2>		
				Max	45.1	**81.9**	77.9							
			1	*Mean*	*15.4*	***77.9***	*72.1*	*86.4*		*68.2*		1>	1<	1>
			2	*Mean*	*41.8*	***80.2***	*77.8*		*45.3*			1=		2>
				Min	38.4	**78.5**	77.8		32.4			1>		
				Max	45.1	**81.9**	77.9		58.2					
LEAF3 early	30-37	15-16	3	*Mean*	*34.4*	***82.9***	*78.4*	*86.2*				1=	2=	

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**CA2445 (PROLINE) PTZ 250 g/L EC**	**BUMPER 25 EC 250 g/L EC**	**Nativo Pro 325 g/L SC**	**Priaxor PCS + FLX** 225 g/L EC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**0.6 l/ha 195 g ai/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**CA2702**	**CA2445**	**Bumper or Nativo Pro or Priaxor**
				Min	8.7	**76.3**	67.3	76.3				2>	1<	
				Max	84.8	**89.6**	87.5	92.7						
			2	*Mean*	*9.2*	***86.2***	*84*	*91.2*		*81.4*		1=	1=	2>
				Min	8.7	**82.8**	80.5	89.7		80.5		1>	1<	
				Max	9.6	**89.6**	87.5	92.7		82.3				
			1	*Mean*	*84.8*	***76.3***	*67.3*	*76.3*			*90.8*	1>	1=	1<

After two applications of CA3642 applied at 1.0 L/ha

At an early assessment date (15-20 DA-B) 81 % efficacy was observed on leaf level 1 across 2 trials, 87 % efficacy was observed on leaf level 2 across 3 trials and 83 % efficacy was observed on leaf level 3 across 3 trials. The performance of CA3642 was statistically comparable with that of CA2445 in 6 out of 8 data sets and significantly less effective in 2 data sets. The performance of CA3642 was statistically comparable with that of CA2702 in 2 out of 8 data sets and significantly more effective in 6 data sets. CA3642 was significantly more effective than NATIVO PRO in 4 out of 5 data sets where applied and statistically comparable in 1 data set. PRIAXOR was significantly more effective than CA3642 in all 3 data sets where applied.

At later assessment dates (22-23 DA-B), mean efficacy of 81 % was observed on leaf level 1 across 3 trials and 80 % efficacy was observed on leaf level 2 across 3 trials. The performance of CA3642 was significantly less effective than that of CA2445 in 2 data sets where applied. The performance of CA3642 was statistically comparable with that of CA2702 in 2 out of 6 data sets and significantly more effective in 4 data sets. CA3642 was significantly more effective than BUMPER in all 4 data sets where applied, and NATIVO PRO in 2 data sets where applied.

Overall, CA3642 applied twice at 1.0 L/ha achieved good control (≥80% control of efficacy) on the upper leaf levels 1, 2 and 3 at all assessment timings.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (14 data sets).

The performance of CA3642 against RAMUCC was comparable to, or more effective than that derived from applications of the reference products in the majority of data sets.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control RAMUCC on spring barley in the South-East EPPO zone.

Comments of zRMS:

5 efficacy trials were carried out to control of *Ramularia collo-cygni* in spring barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. The mean efficacy was 81,3% on L1, 87% on L2 and 82,9% on L3 in the early assessments. Also similar effect was observed in the late observation with results of 80,7% on L1. No significant differences between test and reference products have been noted. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Summary of data on RAMUCC in HORVS

Data is presented from a total of 17 trials to evaluate the efficacy of CA3642 applied at the proposed rate of 1.0 L/ha to control RAMUCC in spring barley. In all except four of the 55 trial assessments across all EPPO zones, applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones especially compared to azoxystrobin alone.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early assessments ranged from 27-61 % for two applications of CA3642 at 1.0 L/ha. At later timings, efficacy dropped to 36-43% on leaf levels 1-3. In these trials disease severity was relatively high, ranging from 14 % to 100 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early assessments ranged from 69-80 % for two applications of CA3642 at 1.0 L/ha. Across both North-East and neighbouring Maritime zone trials, efficacy ranged between 63-75 % two applications of CA3642 at 1.0 L/ha and disease severity was between 4.4 % and 40 % in these trials.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early and late assessments ranged from 80-87 % for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 5 % to 85 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of RAMUCC in spring barley.

Spring barley (HORVS) – Leaf Blotch (RHYNSE - *Rhynchosporium secalis*)

A total of 15 trials were carried out between 2019 and 2021 to evaluate the efficacy of CA3642 for the control of Leaf blotch (RHYNSE) in spring barley (HORVS) in the Maritime (8 trials), North-East (1 trial) and South-East (6 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in Germany (3 trials) and Great Britain (5 trials).
Trials from the North-East EPPO zone was carried out in Poland (1 trial).
Trials from the South-East EPPO zone were carried out in Romania (5 trials) or Slovakia (1 trial).
In all trials the test product CA3642 was applied 2 times at the proposed dose rate of 1.0 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.

Data are grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at 1.0 L/ha consistently significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products in the majority of data sets.

HORVS – RHYNSE – Maritime EPPO zone

Eight trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against RHYNSE in the Maritime EPPO zone. Trials were carried out in Germany (3 trials) and Great Britain (5 trials), between 2019 and 2021.
The first application took place at crop stage BBCH 31-37 and the second application was done 12-21 days later, at BBCH 43-61.

Table 3.2-400: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against RHYNSE – valid assessments – Maritime EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	Summarized PTZ Products EC	Summarized CA2702 0.8 L/ha or 0.6 L/ha	GIGANT 275 g/L SC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 - 0.72 L/ha 200 g PTZ/ha	SC 200 g AZX /ha or 150 g AZX /ha	1 l/ha 275 g ai/ha	Summarized PTZ	Summarized CA2702	GIGANT
Efficacy after 2 applications												
LEAF1 early	26	14	1	*Mean*	*4.6*	*78.3*	*93.5*	*21.7*		1=	1>	
LEAF1 late	41-55	29-34	3	*Mean*	*8.7*	*72.4*	*76.7*	*57.6*		3=	2=	
				Min	4.7	55.3	55.3	37.2			1>	
				Max	12.7	94.5	99.2	80.3				
LEAF2 early	26-35	14-17	7	*Mean*	*9.1*	*77.6*	*81.8*	*61.4*		6=	6=	
				Min	5.6	44.6	41.1	19.6		1<	1>	
				Max	21.1	98.6	100	84.2				
			1	*Mean*	*10.3*	*78.6*	*93.2*	*70.9*	*71.8*	1=	1=	1=
LEAF2 late	37-55	25-34	4	*Mean*	*21.5*	*63.6*	*71.8*	*60.4*		3=	2=	
				Min	7.6	31.6	59.2	51.3		1<	1>	
				Max	52	93.1	94.2	80			1<	
LEAF3 early	27-35	14-15	5	*Mean*	*29.8*	*69*	*69.4*	*53*		4=	3=	
				Min	13.2	25.7	26	22.3		1<	2>	
				Max	70.8	93.9	92.3	76.3				
			1	*Mean*	*14.2*	*69.7*	*55.6*	*34.5*	*77.5*	1=	1=	1=
LEAF3 late	43-52	29-33	3	*Mean*	*31.7*	*64.9*	*65.6*	*58.6*		3=	3=	
				Min	17.6	32.9	32.5	33.1				
				Max	45.3	88.1	90.3	89.8				
LEAF4 early	26-34	8-15	4	*Mean*	*34.9*	*66*	*71.9*	*66.9*		3=	1> 2=	
				Min	6.4	44.6	45.1	44.1		1<	1<	
				Max	63.2	89.4	90.6	89.4				
Efficacy after 1 application												
LEAF3 early	19	-	1	*Mean*	*21.4*	*42.5*	*43*	*42.1*		1=	1=	1=
LEAF4 early	13-19	-	4	*Mean*	*21*	*49.9*	*55.4*	*49.1*		3=	4=	
				Min	4.7	19.4	42.6	17.6		1<		
				Max	58.7	72.4	76.5	75.5				

After two applications of CA3642 applied at 1.0 L/ha

At early assessment dates (14-17 DA-B) 78 % efficacy was observed on leaf level 1 in 1 trial, 78 % efficacy was observed on leaf level 2 across 7 trials, 69 % efficacy was observed at leaf level 3 across 5 trials and 66 % at leaf level 4 across 4 trials. Performance of CA3642 applied at 1.0 L /ha and assessed at an early date was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 in 14 out of all 17 data sets, and was significantly less effective in 3 data sets. CA3642 was significantly more effective than the azoxystrobin reference product CA2702 in 3 data sets, significantly less effective in 1 data set and was statistically comparable in 13 data sets.

At later assessment dates (25-34 DA-B), mean efficacy of 72 % was observed on leaf level 1 across 3 trials, 64 % efficacy was observed on leaf level 2 across 4 trials and 65 % efficacy was observed at leaf level 3 across 3 trials. The efficacy achieved by CA3642 was statistically comparable to the efficacy of the prothioconazole reference products in 9 out of the 10 data sets and was significantly less effective in 1 data set. The performance of CA3642 was statistically comparable to CA2702 (azoxystrobin) in 7 out of 10 data sets, with significantly higher efficacy than CA2702 in 2 data sets and significantly lower effective in 1 data set.

After one application of CA3642 applied at 1.0 L/ha

At 13-19 DA-A, 43 % efficacy was observed on leaf level 3 in 1 trial and 50 % efficacy was observed on leaf level 4 across 4 trials. Performance of CA3642 applied at 1.0 L /ha was statistically comparable to the prothioconazole reference products CA2445 and PROLINE 275 in 4 out of the 5 data sets and significantly less effective in 1 data set. Compared to the azoxystrobin reference product CA2702, CA3642 was statistically comparable in all 5 data sets.

Overall, CA3642 achieved moderate control on the upper leaves 1, 2 and 3 after two applications at 1.0 L/ha. Limited data indicate that two applications are required for the control of RHYNSE with some control on leaf 3 after just one application of CA3642 at 1.0 L/ha.

At all assessments, whether after one or two applications, CA3642 significantly reduced disease severity compared to untreated plots (32 data sets).

The performance of one or two applications of CA3642 against RHYNSE was comparable to, or significantly more effective than that derived from applications of the reference products in the majority of data sets.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control RHYNSE on spring barley in the Maritime EPPO zone.

Comments of zRMS: 8 efficacy trials were carried out to control of *Rhynchosporium secalis* in spring barley in the Maritime EPPO climatic zone. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications. The mean efficacy was 78,3% on L1, 77,6% on L2, 69% on L3 and 66% on L4 in the early assessments. Comparable effect was visible in the late observations with results of 72,4% on L1, 63,6% on L2 and 64,9% on L3. No significant differences between test products and CA2445 were observed. CA2702 presented inferior results. Insufficient control has been noted after 1 application (<50%). Based on the above summary, CA3642 at 1 l/ha in 2 applications is moderately effective for control of RHYNSE in spring barley in the MAR zone.

HORVS – RHYNSE – North-East EPPO zone

One trial is available to evaluate the efficacy of CA3642 applied twice at the proposed dose rate of 1.0 L/ha against RHYNSE in Poland in the North-East EPPO zone in 2019.

The first application took place at crop stage BBCH 37 and the second application was done 14 days later, at BBCH 59.

Table 3.2-401: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS against RHYNSE – valid assessments – North-East EPPO zone

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**OSIRIS 65 EC 65 g/L EC**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**2 l/ha 130 g ai/ha**	**CA2702**	**OSIRIS 65 EC**
Efficacy after 2 applications										
LEAF1 early	31	17	1	*Mean*	*6.1*	~~*80.3*~~ *80.6*	~~*90.2*~~ *90.8*	~~*95.1*~~ *95.9*	1=	1=
LEAF2 early	29	15	1	*Mean*	*4.7*	~~*74.5*~~ *74.7*	~~*89.4*~~ *89.3*	~~*97.9*~~ *97.3*	1=	1=
LEAF3 early	29	15	1	*Mean*	*5.9*	*78.7*	~~*93.2*~~ *93.6*	~~*98.3*~~ *97.9*	1=	1=
Summary North-East and supporting trials after 2 applications										
LEAF1 early	26-31	14-17	2	*Mean* Min Max	*5.4* *4.6* *6.1*	*79.3* *78.3* *80.3*	*56.0* *21.7* *90.2*			
LEAF2 early	26-35	14-17	4	*Mean* Min Max	*6.6* *4.7* *10.3*	*79.4* *74.5* *83.9*				
			3	*Mean* Min Max	*7.2* *5.6* *10.3*	*81.1* *78.6* *83.9*	*58.2* *19.6* *84.2*			
LEAF3 early	27-29	15	2	*Mean* Min Max	*10.1* *5.9* *14.2*	*73.9* *69.7* *78.0*	 *55.6* 	 *93.2*		

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At early timings 15-17 DA-B in 1 trial, 80 % efficacy was observed at leaf level 1, 75 % efficacy was observed at the leaf 2 level and 78 % efficacy was observed at leaf level 3 in 1 trial. The efficacy of CA3642 applied at 1.0 L/ha was statistically comparable to that of CA2702 and OSIRIS in all 3 data sets.

Results from both North-East EPPO zone and Germany are available for early assessments (14-17 DA-B) on leaf levels 1, 2 and 3 where the achieved mean efficacy was 79 % across 2 trials, 79% across 4 trials and 78 % across 2 trials, respectively, after two applications of 1.0 L/ha CA3642.

Overall, CA3642 applied twice at 1.0 L/ha achieved moderately good to good control on the upper leaf levels 1, 2 and 3 at early assessment timings.

At all assessments, CA3642 significantly reduced disease severity compared to untreated plots (3 data sets).

The efficacy against RHYNSE was comparable to that derived from applications of the reference products in all data sets according to statistical analysis.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control RHYNSE on spring barley in the North-East EPPO zone.

Comments of zRMS:

Only 1 efficacy trial was carried out to control of *Rhynchosporium secalis* in spring barley in the North-East EPPO climatic zone. Also 3 trials conducted in Germany have been included to the general calculation as support for Polish registration. CA3642 at 1 l/ha achieved moderate effectiveness after 2 applications. The mean efficacy was 79,3% on L1, 79,4% on L2 and 73,9% on L3 in the early assessments. Similar effect was observed for the reference products. No results after 1 application were available. Limited number of trials has been submitted but an extrapolation from winter barley is possible in Poland.
Taking into account all trials, CA3642 at 1 l/ha in 2 applications is moderately effective for control of RHYNSE in spring barley in the NE zone.

HORVS – RHYNSE – South-East EPPO zone

Six trials are available to evaluate the efficacy of CA3642 applied up to two times at the proposed dose rate of 1.0 L/ha against RHYNSE in the South-East EPPO zone. Trials were carried out in Romania (5 trials) and Slovakia (1 trial), in 2019 or 2020.
The first application took place at crop stage BBCH 32-37 and the second application was done 15-21 days later, at BBCH 55-61.

Table 3.2-402: Summary – Efficacy of CA3642 (1.0 L/ha) in HORVS against RHYNSE – valid assessments – South-East EPPO zone

Leaf level assm. timing	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Nativo Pro 325 g/L SC	CA3642 at 1.0 L/ha compared to		
				Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.5 l/ha 125 g ai/ha	0.6 l/ha 195 g ai/ha	CA2702	CA2445	Bumper Or Nativo Pro
Efficacy after 2 applications													
LEAF1 early	35	15	2	*Mean*	*7.2*	*77.9*	*46*	*92.7*			2>	2<	
				Min	6.5	73.8	44.6	89.2					
				Max	7.8	82.1	47.4	96.2					
LEAF1 late	37-38	22-23	3	*Mean*	*10.9*	*85.5*	*76.9*	*93.1*		*70.9*	3>	3<	3>
				Min	9.3	79.6	71	90.3		61.3			
				Max	11.9	89.1	80.9	94.8		76.5			
LEAF2 early	30-35	15	5	*Mean*	*10.3*	*92.4*	*82.9*	*97.2*			3=	3=	
				Min	5.3	80.6	57.1	91.1			2>	2<	
				Max	18	100	100	100					
			3	*Mean*	*5.4*	*100*	*100*	*100*		*86.3*	3=	3=	3>
				Min	5.3	100	100	100		84.9			
				Max	5.5	100	100	100		87.3			
LEAF2 late	37-41	22-23	4	*Mean*	*17*	*84.5*	*77.8*				2=		
				Min	6.1	81.6	73.8				2>		
				Max	20.7	90.2	81.2						
			3	*Mean*	*20.6*	*82.7*	*79.1*	*88.7*		*75.4*	2=	3<	3>
				Min	20.4	81.6	77.2	87.9		73.8	1>		
				Max	20.7	83.8	81.2	89.4		77			
			1	*Mean*	*6.1*	*90.2*	*73.8*		*42.6*		1>		1>
LEAF3 early	30-33	15	4	*Mean*	*10.3*	*82.9*	*75.3*				2=		
				Min	5.6	75.2	68.1				2>		
				Max	12.9	91.1	78.6						
			3	*Mean*	*11.9*	*80.1*	*74.3*	*81*		*70.5*	2=	1=	
				Min	11.3	75.2	68.1	66.7		65.5	1>	2<	
				Max	12.9	84.5	78.3	88.6		76.7			
			1	*Mean*	*5.6*	*91.1*	*78.6*		*42.9*		1>		1>
LEAF3 late	41	23	1	*Mean*	*12.8*	*85.2*	*69.5*		*35.9*		1>		1>

Leaf level assm. timing	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**CA2445 (PROLINE) PTZ 250 g/L EC**	**BUMPER 25 EC 250 g/L EC**	**Nativo Pro 325 g/L SC**	**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**0.6 l/ha 195 g ai/ha**	**CA2702**	**CA2445**	**Bumper Or Nativo Pro**
Efficacy after 1 application													
LEAF3 early	20.0	20	1	*Mean*	*8.8*	*72.7*	*55.7*	*94.3*			1>	1<	

<u>After two applications of CA3642 applied at 1.0 L/ha</u>
At an early assessment date (15 DA-B) 78 % efficacy was observed on leaf level 1 across 2 trials, 92 % efficacy was observed on leaf level 2 across 5 trials and 83 % efficacy was observed on leaf level 3 across 4 trials. The performance of CA3642 was statistically comparable with that of CA2445 in 4 out of 10 data sets and significantly less effective in 6 data sets. The performance of CA3642 was statistically comparable with that of CA2702 in 5 out of 11 data sets and significantly more effective in 6 data sets. CA3642 was significantly more effective than NATIVO PRO in 5 out of 6 data sets where applied and statistically comparable in 1 data set. CA3642 was significantly more effective than BUMPER in 1 data set.

At later assessment dates (22-23 DA-B), mean efficacy of 86 % was observed on leaf level 1 across 3 trials, 85 % efficacy was observed on leaf level 2 across 4 trials and 85 % efficacy was observed on leaf level 3 in 1 trial. The performance of CA3642 was significantly less effective than that of CA2445 where applied in 6 data sets. The performance of CA3642 was statistically comparable with that of CA2702 in 2 out of 8 data sets and significantly more effective in 6 data sets. CA3642 was significantly more effective than BUMPER in 2 data sets where applied, and NATIVO PRO in 6 data sets where applied.

<u>After one application of CA3642 applied at 1.0 L/ha</u>
At an early assessment date 20 DA-A in 1 trial, 73 % efficacy was observed on leaf level 3. The performance of CA3642 was significantly less effective than CA2445 and significantly more effective than CA2702.

Overall, CA3642 applied twice at 1.0 L/ha achieved good control (78-92% control of efficacy) on the upper leaf levels 1, 2 and 3 at all assessment timings.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (20 data sets).

The performance of CA3642 against RHYNSE was comparable to, or more effective than that derived from applications of the reference products in the majority of data sets.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control RHYNSE on spring barley in the South-East EPPO zone.

Comments of zRMS:

6 efficacy trials were carried out to control of *Rhynchosporium secalis* in spring barley in the South-East EPPO climatic zone. CA3642 at 1 l/ha achieved good effectiveness after 2 applications. The mean efficacy was 77,9% on L1, 92,4% on L2 and 82,9% on L3 in the early assessments. Also results of >85% has been noted in the late observations. Moderate control (72,7%) was observed after 1 application. Slight differences between test and reference products were visible. CA2445 achieved similar or superior effectiveness compared to CA3642 whilst CA2702 was inferior in the most trials.
Based on the above summary, CA3642 at 1 l/ha in 1-2 applications is effective for control of RHYNSE in spring barley in the SE zone.

Summary of data on RHYNSE in HORVS

Data is presented from a total of 15 trials to evaluate the efficacy of CA3642 applied at the proposed rate of 1.0 L/ha to control RHYNSE in spring barley. In all assessments across all EPPO zones, applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made.

The efficacy obtained from applications of CA3642 was, in the majority of cases, comparable to, or more effective than that observed from applications of the reference products across the EPPO zones especially compared to azoxystrobin alone.

The mean efficacy in the Maritime EPPO zone on leaf levels 1 to 3 at early assessments ranged from 69-78 % for two applications of CA3642 at 1.0 L/ha. At later timings, efficacy dropped slightly to 64-72 % on leaf levels 1-3. In these trials disease severity was relatively high, ranging from 4.6 % to 71 %.

The mean efficacy in the North-East EPPO zone on leaf levels 1 to 3 at early assessments ranged from 75-80 % for two applications of CA3642 at 1.0 L/ha. Across both North-East and neighbouring Maritime zone trials, efficacy was 78-79 % following two applications of CA3642 at 1.0 L/ha and disease severity was between 4.6 % and 14 % in these trials.

The mean efficacy in the South-East EPPO zone on leaf levels 1 to 3 at early and late assessments ranged from 78-92 % for two applications of CA3642 at 1.0 L/ha. In these trials disease severity ranged from 5 % to 21 %.

The data presented therefore supports the claim for registration of CA3642 applied at 1.0 L/ha for control of RHYNSE in spring barley.

Spring barley (HORVS) – Green leaf area

A total of 73 trials carried out between 2019 and 2021 have included assessments to evaluate the efficacy of CA3642 in terms of green leaf area in spring barley in the Maritime (20 trials), North-East (31 trials) and South-East (22 trials) EPPO zones.

Trials from the Maritime EPPO zone were carried out in the Czech Republic (1 trial), Denmark (1 trial), Great Britain (9 trials) and Germany (9 trials).
Trials from the North-East EPPO zone were carried out in Poland (22 trials), Lithuania (3 trials) and Latvia (6 trials).
Trials from the South-East EPPO zone were carried out in Hungary (6 trials), Romania (9 trials) and Slovakia (7 trials).

In all trials the test product CA3642 was applied 2 times at dose rates of 1.0 L/ha and compared to several commercially used reference standards applied at the registered dose rates at the time of application.

Overall, CA3642 applied at 1.0 L/ha showed comparable or significantly better retention of green leaf area compared to the untreated control and to the reference standard in the majority of trials where assessed.

HORVS – Green leaf area – Maritime EPPO zone

In a total of 20 trials from the Maritime EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha was assessed in terms of green leaf area. Trials from the Maritime EPPO zone were carried out in the Czech Republic (1 trial), Denmark (1 trial), Great Britain (9 trials) and Germany (9 trials) between 2019 and 2021.

Table 3.2-403: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS assessed as green leaf area – valid assessments – Maritime EPPO zone

Part Rated	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	Summarized CA2702 0.8 l/ha or 0.6 l/ha SC	Summarized PTZ Products EC	CA3642 at 1.0 L/ha compared to	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**200 g ai/ha or 150 g ai/ha**	**200 g ai/ha and 198 g PTZ /ha**	**Summarized CA2702 0.8 l/ha or 0.6 l/ha**	**Summarized PTZ Products EC**
PLANT early	34-35	17-20	3	Mean	*36.7*	**163.2**	156.3	163.3	3=	3=
				Min	*10.0*	**104.0**	104.0	120.0		
				Max	*62.5*	**235.5**	220.0	220.0		
PLANT late	36-50		10	Mean	*53.3*	**236.3**	206.4		6=	
				Min	*2.5*	**100.0**	100.0		3>	
				Max	*100.0*	**852.0**	800.0		1<	
			9	Mean	53.6	**245.8**		264.8		7=
				Min	2.5	**100**		100		2<
				Max	100	**852**		832		
PLANT very late	42-65	34-42	6	Mean	*33.1*	**161.8**	149.0	173.6	3=	5=
				Min	*4.5*	**106.7**	113.3	113.3	1<	1<
				Max	*58.8*	**189.4**	173.3	277.8	2>	
LEAF1 late	52-56	29-40	4	Mean	*55.7*	**159.4**	135.6	163.5	3=	3=
				Min	*28.8*	**122.7**	119.2	121.0	1>	1<
				Max	*71.3*	**243.1**	160.8	260.4		
LEAF2 late	50-56	29-33	3	Mean	*21.3*	**433.5**	245.2	446.6	1=	3=
				Min	*7.5*	**145.8**	117.3	151.2	2>	
				Max	*46.3*	**688.0**	475.0	738.0		
LEAF3 late	52	33	1	Mean	*3.8*	**986.8**	855.3	1184.2	=	=

Efficacy in terms of green leaf area (GLA) was assessed on the whole plant at 17-20 DA-B (3 trials), at 23-30 DA-B (10 trials) and also at 34-42 DA-B (6 trials). Assessments on separate leaves were also conducted (leaf 1 – 4 trials; leaf 2 – 3 trials and leaf 3 – 1 trial) at 29-40 DA-B.

After two applications of CA3642 at 1.0 L/ha, the mean GLA had increased by 63 % compared to the untreated control at the early timings, had increased by 136 % at the later timings and by 62% at the very late timings. The increase of GLA induced by CA3642 was statistically significant compared to the untreated control in 16 of the 19 data sets.

Assessments specifically on leaf 1 demonstrated a GLA increase of 59 % compared to the untreated control across 4 trials. At leaf levels 2 and 3 there was an increase of 334 % (3 trials) or 887 % (1 trial), respectively.

Across all data sets, two applications of CA3642 at 1.0 L/ha resulted in statistically significant higher GLA area compared to the application of CA2702 in 8 data sets, statistically comparable GLA in 17 data sets and significantly lower GLA in 2 data sets.
Across data sets where a comparison is possible, two applications of CA3642 at 1.0 L/ha resulted in statistically comparable GLA area compared to the application of prothioconazole products where applied in 22 data sets, and significantly lower GLA in 4 data sets.

Therefore, it is concluded that 2 applications of CA3642 at 1.0 L/ha will have a positive effect on the green leaf area in spring barley affected by a range of pathogens in the Maritime EPPO zone.

Comments of zRMS:

The mean green leaf area of whole plant increased by 136,3% after 2 applications of CA3642 at 1 l/ha, in late assessment. Significant increase was visible in case of leaves with results of 59,4% on L1, 333,5% on L2 and 886,8% on L3. No statistical differences between test and reference products can be observed in the most trials in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted.

HORVS – Green leaf area – North-East EPPO zone

In 31 trials from the North-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha was assessed in terms of green leaf area. Trials from the North-East EPPO zone were carried out in Poland (22 trials), Lithuania (3 trials) and Latvia (6 trials) between 2019 and 2021.

Table 3.2-404: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS assessed as green leaf area – valid assessments – North-East EPPO zone

Part Rated	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**Summarized CA2702 0.8 l/ha or 0.6 l/ha SC**	**CA2445 PTZ 250 g/L EC**	**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**200 g ai/ha or 150 g ai/ha**	**0.8 L/ha 200 g PTZ/ha**	**Summarized CA2702 0.8 l/ha or 0.6 l/ha**	**Summarized CA2445 250 g/L**
PLANT	44-55	21-36	30	Mean	*29.7*	**159.0**	157.2		28=	
				Min	*1.8*	**87.5**	90.9		2>	
				Max	*73.8*	**231.3**	322.2			
			19	Mean	*34.6*	**155.2**	148.5	145.9	17=	15=
				Min	*13.8*	**87.5**	95.8	100.0	2>	2>
				Max	*73.8*	**231.3**	250.0	195.6		2<
PLOT	54	40	1	Mean	*5.5*	**205.5**	123.6	154.5	=	=

Efficacy in terms of green leaf area (GLA) was assessed on the whole plant at 21-36 DA-B in 30 trials and across the whole plot at 40 DA-B in 1 trial.
After two applications of CA3642 at 1.0 L/ha, the mean GLA had increased by 59 % compared to the untreated control across 30 trials on the plant, and had increased by 106 % on the whole plot in 1 trial. The increase of GLA induced by CA3642 was statistically significant compared to the untreated control in 19 of the 31 data sets.

Across all data sets, two applications of CA3642 at 1.0 L/ha resulted in statistically significant higher GLA area compared to the application of CA2702 in two trials and statistically comparable GLA results in 28 trials.
Across data sets where a comparison is possible, two applications of CA3642 at 1.0 L/ha resulted in statistically comparable GLA area compared to the application of CA2445 where applied in 15 trials, a significantly higher GLA in 2 trials and significantly lower GLA in 2 trials.

Therefore, it is concluded that 2 applications of CA3642 at 1.0 L/ha will have a positive effect on the green leaf area in spring barley affected by a range of pathogens in the North-East EPPO zone.

Comments of zRMS: The mean green leaf area of whole plant increased by 59% after 2 applications of CA3642 at 1 l/ha. In case of plot, an increase was 105,5%. No statistical differences between test and reference products can be observed in the most trials in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted.

HORVS – Green leaf area – South-East EPPO zone

In 22 trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha was assessed in terms of green leaf area. Trials from the South-East EPPO zone were carried out in Hungary (6 trials), Romania (9 trials) and Slovakia (7 trials) between 2019 and 2021.

Table 3.2-405: Summary - Efficacy of CA3642 (1.0 L/ha) in HORVS assessed as green leaf area – valid assessments – South-East EPPO zone

Part Rated	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	CA3642 at 1.0 L/ha compared to	
				Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**CA2702 0.8 L/ha**	**CA2445 0.8 L/ha**
PLANT	34-51	15-29	22	Mean Min Max	46.8 10.0 70.0	**163.7** **100.0** **325.2**	148.0 100.0 294.0		16= 6>	
			15	Mean Min Max	*42.8* *10.0* *70.0*	**171.8** **100.0** **325.2**	151.4 100.0 294.0	204.5 100.0 500.0	10= 5>	10= 5<

Efficacy in terms of green leaf area (GLA) was assessed on the whole plant at 15-29 DA-B in a total of 22 trials.
After two applications of CA3642 at 1.0 L/ha, the mean GLA had increased by 64 % compared to the untreated control across 22 trials on the plant.

Across all data sets, two applications of CA3642 at 1.0 L/ha resulted in statistically significant higher GLA area compared to the application of CA2702 in six trials and statistically comparable GLA results in 16 trials.
Across data sets where a comparison is possible, two applications of CA3642 at 1.0 L/ha resulted in statistically comparable GLA area compared to the application of prothioconazole products where applied in 10 trials, and a significantly lower GLA in 5 trials.

Therefore, it is concluded that 2 applications of CA3642 at 1.0 L/ha will have a positive effect on the green leaf area in spring barley affected by a range of pathogens in the South-East EPPO zone.

Comments of zRMS:

The mean green leaf area of whole plant increased by 225,2% after 2 applications of CA3642 at 1 l/ha. No statistical differences between test and reference products can be observed in the most trials in the South-East EPPO climatic zone. Positive impact on green leaf area has been noted.

Oilseed rape (BRSNW)

Winter oilseed rape (BRSNW) – Black spot (ALTEBA – *Alternaria brassicae*)

A total of 25 field trials were established between 2019 and 2021 in order to evaluate the efficacy of CA3642 for the control of ALTEBA in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in the Czech Republic (1 trial), Germany (5 trials) and Great Britain (1 trial).
Trials from the North-East EPPO zone were carried out in Latvia (3 trials) or Poland (7 trials).
Trials from the South-East EPPO zone were carried out in Hungary (4 trials), Romania (2 trials) or Slovakia (2 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rates of 1.0 and 1.2 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.
Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

Overall, CA3642 applied at 1.0-1.2 L/ha consistently and significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products in the majority of data sets.

BRSNW – ALTEBA – Maritime EPPO zone

A total of 7 trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in the Czech Republic (1 trial), Germany (5 trials) and Great Britain (1 trial) between 2019 and 2021.

In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 50-55 and the second application was done 19-41 days later, at BBCH 65.

Table 3.2-406: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against ALTEBA – valid assessments – Maritime EPPO zone

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[a]**	**CA3642 (150 g/L AZX + 150 g/L PTC) 300 g/L SC**		**CA2702 250 g/L SC**	**Summarized PTZ products 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**		**CA3642 at 1.0 L/ha compared to**	
				Rate		**1.2 l/ha 360 g ai/ha**	**1.0 l/ha 300 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**CA2702**	**Summarized PTZ products**	**CA2702**	**Summarized PTZ products**
Efficacy after 2 applications													
LEAF	95-102	72-76	3	*Mean*	*16.8*	*76.2*	*76.4*	*76.1*	*76.0*	5 data sets =	5 data sets =	5 data sets =	5 data sets =
				Min	6.6	28.7	29.3	28.2	27.9				
				Max	33.7	100.0	100.0	100.0	100.0				
POD	94-102	55-76	4	*Mean*	*36.1*	*90.9*	*89.8*	*81.9*	*88.9*	2=	3=	2=	3=
				Min	15.4	76.0	75.0	49.5	75.2	2>	1>	2>	1>
				Max	66.1	100.0	100.0	100.0	100.0				
STEM	109-112	73	2	*Mean*	*18.1*	*83.4*	*78.1*	*72.5*	*79.2*	1=	2=	1=	2=
				Min	17.4	78.0	77.3	55.9	77.1	1>		1>	
				Max	18.8	88.9	78.8	89.2	81.2				

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At 55-76 DA-B on the pods, 91 % and 90 % efficacy was observed for 1.2 L/ha and 1.0 L/ha CA3642, respectively, across 4 trials. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 in 2 trials and significantly more effective in 2 trials. Compared to the prothioconazole reference products, CA3642 at both rates was statistically comparable in 3 trials and significantly more effective in 1 trial.

At 72-76 DA-B, 76 % efficacy was observed for both dose rates of 1.2 L/ha and 1.0 L/ha on the leaves across 3 trials. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 and to the prothioconazole products CA2445 and Pecari 250 EC in all 5 data sets from all 3 trials.

At 73 DA-B on the stems, 83 % and 78 % efficacy was observed for the 1.2 L/ha and 1.0 L/ha dose rates, respectively, across 2 trials. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 in 1 trial and significantly more effective in 1 trial. Both rates of CA3642 were statistically comparable to CA2445 in both trials.

Overall, CA3642 applied twice at ~~1.2~~ 1.0-1.2 L/ha achieved acceptable control on the leaves and good control on the pods and stems.

CA3642 significantly reduced disease severity compared to untreated plots in 9 out of 10 data sets where statistics are available.

The efficacy against ALTEBA was comparable to, or more effective than that derived from applications of the reference products in all data sets.

Comments of zRMS:

7 efficacy trials with 2 spring applications were conducted to control of *Alternaria brassicae* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1,0 and 1,2 l/ha achieved medium to high effectiveness after 2 applications. The mean efficacy was 76% for leaf, 90% for pod and 78-83% for stem. The reference product presented similar or slight inferior effect compared to the test product. No results after 1 application were available.
Because results after 1 application have not been submitted, cMSs are kindly asked to consider this use on national level.

BRSNW – ALTEBA – North-East EPPO zone

A total of 10 trials from the North-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in Latvia (3 trials) or Poland (7 trials) between 2019 and 2021.
In trials where both applications were conducted in the spring, the first application took place at crop stage BBCH 33-55 and the second application was done 22-46 days later, at BBCH 65-69.
In 1 trial where the first application was conducted in the autumn and the second application was conducted in the spring, the first application took place at crop stage BBCH 15 and the second application was done 206 days later, at BBCH 69.

Table 3.2-407: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against ERYSGH – valid assessments – North-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	CA-RAMBA 60 SL 60 g/L SL	PRO-SARO 250 g/L EC	ORI-US EX-TRA 250 g/L EW	PLEXEO 60 EC 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 60 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 60 g ai/ha	CA2702	CA2445	Oth-ers	CA2702	CA2445	Oth-ers
Efficacy after 1 application																			
LEAF	22	-	1	*Mean*	*10.7*	***95.3***	***96.3***	*94.4*		*95.3*				1=		1=	1=		1=
Efficacy after 2 applications																			
LEAF	43-44	21	2	*Mean* Min Max	*11.1* 7.5 14.7	***95*** **93.3** **96.6**	***95*** **94.7** **95.2**	*92.3* 89.3 95.2						2=			2=		
			1	*Mean*	*7.5*	***93.3***	***94.7***	*89.3*					*94.7*	1=		1=	1=		1=
			1	*Mean*	*14.7*	***96.6***	***95.2***	*95.2*		*95.2*				1=		1=	1=		1=
LEAF	58-81	36-50	4	*Mean* Min Max	*9.7* 5.4 20.3	***84.4*** **50** **97**	***81.1*** **50** **95.1**	*83* 57.4 95.6						4=			4=		
			2	*Mean* Min Max	*6.5* 5.4 7.6	***73*** **50** **96.1**	***71.1*** **50** **92.1**	*74.8* 57.4 92.1	*65* 35.2 94.7					2=	2=		2=	2=	

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	CA-RAMBA 60 SL 60 g/L SL	PRO-SARO 250 g/L EC	ORI-US EX-TRA 250 g/L EW	PLEXEO 60 EC 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 60 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 60 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
			1	*Mean*	*5.4*	***94.4***	***87***	*87*					*90.7*	1=		1=	1=		1=
			3	*Mean*	*11.1*	***81***	***79.1***	*81.7*		*78.9*				3=		3=	3=		3=
				Min	5.4	**50**	**50**	57.4		44.4									
				Max	20.3	**97**	**95.1**	95.6		96.1									
POD	58-256	36-54	4	*Mean*	*9.7*	***90.3***	***84.4***	*83.6*						4=			4=		
				Min	5.2	**80.8**	**75**	61.5											
				Max	21.3	**97.7**	**94.8**	94.8											
POD	58-84	36-54	3***	*Mean*	*10.7*	***91***	***87.6***	*82.5*						3=			3=		
				Min	5.2	**80.8**	**75**	61.5											
				Max	21.3	**97.7**	**94.8**	94.8											
			2	*Mean*	*6.2*	***91.4***	***83.9***	*88.9*	*88.6*					2=	2=		2=	2=	
				Min	5.6	**88.2**	**75**	86.8	87.5										
				Max	6.8	**94.6**	**92.9**	91.1	89.7										
			3	*Mean*	*10.7*	***91***	***87.6***	*82.5*		*75.8*				3=		2=	3=		3=
				Min	5.2	**80.8**	**75**	61.5		44.2						1>			

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**CA-RAMBA 60 SL 60 g/L SL**	**PRO-SARO 250 g/L EC**	**ORIUS EXTRA 250 g/L EW**	**PLEXEO 60 EC 60 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 60 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 60 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
				Max	21.3	**97.7**	**94.8**	94.8		95.8									
POD	256	50	1**	*Mean*	*6.8*	***88.2***	***75***	*86.8*	*89.7*			*95.6*		1=	1=	1=	1=	1=	1=
STEM	81-256	48-56	5	*Mean*	*7.1*	***92.4***	***90.1***	*91.1*	*84.5*					5=	5=		5=	5=	
				Min	4.2	**88**	**81.7**	86	78.7										
				Max	10.8	**97.2**	**97.2**	95.4	94.4										
STEM	81-85	48-56	4***	*Mean*	*7.7*	***93.5***	***92.1***	*92.4*	*84.2*					4=	4=		4=	4=	
				Min	4.2	**89.5**	**81.7**	88.4	78.7										
				Max	10.8	**97.2**	**97.2**	95.4	94.4										
			3	*Mean*	*7.9*	***93.2***	***95.5***	*92.2*	*80.8*		*84.8*			3=	3=	3=	3=	3=	3=
				Min	4.2	**89.5**	**94.2**	88.4	78.7		72.1								
				Max	10.8	**97.2**	**97.2**	95.4	83.3		95.2								
STEM	256	50	1**	*Mean*	*5*	***88***	***82***	*86*	*86*			*90*		1=	1=	1=	1=	1=	1=

**Trial where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding trial(s) where the first application was conducted in autumn and the second application was conducted in spring

After one spring application of CA3642 at 1.0-1.2 L/ha

At 21 DA-A in 1 trial conducted in the North-East EPPO zone, 96 % and 95 % efficacy was observed on the leaves for the 1.0 L and 1.2 L/ha rates, respectively. The efficacy of CA3642 at both rates was statistically comparable to reference product Caramba 60 SL and CA2702.

After two spring applications of CA3642 applied at 1.0-1.2 L/ha

At an early timing 21 DA-B across 2 trials, 95 % efficacy was observed on the leaves for both the 1.0 L and 1.2 L rates of CA3642. The efficacy of CA3642 applied at both rates was statistically comparable to both Caramba 60 SL in 1 trial and Plexeo 60 EC in the other trial.

At later assessment dates (36-50 DA-B) across 4 trials, efficacy of 81 % and 84 % was observed on the leaves after the application of 1.0 L or 1.2 L/ha CA3642, respectively. In these assessments efficacy from CA3642 was statistically comparable to CA2702 in all 4 trials, CA2445 where applied in 2 trials, Caramba 60 SL where applied in 3 trials and Plexeo 60 EC where applied in 1 trial.

On the pods at 36-54 DA-B, efficacy of 88 % and 91 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, across 3 trials. In these assessments efficacy from CA3642 was statistically comparable to CA2702 in all 3 trials and CA2445 where applied in 2 trials. Compared to Caramba 60 SL, the 1.0 L rate of CA3642 was statistically comparable in 3 trials, and at the 1.2 L rate CA3642 was comparable in 2 trials and significantly more effective in 1 trial.

On the stems at 48-56 DA-B, efficacy of 92 % and 94 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, across 4 trials. In these assessments efficacy from both rates of CA3642 was statistically comparable to CA2702 and CA2445 in all 4 trials. Compared to Prosaro, both rates of CA3642 were statistically comparable where applied in 3 trials.

After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring

On the pods at 50 DA-B in 1 trial, efficacy of 75 % and 88 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively. Performance of CA3642 was statistically comparable to CA2702, CA2445 and Orius Extra.

On the stems at 50 DA-B in 1 trial, efficacy of 82 % and 88 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively. Performance of CA3642 was statistically comparable to CA2702, CA2445 and Orius Extra.

At all assessments, with either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots (16 data sets).

The efficacy against ALTEBA was either comparable to, or significantly more effective than that derived from applications of the reference products in all data sets according to statistical analysis.

Comments of zRMS:

10 efficacy trials were conducted to control of *Alternaria brassicae* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good results after spring applications and autumn and spring applications. The mean efficacy was >95% after 1 spring application. The test product presented effectiveness of 82-88% for stem and 75-88,2% for pod in case of autumn and spring applications. Also high results have been noted after two spring applications with the mean efficacy of 92-93% for stem and 88-91% for pod. In the early assessment on leaves, CA3642 at claimed doses had control on level of 95% and 81-84% in the later assessment. No significant differences between test and reference products were observed.
Based on the above summary, CA3642 at 1-1,2 l/ha in 1 spring application is effective for control of ALTEBA in winter oilseed rape in the NE zone. The dose rate of 1,2 l/ha may be recommended at higher disease pressure.

BRSNW – ALTEBA – South-East EPPO zone

A total of 8 trials from the South-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against ALTEBA in winter oilseed rape. The trials were carried out in Hungary (4 trials), Romania (2 trials) or Slovakia (2 trials) between 2019 and 2021.
In trials where both applications were conducted in the spring, the first application took place at crop stage BBCH 35-55 and the second application was done 21-35 days later, at BBCH 65-67.
In 2 trials where the first application was conducted in the autumn and the second application was conducted in the spring, the first application took place at crop stage BBCH 16-17 and the second application was done 185-197 days later, at BBCH 65.

Table 3.2-408: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against ALTEBA – valid assessments – South-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTD[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 1 application																			
LEAF	21-35	-	2	*Mean*	*8.5*	***99***	***99.3***	*99.5*	*99.5*					2=	2=		2=	2=	
				Min	6	**98**	**98.6**	98.9	99.1										
				Max	11.1	**100**	**100**	100	100										
Efficacy after 2 applications																			
LEAF	35-56	14-28	3	*Mean*	*11.1*	***89.6***	***81.7***	*78.4*						2=			2=		
				Min	9	**82.1**	**75.8**	68.4						1>			1>		
				Max	14.8	**95.5**	**90.5**	93.5											
			2	*Mean*	*12.2*	***88.8***	***83.2***	*81*	*95.9*					1=	1=		1=	1=	
				Min	9.5	**82.1**	**75.8**	68.4	95.8					1>	1<		1>	1<	
				Max	14.8	**95.5**	**90.5**	93.5	95.9										
			1	*Mean*	*9*	***91.1***	***78.9***	*73.3*			*67.8*			1=		1=	1=		1=
LEAF	60-77	39-56	4	*Mean*	*14.9*	***91.1***	***85.9***	*80.3*						2=			2=		
				Min	10.4	**86.8**	**74.2**	71						2>			2>		
				Max	21.9	**96.6**	**94.1**	91.5											
			3	*Mean*	*14.7*	***92.2***	***89.8***	*83.4*	*92.1*					1=	3=		1=	3=	
				Min	10.4	**86.8**	**86.4**	78.8	87.9					2>			2>		
				Max	21.9	**96.6**	**94.1**	91.5	95										
			1	*Mean*	*15.5*	***87.7***	***74.2***	*71*			*60.6*			1=		1>	1=		1=

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTD[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**ORIUS 250 g/L SE**	**TIL-MOR 240 g/L EC**	**Prosaro 250 EC 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**0.75 l/ha 187 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
				n															
			1	*Mean*	*11.9*	***96.6***	***94.1***	*79.8*	*95*				*95.8*	1>	1=	1=	1>	1=	1=

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTD[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 2 applications																			
POD	60-264	37-79	8	*Mean*	*15.7*	***86.2***	***82.3***	*72.9*						5=			5=		
				Min	5.8	**57.7**	**65.4**	45.2						3>			2>		
				Max	32	**100**	**100**	99									1<		
POD	60-81	37-56	6***	*Mean*	*14.2*	***90.6***	***87.7***	*75.8*						4=			4=		
				Min	5.8	**76.3**	**70.6**	53.7						2>			2>		
				Max	32	**100**	**100**	99											
			3***	*Mean*	*8.9*	***97.7***	***94.7***	*83.1*	*94.1*					2=	3=		2=	3=	
				Min	5.8	**93.9**	**85.0**	53.7	82.3					1>			1>		
				Max	14.7	**100.0**	**100.0**	99.0	100.0										
			2***	*Mean*	*25.9*	***79.3***	***81.3***	*71.1*		*85.7*				1=		2=	1=		1=
				Min	19.8	**76.3**	**70.6**	68.7		73.2				1>			1>		1>
				Max	32	**82.3**	**91.9**	73.4		98.1									
			1***	*Mean*	*6.3*	***92.1***	***79.4***	*63.5*			*68.3*			1>		1=	1=		1=
			1***	*Mean*	*14.7*	***93.9***	***85***	*53.7*	*82.3*				*91.8*	1>	1=	1=	1>	1=	1=
POD	251-264	54-79	2**	*Mean*	*20.2*	***73***	***66***	*64.3*	*47.3*			*83.3*		2=	2=	2=	1=	1=	1=
				Min	10.4	**57.7**	**65.4**	45.2	9.6			79					1<	1<	1<
				Max	30	**88.3**	**66.7**	83.3	85			87.5							
Efficacy after 2 applications																			

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTD[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**ORIUS 250 g/L SE**	**TIL-MOR 240 g/L EC**	**Prosaro 250 EC 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**0.75 l/ha 187 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
STEM	56	21	1	*Mean*	*7.2*	***94.1***	***90.8***	*96.4*	*96.6*					1=	1=		1=	1=	
STEM	60-77	39-56	3	*Mean*	*7.4*	***93.7***	***89.4***	*74.8*	*87.9*					1=	2=		1=	2=	
				Min	4.9	**89.7**	**83.2**	60	78.5					2>	1>		2>	1>	
				Max	10.7	**96.9**	**93.8**	93.3	94.9										
			1	*Mean*	*6.5*	***96.9***	***93.8***	*60*	*78.5*				*96.9*	1>	1>	1=	1>	1>	1=

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring

<u>After one spring application of CA3642 at 1.0-1.2 L/ha</u>
At early timings (21-35 DA-A) across 2 trials conducted in the South-East EPPO zone, 99 % efficacy was observed on the leaves for both the 1.0 L and 1.2 L/ha rates. The efficacy of CA3642 at both rates was statistically comparable to CA702 and CA2445 in both trials.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At early timings (14-28 DA-B) across 3 trials, 82 % and 90 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 2 of the trials and significantly more effective in 1 trial. Where applied in 2 of the 3 trials, CA2445 was comparable to both rates of CA3642 in 1 trial and less effective in 1 trial. Both rates of CA3642 were statistically comparable to Orius in 1 trial.

At later assessment dates (39-56 DA-B) across 4 trials, efficacy of 86 % and 91 % was observed on the leaves after the application of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 2 of the trials and significantly more effective in 2 trials. Where applied in 3 of the 4 trials, CA2445 was comparable to both rates of CA3642. The higher rate of CA3642 was significantly more effective than Orius in 1 trial while the lower 1.0 L/ha rate was comparable to CA3642. Both rates of CA3642 were statistically comparable to Prosaro where applied in 1 trial.

On the pods at 37-56 DA-B, efficacy of 88 % and 91 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, across 6 trials. In these assessments efficacy from both rates of CA3642 was statistically comparable to CA2702 in 4 trials and significantly more effective in 2 trials. Both rates of CA3642 were statistically comparable to CA2445 where applied in 3 trials, and to Orius where applied in 1 trial, and to Prosaro where applied in 1 trial.

At an early timing (21 DA-B) on the stems, efficacy of 91 % and 94 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, in 1 trial, which was statistically comparable to the efficacy of CA2702 and CA2445.
At later timings on the stems at 39-56 DA-B, efficacy of 89 % and 94 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, across 3 trials. In these assessments efficacy from both rates of CA3642 was statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials. Compared to CA2445, both rates of CA3642 were statistically comparable in 2 trials and significantly more effective in 1 trial. Where applied in 1 trial, Prosaro gave statistically comparable efficacy compared to both rates of CA3642.

<u>After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring</u>
On the pods at 54-79 DA-B, efficacy of 66 % and 73 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, across 2 trials. Performance of CA3642 at 1.2 L/ha was statistically comparable to CA2702, CA2445 and Tilmor in both trials. CA3642 at the lower rate of 1.0 L/ha was statistically comparable to CA2702, CA2445 and Tilmor in 1 trial and significantly less effective than all three reference products in the other trial.

Following either 1 or 2 applications, CA3642 significantly reduced disease severity compared to untreated plots in 20 of the 21 data sets.

The efficacy against ALTEBA was either comparable to, or significantly more effective than that derived from applications of the reference products in the majority of data sets according to statistical analysis.

Comments of zRMS:

8 efficacy trials were conducted to control of *Alternaria brassicae* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved high effectiveness either in two spring applications and autumn

and spring applications. The mean efficacy was 99% after 1 spring application. After two spring applications, the test product at claimed dose rates presented results of 88-91% for pods, 91-94% and 89-94% for stems, in early and later assessments respectively. Also good effectiveness was visible in assessments on leaves with the mean efficacy of 82-90% for the early observation and 86-91% for the later observation. Significant inferior results were observed after autumn and spring applications with the moderate control of 66% at 1 l/ha and 73% at 1,2 l/ha. The reference products had similar or slight inferior effectiveness compared to the test product.
Based on the above summary, CA3642 at 1-1,2 l/ha in 1 spring application is effective for control of ALTEBA in winter oilseed rape in the SE zone. The dose rate of 1,2 l/ha may be recommended at higher disease pressure.

Summary of data on ALTEBA in BRSNW

Data is presented from a total of 25 trials to evaluate the efficacy of CA3642 applied at the proposed rates of 1.0-1.2 L/ha to control ALTEBA in winter oilseed rape. In 45 of 46 trial assessments across all EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made and regardless of application timing.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones and the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

<u>One spring application</u>
No data were generated in the Maritime EPPO zone.

In the North-East EPPO zone, the mean efficacy of one spring application of CA3642 was 95-96 % on the leaves at 1.0 L and 1.2 L/ha. Disease severity was 11 %.

In the South-East EPPO zone, the mean efficacy of one spring application of CA3642 was 99 % on the leaves at both 1.0 L and 1.2 L/ha. Disease severity ranged from 6-11 %.

<u>Two spring applications</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 76 % on the leaves at both 1.0 L and 1.2 L/ha, 90-91% on the pods and 78-83 % on the stems. In these trials disease severity ranged from 6 % to 66 %.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 95 % on the leaves at both 1.0 L and 1.2 L/ha at early timings, decreasing to 81-84 % at later timings. On the pods, two spring applications provided 88-91 % efficacy and 92-94% efficacy on the stems. After one spring application there was 95-96% efficacy on the leaves in 1 trial. In these trials disease severity ranged from 4.2% to 21 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 88-95 % on the leaves at early timings, remaining good at 86-91 % at later timings. On the pods, two spring applications provided 88-91 % efficacy on the pods and 89-94 % efficacy at later timings on the stems. After one spring application there was 99% efficacy for both the 1.0 L and 1.2 L/ha rates on the leaves. In these trials disease severity ranged from 4.9 % to 32 %.

<u>Two applications, one in autumn and one in spring</u>
No data were generated in the Maritime EPPO zone.

In the North-East EPPO zone, the mean efficacy of split-season applications of CA3642 was 75-88 % on the pods and 82-88 % efficacy on the stems. Disease severity was 5-7 %.

In the South-East EPPO zone, the mean efficacy of split-season applications of CA3642 was 66-73 %

on the pods at a disease severity of 10-30 %.

Winter oilseed rape (BRSNW) – Grey mould (BOTRCI – *Botrytis cinerea*)

A total of 9 field trials were established between 2019 and 2021 in order to evaluate the efficacy of CA3642 for the control of BOTRCI in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in Germany (1 trial) and Great Britain (2 trials).
Trials from the North-East EPPO zone were carried out in Latvia (4 trials).
Trials from the South-East EPPO zone were carried out in Romania (2 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rates of 1.0 and 1.2 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.
Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

Data are grouped by EPPO zone. To support the use in Poland, according to Poland national guidance document updated January 2020, data from Germany, Czech Republic and Slovakia can also be considered if available. Hence groupings are also made with respect to this for Poland where North-East EPPO zone data is lacking.

Overall, CA3642 applied at 1.0-1.2 L/ha consistently and significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products in the majority of data sets.

BRSNW – BOTRCI – Maritime EPPO zone

Three trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against BOTRCI in winter oilseed rape. The trials were carried out in Germany (1 trial) and Great Britain (2 trials) between 2019 and 2021.
In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 25-36 days later, at BBCH 65-69.

Table 3.2-409: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against BOTRCI – valid assessments – Maritime EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UT-C[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PECARI 250 EC 250 g/L EC	PRO-LINE 275 275 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.63 l/ha 175 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 2 applications																	
LEAF	80	44	1	*Mean*	*8.9*	***41.4***	***39.9***	*41.2*			*47.2*	1=		1=	1=		1=
POD	97	72	1	*Mean*	*9.1*	***35***	***35.4***	*37.2*	*49.6*			1=	1=		1=	1=	
STEM	93	58	1	*Mean*	*21.7*	***59.8***	***46.5***	*68.5*		*22.1*		1=		1>	1<		1>

<u>After two spring applications of CA3642 applied at 1.2-1.0 L/ha</u>
At 44 DA-B on the leaves, 40 % and 41 % efficacy was observed for 1.2 L/ha and 1.0 L/ha CA3642, respectively, in 1 trial. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 and Proline 275.

At 58 DA-B on the stems, 47 % and 60 % efficacy was observed for 1.2 L/ha and 1.0 L/ha CA3642, respectively, in 1 trial. Performance of CA3642 applied at both dose rates was significantly more effective than Pecari. The higher rate of CA3642 was statistically comparable to CA2702 while the lower rate of CA3642 was significantly less effective than CA2702.

At 72 DA-B on the pods, 35 % efficacy was observed for both the 1.2 L/ha and 1.0 L/ha rates of CA3642 in 1 trial. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 and CA2445.

Overall, CA3642 applied twice at 1.2-1.0 L/ha achieved low levels of control on the leaves, pods and stems in 3 trials although disease severity was significantly reduced compared to the untreated control in 2 of the 3 data sets

The efficacy against BOTRCI was comparable to, or more effective than that derived from applications of the reference products in the majority of data sets.

Comments of zRMS:

3 efficacy trials were conducted to control of *Botrytis cinerea* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved insufficient effectiveness after 2 spring applications. No results after 1 application were available. No significant differences between test and reference products were observed. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

BRSNW – BOTRCI – North-East EPPO zone

Four trials from the North-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against BOTRCI in winter oilseed rape. All four trials were carried out in Latvia in 2019 or 2020.
In all trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 21-30 days later, at BBCH 65-69.

Table 3.2-410: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against BOTRCI – valid assessments – North-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	PRO-SARO 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.8 l/ha 200 g ai/ha	1 l/ha 250 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 2 applications																	
PLANT	55	25	1	*Mean*	*11.1*	***84.7***	***80.2***	*56.8*	*69.4*		*64*	1=	1=	1=	1=	1=	1=
Efficacy after 2 applications																	
POD	84	54	1	*Mean*	*13.5*	***88.1***	***87.4***	*74.1*	*83*		*79.3*	1=	1=	1=	1=	1=	1=
Efficacy after 1 application																	
STEM	30	-	1	Mean	8.8	**92**	**77.3**	54.5	76.1		68.2	1=	1=	1=	1=	1=	1=
Efficacy after 2 applications																	
STEM	73-84	52-56	4	*Mean*	*20.8*	***86.5***	***84.9***	*70.8*				3=			4=		
				Min	8.4	**80.5**	**78.5**	58.3				1>					
				Max	30.4	**92.9**	**95.4**	77.3									
			3	*Mean*	*24.9*	***84.4***	***85.9***	*75*	*80.5*		*77.8*	3=	3=	3=	3=	3=	
				Min	14.9	**80.5**	**78.5**	73.1	77.9		60.4						
				Max	30.4	**88.1**	**95.4**	77.3	82.2		91.1						
			1	*Mean*	*8.4*	***92.9***	***82.1***	*58.3*		*89.3*		1>		1=	1=		1=

After one spring application of CA3642 applied at 1.0-1.2 L/ha
At 30 DA-A in 1 trial carried out in the North-East EPPO zone, 77-92 % efficacy was observed on the stems. The efficacy of CA3642 applied once at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Prosaro.

After two spring applications of CA3642 applied at 1.0-1.2 L/ha
At an early timing (25 DA-B) in 1 trial carried out in the North-East EPPO zone, 80-85 % efficacy was observed on the plant. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Prosaro.

On the pods at 54 DA-B in 1 trial, 87-88 % efficacy was observed following two spring applications of CA3642. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Prosaro.

At 52-56 DA-B, efficacy of 85-87 % was observed on the stems across 4 trials. The efficacy of the higher 1.2 L/ha rate of CA3642 was statistically comparable to CA2702 in 3 of the 4 trials and significantly more effective in the other trial. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in all 4 trials. The efficacy of CA3642 was statistically comparable to CA2445 where applied in 3 trials and to Propulse where applied in 1 trial.

Results from both North-East EPPO zone and Germany are available for later assessments (52-58 DA-B) on the stems where the achieved mean efficacy was 77-81 % across 5 trials after two spring applications of 1.0 L or 1.2 L/ha CA3642.

Overall, CA3642 applied either once or twice in the spring at 1.0-1.2 L/ha achieved acceptable to good control on the plant, pods and stems at all assessment timings.

At all assessments, with either 1 or 2 applications, CA3642 at 1.0-1.2 L/ha significantly reduced disease severity compared to untreated plots (7 data sets).

The efficacy against BOTRCI was comparable to, or significantly more effective than that derived from applications of the reference products in all data sets according to statistical analysis.

Comments of zRMS:

4 efficacy trials were conducted to control of *Botrytis cinerea* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good level of control after 1-2 spring applications. The mean efficacy was 80-85% for plant, 87-88% for pod and 85-87% for stem after 2 applications. Similar effect was visible after 1 application with results of 92% at 1,2 l/ha and moderate effectiveness for the lower dose rate. No significant differences between test and reference products were observed. Also 1 trial conducted in Germany has been included to the overall calculation as support for the Polish registration. However due to limited number of trials, this use cannot be accepted in Poland.

BRSNW – BOTRCI – South-East EPPO zone

Two trials from the South-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against BOTRCI in winter oilseed rape. Both trials were carried out in Romania in 2021.
In these two trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 50-51 and the second application was done 22 or 29 days later, at BBCH 67.

Table 3.2-411: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against BOTRCI – valid assessments – South-East zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		TILMOR 240 EC 240 g/L EC	CA3642 at 1.2 L/ha compared to	CA3642 at 1.0 L/ha compared to
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	1.0 l/ha 240 g ai/ha	Tilmor	Tilmor
Efficacy after 1 application										
LEAF	22-29	-	~~3~~ 2	*Mean* Min Max	*~~7.6~~ 7.4* 7.1 ~~8~~ 7.6	***~~49.1~~ 51.1*** ~~45~~ **48.7** **53.5**	***~~47.3~~ 47.8*** **43.4** **52.1**	*~~49.1~~ 50.5* 46.1 54.9	~~3~~ 2=	~~3~~ 2=
Efficacy after 2 applications										
LEAF	43-50	21	2	*Mean* Min Max	*10.1* 8.1 12	***48.6*** **39.2** **58**	***45.9*** **37.5** **54.3**	*46.7* 39.2 54.3	2=	2=
Efficacy after 2 applications										
POD	66	37	1	*Mean*	*8.3*	***41***	***41***	*44.6*	1=	1=

<u>After one spring application of CA3642 applied at 1.0-1.2 L/ha</u>
At 22-29 DA-A across ~~3~~ 2 trials carried out in the South-East EPPO zone, ~~47-49~~ 48-51 % efficacy was observed on the leaves after one spring application of CA3642 at 1.0-1.2 L/ha. The efficacy of CA3642 applied once at both 1.0 L and 1.2 L/ha was statistically comparable to that of Tilmor.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At an early timing (21 DA-B) across 2 trials carried out in the South-East EPPO zone, 46-49 % efficacy was observed leaves after two spring applications of CA3642 at 1.0-1.2 L/ha. The efficacy of CA3642 applied twice at both 1.0 L and 1.2 L/ha was statistically comparable to that of Tilmor.

On the pods at 37 DA-B in 1 trial, 41 % efficacy was observed following two spring applications of CA3642 at both 1.0 L and 1.2 L/ha. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to Tilmor.

Overall, CA3642 applied either once or twice in the spring at 1.0-1.2 L/ha achieved very low control on the leaves and pods at all assessment timings, although 1 or 2 applications of CA3642 at 1.0-1.2 L/ha significantly reduced disease severity compared to untreated plots in all 6 data sets.

The efficacy against BOTRCI was comparable to that derived from applications of the Tilmor reference product in all data sets according to statistical analysis.

Comments of zRMS:

2 efficacy trials were conducted to control of *Botrytis cinerea* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved insufficient effectiveness after 1-2 spring applications. No significant differences between test and reference products were observed. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Summary of data on BOTRCI in BRSNW

Data is presented from a total of 9 trials to evaluate the efficacy of CA3642 applied at the proposed rates of 1.0-1.2 L/ha to control BOTRCI in winter oilseed rape. In 15 of 16 trial assessments across all EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single spring application or two spring applications were made.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones.

<u>One spring application</u>
In the South-East EPPO zone, the mean efficacy of one spring application of CA3642 was 47-49 % on the leaves at 1.0-1.2 L at disease severity levels of 7-8 %.

<u>Two spring applications</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 46-49 % on the leaves at 1.0-1.2 L and 41% on the pods at both rates. In these trials disease severity ranged from 8 % to 12 %.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 40-41 % on the leaves at 1.0 L and 1.2 L/ha, 47-60% on the stems and 35% for both rates on the pods. In these trials disease severity ranged from 9 % to 22 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 46-49 % on the leaves at 1.0-1.2 L and 41% on the pods at both rates. In these trials disease severity ranged from 8 % to 12 %.

Two applications, one in autumn and one in spring
No data were generated.

Winter oilseed rape (BRSNW) – Powdery mildew (ERYSCR – *Erysiphe cruciferarum*)

A total of 17 field trials were established 2019 or 2020 in order to evaluate the efficacy of CA3642 for the control of ERYSCR in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in France (1 trial) and Great Britain (1 trial).
No data are available from the North-East EPPO zone.
Trials from the South-East EPPO zone were carried out in Hungary (6 trials), Romania (6 trials) and Slovakia (3 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rates of 1.0 L and 1.2 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.
Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

In the majority of data sets, CA3642 applied at 1.0-1.2 L/ha significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products.

BRSNW – ERYSCR – Maritime EPPO zone

Two trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against ERYSCR in winter oilseed rape. The trials were carried out in France (1 trial) and Great Britain (1 trial) in 2019 or 2020.
In one trial, both applications were conducted in the spring. The first application took place at crop stage BBCH 50 and the second application was done 21 days later, at BBCH 65.
In the other trial, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 19 and the second application was done 135 days later, at BBCH 67.

Table 3.2-412: Summary – Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against ERYSCR – valid assessments – Maritime zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	CA2702	CA2445	CA2702	CA2445
Efficacy after 2 applications													
LEAF	80-177	42-59	2	*Mean*	*28.4*	***50.8***	***50.2***	*26*	*47.2*	2>	2=	2>	2=
				Min	26.7	**35.3**	**34.9**	18.5	27.8				
				Max	30.1	**66.4**	**65.5**	33.5	66.7				
POD	195	60	1	*Mean*	*17*	***0***	***4.9***	*0*	*2.7*	1=	1=	1=	1=
STEM	195	60	1	*Mean*	*14*	***15.6***	***11.1***	*2.5*	*20.9*	1=	1=	1=	1=

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At 42-59 DA-B on the leaves, 51 % and 50 % efficacy was observed for 1.2 L/ha and 1.0 L/ha CA3642, respectively, across 2 trials. Performance of CA3642 applied at both dose rates was statistically comparable to CA2445 in both trials. CA3642 applied twice in the spring was significantly more effective compared to CA2702 in both trials.

At 60 DA-B in 1 trial, 0% and 5 % efficacy was observed for 1.2 L/ha and 1.0 L/ha CA3642 on the pods and 16% and 11% efficacy was observed, respectively, on the stems. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 and to the prothioconazole product CA2445 in both data sets.

Overall, CA3642 applied twice at 1.2-1.0 L/ha achieved low control on the leaves, and very low control on the pods and stems.

CA3642 significantly reduced disease severity compared to untreated plots in 2 out of the 4 data sets.

The efficacy against ERYSCR was comparable to, or more effective than that derived from applications of the reference products in all data sets.

Comments of zRMS:

2 efficacy trials were conducted to control of *Erysiphe cruciferarum* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved insufficient control after 2 spring applications. Similar effect was visible for the reference products. No results after 1 application were available. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

BRSNW – ERYSCR – North-East EPPO zone

No data are presented - ERYSCR disease did not develop in any of the trials carried out in the North-East EPPO zone.

Comments of zRMS:

No efficacy trials have been submitted for control of *Erysiphe cruciferarum* in winter oilseed rape in the North-East EPPO climatic zone. An extrapolation is not possible. This use cannot be accepted in Poland.

BRSNW – ERYSCR – South-East EPPO zone

A total of 15 trials from the South-East EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against ERYSCR in winter oilseed rape. The trials were carried out in Hungary (6 trials), Romania (6 trials) and Slovakia (3 trials) in 2019 or 2020.
In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 37-55 and the second application was done 20-38 days later, at BBCH 65-69.
In the other 4 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-16 and the second application was done 155-197 days later, at BBCH 65-66.

Table 3.2-413: Summary – Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against ERYSCR – valid assessments – South-East zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS 250 g/L SE	TILMOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 1 application																			
LEAF	21-38	-	3	*Mean*	*10.1*	***96.5***	***95.1***	*96.2*	*98.4*					3=	3=		3=	3=	
				Min	5.2	**89.5**	**85.3**	88.5	95.2										
				Max	19.4	**100**	**100**	100	100										
Efficacy after 2 applications																			
LEAF	35-59	14-28	6	*Mean*	*19.5*	***93.4***	***90.5***	*75.4*						5=			5=		
early				Min	5.1	**85.7**	**80.6**	25						1>			1>		
				Max	50	**100**	**100**	95.6											
			5	*Mean*	*22.4*	***92.5***	***90.1***	*73.6*	*95.5*					4=	5=		4=	4=	
				Min	9.8	**85.7**	**80.6**	25	91.1					1>			1>	1<	
				Max	50	**100**	**100**	95.6	100										
			1	*Mean*	*50*	***100***	***100***	*25*	*100*	*100*				1>	1=	1=	1>	1=	1=
			1	*Mean*	*5.1*	***98***	***92.2***	*84.3*			*78.4*			1=		1>	1=		1=
LEAF	51-231	30-39	9	*Mean*	*37.6*	***87.5***	***85.6***	*61.1*	*85.7*					3=	7=		3=	6=	
mid				Min	19.8	**47.6**	**52.2**	18.2	50					6>	2<		6>	3<	
				Max	95.5	**100**	**100**	92.6	100										
LEAF	51-77	30-39	6***	*Mean*	*37.2*	***93.4***	***91.1***	*77.5*	*88.2*					3=	6=		3=	5=	

Part Rat-ed	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**0.75 l/ha 187 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
mid				Min Max	19.8 95.5	**86.6** **100**	**85.7** **100**	33.3 92.6	73.6 100					3>			3>	1<	
			1***	*Mean*	*37.5*	***100***	***100***	*33.3*	*100*	*100*				1>	1=	1=	1>	1=	1=
LEAF	191-231	31-36	3**	*Mean*	38.3	***75.7***	***74.5***	*28.3*	*80.9*			*87.1*		3>	1=	1=	3>	1=	1=
mid				Min Max	30 55	**47.6** **93.7**	**52.2** **86.7**	18.2 33.3	50 100			61.3 100			2<	2<		2<	2<
LEAF	67-257	46-62	9	*Mean*	*44.2*	***74.5***	***70***	*36.9*						6=			7=		
late				Min Max	11.8 70	**20** **95.6**	**20** **91.7**	0 87.6						3>			2>		
LEAF	67-77	46-54	6***	*Mean*	*47.6*	***91.2***	***88.2***	*45.7*						4=			5=		
late				Min Max	24.5 70	**85.7** **95.6**	**85.7** **91.7**	0 87.6						2>			1>		
			5***	*Mean*	*52.3*	***90.6***	***88.6***	*37.8*	*88.3*					3=	5=		4=	5=	
				Min Max	38.8 70	**85.7** **95.6**	**85.7** **91.7**	0 87.6	85.7 91.7					2>			1>		
			3***	*Mean*	*56.3*	***88.2***	***88.2***	*6.6*	*88.2*	*88.2*				2=	3=	3=	2=	3=	3=
				Min Max	38.8 70	**85.7** **91.7**	**85.7** **91.7**	0 16.7	85.7 91.7	85.7 91.7				1>			1>		
			2***	*Mean*	*46.3*	***94.3***	***89.2***	*84.5*	*88.6*				*93*	1=	2=	2=	2=	2=	2=

Part Rat-ed	DA-A	DA-B	No. of tri-als	Name Conc Type	UTCᵃ	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORI-US 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**0.75 l/ha 187 g ai/ha**	**CA2702**	**CA2445**	**Oth-ers**	**CA2702**	**CA2445**	**Oth-ers**
				Min Max	45 47.5	**93.1 95.6**	**88.2 90.2**	81.5 87.6	87.6 89.6				92 94	1>					
			1***	*Mean*	*24.5*	***94.3***	***86.5***	*85.3*			*78.4*			1=		1>	1=		1=
LEAF late	202-257	47-62	3**	*Mean* Min Max	*37.3* 11.8 50	***41.1*** **20 52.4**	***33.4*** **20 60.2**	*19.2* 0 47.5	*63.8* 41.5 90					2= 1>	2= 1<		2= 1>	2= 1<	
			2**	*Mean* Min Max	*50* 50 50	***36.2*** **20 52.4**	***20*** **20 20**	*5* 0 10	*75* 60 90			*90* 90 90		1= 1>	1= 1<	1= 1<	1= 1>	1= 1<	1= 1<
Efficacy after 2 applica-tions																			
POD	59-257	38-62	11	*Mean* Min Max	*26.9* 5.6 60	***67.6*** **16.7 100**	***58.4*** **0 100**	*43.5* 0 98.4						6= 5>			9= 2>		
POD	59-78	38-57	8***	*Mean* Min Max	*23.3* 5.6 60	***75.2*** **16.7 100**	***71.5*** **16.7 100**	*53.3* 0 90.7						5= 3>			6= 2>		
			7***	*Mean* Min Max	*25.2* 5.6 60	***73.5*** **16.7 100**	***70.9*** **16.7 100**	*50.2* 0 90.7	*72* 16.7 100					4= 3>	7=		5= 2>	6= 1<	

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS 250 g/L SE	TILMOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
			3***	*Mean* Min Max	*46.7* 30 60	***43.3*** **16.7** **80**	***43.3*** **16.7** **80**	*5.6* 0 16.7	*43.3* 16.7 80	*43.3* 16.7 80				3=	3=	3=	3=	3=	3=
			2***	*Mean* Min Max	*11.8* 11 12.6	***94*** **93.6** **94.4**	***88.5*** **87.3** **89.7**	*82.2* 76.4 88.1	*88.5* 87.3 89.7				*91.9* 90.9 92.9	1= 1>	2=	2=	2=	2=	2=
			1***	*Mean*	*9.9*	***86.9***	***75.8***	*74.7*			*69.7*			1=		1=	1=		1=
POD	217-257	48-62	3**	*Mean* Min Max	*36.6* 9.7 50	***47.4*** **20** **72.2**	***23.5*** **0** **50.5**	*17.2* 0 51.5	*59.7* 39.2 80					1= 2>	1= 1< 1>		3=	2= 1<	
			2**	*Mean* Min Max	*50* 50 50	***35*** **20** **50**	***10*** **0** **20**	*0* 0 0	*70* 60 80			*85* 80 90		1= 1>	1= 1<	1= 1>	2=	1= 1<	1= 1<
Efficacy after 1 application																			
STEM	38	-	1	*Mean*	*12.2*	***90.6***	***84.3***	*90.9*	*97.5*					1=	1=		1=	1=	
Efficacy after 2 applications																			
STEM	59	21	1	*Mean*	*11.2*	***92.8***	***87.3***	*89.9*	*93.8*					1=	1=		1=	1=	

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS 250 g/L SE	TILMOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
early																			
STEM late	59-257	36-62	14	*Mean*	*31.2*	***76***	***70.6***	*50.4*						8=			10=		
				Min	8.4	**20**	**0**	0						6>			4>		
				Max	88.8	**99.1**	**98.6**	96.1											
STEM late	59-78	36-57	11***	*Mean*	*29.7*	***85.6***	***81.8***	*58.5*						6=			7=		
				Min	8.4	**40**	**40**	0						5>			4>		
				Max	88.8	**99.1**	**98.6**	96.1											
			10***	*Mean*	*30*	***85.7***	***82.7***	*57.1*	*84.5*					6=	10=		6=	9=	
				Min	8.4	**40**	**40**	0	40					4>			4>	1<	
				Max	88.8	**99.1**	**98.6**	96.1	99.2										
			3***	*Mean*	*43.3*	***67.8***	***67.8***	*0*	*67.8*	*67.8*				3=	3=	3=	3=	3=	3=
				Min	30	**40**	**40**	0	40	40									
				Max	50	**83.3**	**83.3**	0	83.3	83.3									
			2***	*Mean*	*14.7*	***93.4***	***88.6***	*75.7*	*90.3*				*93.2*	1=	2=	2=	1=	2=	2=
				Min	13.4	**91.3**	**86.3**	73.8	88.8				93.1	1>			1>		
				Max	16	**95.5**	**91**	77.6	91.8				93.3						
			1***	*Mean*	*26*	***84.6***	***73.1***	*72.3*			*70*			1>		1>	1=		1=
STEM late	217-257	48-62	3**	Mean	*36.8*	***40.8***	***29.3***	*20.7*	*56.5*					2=	2=		3=	3=	
				Min	10.3	**20**	**0**	0	49.5					1>	1>				

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**ORIUS 250 g/L SE**	**TILMOR 240 g/L EC**	**Prosaro 250 EC 250 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**0.75 l/ha 187 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
				Max	50	**82.5**	**68**	62.1	60										
			2**	*Mean*	*50*	***20***	***10***	*0*	*60*			*75*		2=	2=	2=	2=	2=	2=
				Min	50	**20**	**0**	0	60			60							
				Max	50	**20**	**20**	0	60			90							

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy excluding trials where the first application was conducted in autumn and the second application was conducted in spring

<u>After one spring application of CA3642 at 1.0-1.2 L/ha</u>
At early timings (21-38 DA-A) across 3 trials conducted in the South-East EPPO zone, 95 % and 97 % efficacy was observed on the leaves for the 1.0 L and 1.2 L/ha rates, respectively. The efficacy of CA3642 at both rates was statistically comparable to CA2702 and CA2445 in all 3 trials.

On the stems at 38 DA-A in 1 trial, 84 % and 91 % efficacy was observed for the 1.0 L and 1.2 L/ha rates, respectively. The efficacy of CA3642 at both rates was statistically comparable to CA2702 and CA2445 the 1 trial.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At early timings (14-28 DA-B) across 6 trials, 91 % and 93 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 5 of the trials and significantly more effective in 1 trial. Where applied in 5 of the 6 trials, CA2445 was comparable to the higher 1.2 L/ha rate of CA3642 in 5 trials, and comparable to the lower rate of 1.0 L/ha in 4 trials being less effective than the 1.0 L/ha rate in 1 trial. Both rates of CA3642 were statistically comparable to Propulse where applied in 1 trial and compared to Orius where applied in 1 trial, the 1.2 L/ha rate of CA3642 gave higher efficacy and the lower rate was comparable to Orius.
At later assessment dates (30-39 DA-B) across 6 trials, efficacy of 91 % and 93 % was observed on the leaves after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 3 of the trials and significantly more effective in 3 trials. The higher rate of CA3642 was statistically comparable to CA2445 in all 6 trials, while the lower rate was comparable in 5 trials and significantly less effective in 1 trial. Both rates of CA3642 were statistically comparable to Propulse where applied in 1 trial.
At even later timings (46-54 DA-B) on the leaves, efficacy of 88 % and 91 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 6 trials. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 in 4 of the trials and significantly more effective in 2 trials. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in 5 of the trials and significantly more effective in 1 trial. Where applied, CA2445 was statistically comparable to both rates of CA3642 in 5 trials, Propulse was comparable to both rates of CA3642 in 3 trials, and Prosaro was comparable to both rates in 2 trials. In 1 trial, the efficacy of CA3642 applied at the higher rate of 1.2 L/ha was significantly more effective than Orius while the lower rate of 1.0 L/ha was statistically comparable with Orius.

On the pods at 37-57 DA-B, efficacy of 72 % and 75 % was observed after the application of 1.0 L or 1.2 L/ha CA3642, respectively, across 8 trials. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 in 4 of the trials and significantly more effective in 3 trials. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in 5 of the trials and significantly more effective in 2 trials. Where applied, CA2445 was statistically comparable to 1.2 L/ha rate of CA3642 in all trials, and gave higher efficacy compared to the 1.0 L/ha rate in 1 trial. Prosaro was comparable to both rates of CA3642 in 2 trials, and Orius was comparable to both rates in 1 trial.

At 36-57 DA-B on the stems, efficacy of 82 % and 86 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 11 trials. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 in 6 of the trials and significantly more effective in 5 trials. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in 7 of the trials and significantly more effective in 4 trials. Where applied, Propulse was statistically comparable to both rates of CA3642 in 3 trials, Prosaro was comparable to both rates of CA3642 in 2 trials, and Orius was comparable to the 1.0 L/ha rate, and lower than the 1.2 L/ha rate in 1 trial. The higher 1.2 L/ha rate of CA3642 was statistically comparable to CA2445 where applied in 10 trials, while the lower rate of 1.0 L/ha was comparable in 9 trials and significantly less effective in 1 trial.

After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring

At assessment timings 31-36 DA-B across 3 trials, efficacy of 75 % and 76 % was observed on the leaves after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was significantly more effective than CA2702 in all 3 trials. Both rates of CA3642 were statistically comparable to CA2445 in 1 of the 3 trials, and significantly less effective in 2 trials. Similarly, both rates of CA3642 were statistically comparable to Tilmor in 1 of the 3 trials, and significantly less effective in 2 trials.

At later assessment timings 47-62 DA-B across 3 trials, efficacy of 33 % and 41 % was observed on the leaves after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 2 trials and significantly more effective in 1 trial. Both rates of CA3642 were statistically comparable to CA2445 in 2 of the 3 trials, and significantly less effective in 1 trial. Where applied in 2 trials, Tilmor was statistically comparable to both rates of CA3642 in 1 trial, and significantly more effective in 1 trial.

On the pods at 48-62 DA-B, efficacy of 24 % and 47 % was observed after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 3 trials. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 in 1 of the trials and significantly more effective in 2 trials. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in all 3 trials. The higher 1.2 L/ha rate of CA3642 was statistically comparable to CA2445 in 1 trial, significantly more effective in 1 trial and significantly less effective in 1 trial, while the lower rate of 1.0 L/ha was comparable in 2 trials and significantly less effective in 1 trial. Both rates of CA3642 were statistically comparable to Tilmor where applied in 1 trial and significantly more effective than Tilmor in 1 trial.

On the stems at 48-62 DA-B, efficacy of 29 % and 41 % was observed after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 3 trials. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 and CA2445 in 2 of the trials and significantly more effective in 1 trial. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 and CA2445 in all 3 trials. Both rates of CA3642 were statistically comparable to Tilmor where applied in 2 of the trials.

Following either 1 or 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in 34 of the 42 data sets.

Both rates of CA3642 significantly reduced disease severity in 7 of 12 data sets after two applications split in the autumn and spring.

The efficacy against ERYSCR was either comparable to, or significantly more effective than that derived from applications of the reference products in the majority of data sets according to statistical analysis.

Comments of zRMS:

15 efficacy trials were conducted to control of *Erysiphe cruciferarum* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved high results after 1-2 applications. The mean efficacy was 95-97% on leaves and 84-91% on stem after 1 spring application. In case of two spring applications, the test product presented results of 91-93% in the early assessment, 91-93% in the later assessment and 88-91% in even later assessment on leaves. Also good effectiveness were observed on stem in the later observation (82-86%) and the moderate control on pod (72-75%). In case of autumn and spring applications, CA3642 at claimed dose rates achieved moderate effectiveness on leaves in the later assessment (75-76%). Insufficient control has been noted for pod and stem. Significant inferior results were observed for CA2702 compared to the test product. No significant differences between CA3642 and other reference products were visible.

Based on the above summary, CA3642 at 1-1,2 l/ha in 1 spring applications is effective for control of ERYSCR in winter oilseed rape in the SE zone.

Summary of data on ERYSCR in BRSNW

Data is presented from a total of 17 trials to evaluate the efficacy of CA3642 applied at the proposed rates of 1.0-1.2 L/ha to control ERYSCR in winter oilseed rape. In 43 of 58 trial assessments across the Maritime and South-East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made and regardless of application timing.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones and the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

One spring application
No data were generated in the Maritime or North-East EPPO zones.

In the South-East EPPO zone, the mean efficacy of a single application of CA3642 at 1.0 L and 1.2 L/ha was 95-97 % on the leaves and 84-91 % on the stems. Disease severity ranged from 5-19 %.

Two spring applications
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 50-51 % on the leaves at 1.0 L and 1.2 L/ha. Low control was observed on the pods (0-5%) and stems (11-16%). In these trials disease severity ranged from 14 % to 30 %.

No data were generated in the North-East EPPO zone.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 88-93 % on the leaves across all timings ranging from 14-54 DA-B at 1.0 L and 1.2 L/ha. Two spring applications provided 72-75 % efficacy on the pods and 82-86 % efficacy on the stems. Disease severity ranged between 5-95.5%.

Two applications, one in autumn and one in spring
No data were generated in the Maritime or North-East EPPO zones.

In the South-East EPPO zone, the mean efficacy of split-season applications of CA3642 at 1.0 L and 1.2 L/ha was 75-76 % on the leaves decreasing to 33-41% at later timings, 24-47 % on the pods and 29-41 % on the stems. Disease severity ranged from 10-55 %.

Winter oilseed rape (BRSNW) – Phoma leaf spot / stem canker (LEPTMA – *Leptosphaeria maculans*)

A total of 27 field trials were established 2019 or 2020 in order to evaluate the efficacy of CA3642 for the control of LEPTMA in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in France (1 trial), the Czech Republic (2 trials), Germany (4 trials) and Great Britain (2 trials).
Trials from the North-East EPPO zone were carried out in Latvia (1 trial), Lithuania (1 trial) and Poland (4 trials).
Trials from the South-East EPPO zone were carried out in Hungary (9 trials) and Romania (3 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rates of 1.0 and 1.2 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.
Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn

and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

Overall, CA3642 applied at 1.0-1.2 L/ha consistently and significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products in the majority of data sets.

BRSNW – LEPTMA – Maritime EPPO zone

A total of 9 trials from the Maritime EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against LEPTMA in winter oilseed rape. The trials were carried out in France (1 trial), the Czech Republic (2 trials), Germany (4 trials) and Great Britain (2 trials) between 2019 and 2021.
In 4 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 39-55 and the second application was done 27-35 days later, at BBCH 65-69.
In the other 5 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-19 and the second application was done 91-191 days later, at BBCH 65.

Table 3.2-414: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against LEPTMA – valid assessments – Maritime zone

Part Rat-ed	DA-A	DA-B	No. of tri-als	Name Conc Type	UT-D[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PECARI 250 EC 250 g/L EC	BIS-TRO 90 g/L EC	CARAM-BA 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.6 l/ha 54 g ai/ha	1.5 l/ha 90 g ai/ha	CA2702	CA2445	Oth-ers	CA2702	CA2445	Oth-ers
Efficacy after 1 application																		
LEAF	15-149	-	5**	*Mean*	*9.6*	***69.9***	***64.9***	*44.8*	*68.3*				3=	4=		3=	4=	
				Min	4.2	**39.6**	**36.2**	26.1	35.3				2>	1>		2>	1<	
				Max	20.6	**86.6**	**82.3**	70.6	85.2									
			2**	*Mean*	*16.9*	***83.8***	***78.5***	*29.7*	*81.2*			*63.1*	2>	1=	2>	2>	1=	2>
				Min	13.1	**81.1**	**74.7**	26.1	77.2			57.1		1>			1<	
				Max	20.6	**86.6**	**82.3**	33.4	85.2			69.2						
Efficacy after 2 applications																		
LEAF	49	21	1	*Mean*	*4.5*	***100***	***100***	*100*	*100*				1=	1=		1=	1=	
LEAF	167	18	1**	*Mean*	*5*	***87.8***	***75***	*67.2*	*71.8*				1>	1=		1=	1=	
LEAF	49-167	18-21	2	*Mean*	*4.8*	***93.9***	***87.5***	*83.6*	*85.9*				1=	2=		2=	2=	
				Min	4.5	**87.8**	**75**	67.2	71.8				1>					
				Max	5	**100**	**100**	100	100									
LEAF	67	39	1	*Mean*	*5.8*	***100***	***100***	*100*	*100*				1=	1=		1=	1=	
Efficacy after 2 applications																		
STEM early	167	18	1**	*Mean*	*4.2*	***73.9***	***70.9***	*56.6*	*69.4*				1=	1=		1=	1=	
	52	21	1	*Mean*	*4.5*	***61***	***64.1***	*65.6*	*70*				1=	1=		1=	1=	
	52-167	18-21	2	*Mean*	*4.4*	***67.5***	***67.5***	*61.1*	*69.7*				2=	2=		2=	2=	
				Min	4.2	**61**	**64.1**	56.6	69.4									

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UT-D[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PECARI 250 EC 250 g/L EC**	**BISTRO 90 g/L EC**	**CARAMBA 60 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.6 l/ha 54 g ai/ha**	**1.5 l/ha 90 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
				Max	4.5	**73.9**	**70.9**	65.6	70									
STEM late	69-209	42-71	4	*Mean* Min Max	*13.3* 5.1 24.7	***71*** **58.7** **93.5**	***69.3*** **55.3** **81**	*54.1* 33.5 92.2					4=			4=		

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UT-D[a]**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PECARI 250 EC 250 g/L EC**	**BISTRO 90 g/L EC**	**CARAMBA 60 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.6 l/ha 54 g ai/ha**	**1.5 l/ha 90 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
STEM late	69-93	42-58	3***	*Mean*	*11.8*	***73.6***	***69.2***	*58.3*					3=			3=		
				Min	5.1	**58.7**	**55.3**	33.5										
				Max	24.7	**93.5**	**81**	92.2										
			2***	*Mean*	*15.2*	***63.7***	***63.3***	*41.4*	*56.8*				2=	2=		2=	2=	
				Min	5.7	**58.7**	**55.3**	33.5	46.8									
				Max	24.7	**68.7**	**71.3**	49.3	66.9									
			1***	*Mean*	*5.1*	***93.5***	***81***	*92.2*		*59*			1=		1>	1=		1>
STEM late	209	71	1**	*Mean*	*17.5*	***63.2***	***69.5***	*41.3*	*53.9*		*24.4*		1=	1=	1>	1=	1=	1>

[a] UTC: % infestation in untreated control at assessment date
**Trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring.

After two spring applications of CA3642 applied at 1.0-1.2 L/ha
At two different timings (21 and 39 DA-B) in 1 trial, 100 % efficacy was observed on the leaves for both the 1.0 L and 1.2 L rates of CA3642, CA2702 and CA2445.

At an early timing (21 DA-B) on the stems in 1 trial, efficacy of 64 % and 61 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445.
At later timings (42-58 DA-B) on the stems across 3 trials, efficacy of 69 % and 74 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in all 3 trials and to CA2445 where applied in 2 trials. Where applied in 1 trial, the efficacy of Pecari was significantly less effective compared to both rates of CA3642.

After one autumn application of CA3642 applied at 1.0-1.2 L/ha
At 15-149 DA-A across 5 trials, 70 % and 65 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 3 of the trials and significantly more effective in 2 trials. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 in 4 of the trials and significantly more effective in 1 trial. Where applied in 2 of the 5 trials, both rates of CA3642 were significantly more effective than Caramba.

After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring
At an early timing (18 DA-B) in 1 trial, 75 % and 88 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445. The efficacy of the high 1.2 L/ha rate of CA3642 was significantly more effective compared to CA2702 while the lower 1.0 L/ha rate was comparable to CA3642.

On the stems at 18 DA-B in 1 trial, 71 % and 74 % efficacy was observed for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to both CA2702 and CA2445.
At a later timing (71 DA-B) in 1 trial, 70 % and 63 % efficacy was observed for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to both CA2702 and CA2445. Both rates of CA3642 were significantly more effective compared to the standard reference product Bistro.

Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in 5 of the 6 data sets.
Both rates of CA3642 significantly reduced disease severity in all 8 data sets after 1 autumn application or 2 applications split in the autumn and spring.

In all data sets, the efficacy against LEPTMA was either comparable to, or significantly more effective than that derived from applications of the reference products according to statistical analysis.

Comments of zRMS:

9 efficacy trials were conducted to control of *Leptosphaeria maculans* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 65-70% after 1 autumn application. No results after 1 spring application were available. In case of 2 spring applications, the test product present results of 100% on leaves and 61-64% in the early assessment and 69-74% in the later assessment on stems. In case of autumn and spring applications, CA3642 at claimed dose rates had level of control of 75-88% on leaves and 71-74% in the early assessment on stems. Similar effect was visible for the reference products in most trials.
Based on the above summary, CA3642 at 1-1,2 l/ha in 1 autumn applications is moderately effective for control of LEPTMA in winter oilseed rape in the MAR zone.

BRSNW – LEPTMA – North-East EPPO zone

Six trials from the North-East EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against LEPTMA in winter oilseed rape. The trials were carried out in Latvia (1 trial), Lithuania (1 trial) and Poland (4 trials) between 2019 and 2021.
In 4 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 36-55 and the second application was done 22-44 days later, at BBCH 65-69.
In the other 2 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-15 and the second application was done 206 days later, at BBCH 65-69.

Table 3.2-415: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against LEPTMA – valid assessments – North-East zone

Part Rated	**DA-A**	**DA-B**	**No. of tri-als**	**Nam e**	**UT C**	**CA3642**	**CA3642**	**CA270 2**	**CA244 5**	**CARAM-BA 60 SL**	**PRO-SARO**	**ORI-US EX-TRA**	**ARTI-NA**	**PLEXE O 60 EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Conc		**300 g/L**	**300 g/L**	**250 g/L**	**250 g/L**	**60 g/L**	**250 g/L**	**250 g/L**	**90 g/L**	**60 g/L**						
				Type		**SC**	**SC**	**SC**	**EC**	**SL**	**EC**	**EW**	**EC**	**EC**						
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 60 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**0.7 l/ha 63 g ai/ha**	**1 l/ha 60 g ai/ha**	**CA270 2**	**CA244 5**	**Oth-ers**	**CA270 2**	**CA244 5**	**Oth-ers**
Efficacy after 1 application																				
LEAF	14	-	1**	*Mean*	5	***60***	***80***	*20*	*60*				*40*		1=	1=	1=	1=	1=	1=
Efficacy after 1 applica-tion																				
LEAF	206	-	1**	*Mean*	6	***39.8***	***44.5***	*27.6*	*48.9*				*52.6*		1=	1=	1=	1=	1=	1=
Efficacy after 2 applications																				
LEAF	43-44	21	2	*Mean*	*7.7*	***94.5***	***94.5***	*89.1*							2=			2=		
				Min	7	**90.5**	**90.8**	80.9												
				Max	8.4	**98.5**	**98.2**	97.3												
			1	*Mean*	*8.4*	***98.5***	***98.2***	*97.3*		*98.8*					1=		1=	1=		1=
			1	*Mean*	*7*	***90.5***	***90.8***	*80.9*						*90.7*	1=		1=	1=		1=
Efficacy after 2 applications																				
LEAF	58-65	36-42	2	*Mean*	*7.5*	***94.3***	***94.3***	*93.7*							2=			2=		
				Min	6.9	**89.9**	**92.4**	91.2												
				Max	8	**98.8**	**96.3**	96.3												
			1	*Mean*	*8*	***98.8***	***96.3***	*96.3*		*97.5*					1=		1=	1=		1=
			1	*Mean*	*6.9*	***89.9***	***92.4***	*91.2*						*93.1*	1=		1=	1=		1=
Efficacy after 2 applications																				
POD	58-256	36-50	2	*Mean*	*10.1*	***94.3***	***92.3***	*93.8*							2=			2=		
				Min	9.4	**91.5**	**89.4**	90.4												
				Max	10.7	**97.2**	**95.3**	97.2												
	58	36	1	*Mean*	*10.7*	***97.2***	***95.3***	*97.2*		*97.2*					1=		1=	1=		1=
	256	50	1**	*Mean*	*9.4*	***91.5***	***89.4***	*90.4*	*93.6*			*95.7*			1=	1=	1=	1=	1=	1=

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name**	**UTC**	**CA3642**	**CA3642**	**CA2702**	**CA2445**	**CARAMBA 60 SL**	**PROSARO**	**ORIUS EXTRA**	**ARTINA**	**PLEXEO 60 EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Conc		**300 g/L**	**300 g/L**	**250 g/L**	**250 g/L**	**60 g/L**	**250 g/L**	**250 g/L**	**90 g/L**	**60 g/L**						
				Type		**SC**	**SC**	**SC**	**EC**	**SL**	**EC**	**EW**	**EC**	**EC**						
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 60 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**0.7 l/ha 63 g ai/ha**	**1 l/ha 60 g ai/ha**	**CA2702**	**CA2445**	**Others**	**CA2702**	**CA2445**	**Others**
Efficacy after 2 applications																				
STEM	68-256	24-54	3	*Mean*	*8.4*	***91.3***	***79.8***	*81.5*							3=			3=		
				Min	6.8	**86.2**	**72.1**	71.3												
				Max	9.4	**96.6**	**84.3**	91.2												
	68	24	1	Mean	*8.9*	***96.6***	***84.3***	*82*		*86.5*					1=	1=	1=	1=		1=
	84	54	1	Mean	*9.4*	***86.2***	***83***	*71.3*	*73.4*		*74.5*				1=	1=	1=	1=	1=	1=
	256	50	1**	Mean	*6.8*	***91.2***	***72.1***	*91.2*	*94.1*			*91.2*			1=	1=	1=	1=	1=	1=

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At an early timing (21 DA-B) across 2 trials carried out in the North-East EPPO zone, 95 % efficacy was observed on the leaves following two spring applications of CA3642 at both 1.0 L and 1.2 L/ha. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 in both trials, and statistically comparable to Caramba where applied in 1 trial and Plexeo where applied in 1 trial.
At later timings (36-42 DA-B) across 2 trials, 94 % efficacy was observed on the leaves following two spring applications of CA3642 at both 1.0 L and 1.2 L/ha. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 in both trials, and statistically comparable to Caramba where applied in 1 trial and Plexeo where applied in 1 trial.

On the pods at 36-50 DA-B across 2 trials, 92 % and 94 % efficacy was observed following two spring applications of CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 in 2 trials, and comparable to Caramba where applied in 1 trial.

At 24-54 DA-B, efficacy of 80 % and 91 % was observed on the stems for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 in all 3 trials, and comparable to Caramba where applied in 1 trial, comparable to Prosaro where applied in 1 trial and comparable to Orius Extra where applied in 1 trial.

Results from both North-East EPPO zone and neighbouring countries (Germany and Czech Republic) are available for early assessments (21 DA-B) on the leaves where the achieved mean efficacy was 96 % across 3 trials after two spring applications of both 1.0 L and 1.2 L/ha CA3642. At later timings (36-42 DA-B), efficacy of 96 % was observed on the leaves for CA3642 at both 1.0 L and 1.2 L/ha. On the stems at 24-58 DA-B, efficacy of 75 % and 83 % was observed for CA3642 at 1.0 L and 1.2 L/ha, respectively.

<u>After one autumn application of CA3642 applied at 1.0-1.2 L/ha</u>
At an early timing (14 DA-A) in 1 trial, efficacy of 80 % and 60 % was observed on the leaves for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Artina.
At a later timing (206 DA-A) in 1 trial, efficacy of 45 % and 40 % was observed on the leaves for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Artina.

Results from both North-East EPPO zone and Germany are available for early assessments (14-15 DA-A) on the leaves where the achieved mean efficacy was 76-79 % across 3 trials after one autumn application of 1.0 L or 1.2 L/ha CA3642.

<u>After two applications of CA3642 applied at 1.0-1.2 L/ha, one in autumn and one in spring</u>
On the pods at 50 DA-B in 1 trial, efficacy of 89 % and 92 % was observed for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Orius Extra.

On the stems at 50 DA-B in 1 trial, efficacy of 72 % and 91 % was observed for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702, CA2445 and Orius Extra.

Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in all 7 data sets.
Both rates of CA3642 significantly reduced disease severity in 3 of 4 data sets after 1 autumn application or 2 applications split in the autumn and spring.

The efficacy against LEPTMA was comparable to that derived from applications of the reference products in all data sets according to statistical analysis.

Comments of zRMS:

6 efficacy trials were conducted to control of *Leptosphaeria maculans* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 60-80% in the early assessment and 40-45% in the later assessment on leaves after 1 autumn application. No results after 1 spring application were available. In case of 2 spring applications, the test product presented results of 94-95% on leaves, 92-94% on pods and 84-97% on stems. In case of autumn and spring applications, CA3642 at claimed dose rates had level of control of 89-92% on pods and 72-91% on stems. No significant differences between test and reference products were observed.
Based on the above summary, CA3642 at 1-1,2 l/ha in 1 autumn applications is moderately effective for control of LEPTMA in winter oilseed rape in the NE zone.

BRSNW – LEPTMA – South-East EPPO zone

A total of 12 trials from the South-East EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against LEPTMA in winter oilseed rape. The trials were carried out in Hungary (9 trials) and Romania (3 trials) between 2019 and 2021.
In 6 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 55-59 and the second application was done 21-25 days later, at BBCH 65-67.
In the other 6 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-18 and the second application was done 185-197 days later, at BBCH 65-66.

Table 3.2-416: Summary – Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against LEPTMA – valid assessments – South-East EPPO zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	TIL-MOR 240 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 1 application																	
LEAF	185	-	2**	*Mean*	*7.8*	***88.7***	***83.9***	*84.7*	*88.5*			2=	2=		2=	2=	
				Min	7.8	**86.1**	**79.2**	84.2	87.9								
				Max	7.9	**91.2**	**88.5**	85.2	89.2								
Efficacy after 2 applications																	
LEAF	200	15	3**	*Mean*	*11.2*	***85.8***	***89.5***	*83.1*	*82*			2=	3=		2=	3=	
early				Min	8.7	**80.5**	**84.4**	79.8	70.1			1>			1>		
				Max	12.8	**89.6**	**94.3**	87.4	88.3								
			1**	*Mean*	*8.7*	***80.5***	***94.3***	*87.4*	*70.1*		*79.9*	1=	1=	1=	1=	1=	1=
LEAF	44-46	21	2	*Mean*	*23.9*	***97.3***	***92.8***	*98.9*		*99.1*		1=		1=	1=		1=
early				Min	23.5	**95.1**	**86.6**	98.7		99.1		1<		1<	1<		1<
				Max	24.2	**99.5**	**99**	99		99.2							
LEAF	57-236	32-49	3	*Mean*	*23.7*	***90.7***	***88***	*89.1*				3=			3=		
				Min	5.6	**84.5**	**79.9**	80.3									
				Max	37	**97.3**	**96.8**	94.1									
	57-67	32-46	2***	*Mean*	*32.7*	***90.9***	***88.3***	*87.2*		*91.8*		2=		2=	2=	1=	
				Min	28.4	**84.5**	**79.9**	80.3		88.7						1<	
				Max	37	**97.3**	**96.8**	94.1		94.9							
	236	49	1**	*Mean*	*5.6*	***90.4***	***87.2***	*93.1*	*84*			1=	1=		1=	1=	
Efficacy after 2 applications																	

Part Rated	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**TIL-MOR 240 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**CA2702**	**CA2445**	**Oth-ers**	**CA2702**	**CA2445**	**Oth-ers**
POD	226	41	2**	*Mean*	*6.3*	***93.6***	***92.8***	*86.4*	*95.2*			1=	2=		1=	2=	
				Min	6.2	**93.5**	**92.1**	83.9	95.2			1>			1>		
				Max	6.3	**93.7**	**93.5**	88.9	95.2								

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	TIL-MOR 240 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	CA2702	CA2445	Others	CA2702	CA2445	Others
Efficacy after 2 applications																	
STEM	200	15	2**	*Mean*	*6.2*	***93***	***91***	*84.9*	*94.7*			1=	2=		2=	2=	
				Min	6	**91.2**	**88**	80.9	94.7			1>					
				Max	6.3	**94.8**	**94**	88.9	94.8								
STEM	226	41	2**	*Mean*	*8.5*	***89.7***	***87.5***	*82.7*	*89.7*			1=	2=		2=	2=	
				Min	7.5	**88**	**86.7**	81.3	88			1>					
				Max	9.4	**91.5**	**88.3**	84	91.5								
STEM	75-264	50-79	8	*Mean*	*34.8*	***78.9***	***63.6***	*73*				7=			6=		
				Min	6.5	**48.9**	**19.7**	46.1				1>			1<		
				Max	76.4	**96.4**	**91.7**	92.5							1>		
	251-264	54-79	3**	*Mean*	*57.9*	***63.4***	***48.9***	*58.5*	*67.3*		*63.3*	2=	2=	2=	3=	2=	3=
				Min	43.6	**48.9**	**19.7**	46.1	47.2		55	1>	1<	1>		1<	
				Max	76.4	**83.6**	**70.3**	72.3	79.2		67.7						
	75-81	50-56	5***	*Mean*	*20.9*	***88.1***	***72.4***	*81.7*		*93.9*		4= 1>		5=	3=		4=
				Min	6.5	**66.5**	**34.5**	69.2		87.2					1<		1<
				Max	36.2	**96.4**	**91.7**	92.5		98.9					1>		

**Trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>

At early timings (21 DA-B) across 2 trials, 93 % and 97 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and Propulse in 1 of the trials and significantly less effective than CA2702 and Propulse in 1 trial.

At later assessment dates (32-46 DA-B) across 2 trials, efficacy of 88 % and 91 % was observed on the leaves after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in both trials. The higher rate of CA3642 was statistically comparable to Propulse in both trials, while the lower rate was comparable in 1 trial and significantly less effective in 1 trial.

At 50-56 DA-B on the stems, efficacy of 72 % and 88 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 5 trials. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 and Propulse in all 5 trials. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in 3 of the trials, significantly less effective in 1 trial and significantly more effective in 1 trial. Also, at the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in 4 of the trials, significantly less effective in 1 trial.

<u>After one application of CA3642 applied at 1.0-1.2 L/ha in the autumn</u>

At 185 DA-A across 2 trials, efficacy of 84 % and 89 % was observed on the leaves after one autumn application of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in both trials.

<u>After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring</u>

At an early timing 15 DA-B across 3 trials, efficacy of 90 % and 86 % was observed on the leaves after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 2 trials and significantly more effective in 1 trial. Both rates of CA3642 were statistically comparable to CA2445 in all 3 trials and to Tilmor where applied in 1 trial.

At a later assessment timing 49 DA-B in 1 trial, efficacy of 87 % and 90 % was observed on the leaves after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445.

On the pods at 41 DA-B, efficacy of 93% and 94 % was observed after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 2 trials. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 1 of the trials and significantly more effective in 1 trial. Both rates of CA3642 were statistically comparable to CA2445 in both trials.

At an early timing (15 DA-B) on the stems across 2 trials, efficacy of 91 % and 93% was observed after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2445 in both trials, and statistically comparable to CA2702 in 1 of the trials and significantly more effective in 1 trial. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 and CA2445 in both trials.

At a later timing (41 DA-B) on the stems across 2 trials, efficacy of 88 % and 90% was observed after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2445 in both trials, and statistically comparable to CA2702 in 1 of the trials and significantly more effective in 1 trial. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 and CA2445 in both trials.

At the final timings 54-79 DA-B across 3 trials, efficacy of 49 % and 63% was observed on the stems after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 and Tilmor in 2 trials and significantly more effective than CA2702 and Tilmor in 1 trial. At the lower 1.0 L/ha rate, CA3642 was statistically comparable to both CA2702 and Tilmor in all 3 trials. Compared to CA2445, both rates of CA3642 were statistically comparable in 2 trials and significantly less effective in 1 trial.

Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in all 9 data sets.
Both rates of CA3642 significantly reduced disease severity in 14 of 15 data sets after 1 or 2 applications split in the autumn and spring.

The efficacy against LEPTMA was either comparable to, or significantly more effective than that derived from applications of the reference products in the majority of data sets according to statistical analysis, with substantial benefits compared to azoxystrobin alone particularly on the stems.

Comments of zRMS:

12 efficacy trials were conducted to control of *Leptosphaeria maculans* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good effectiveness after 1-2 applications. The mean efficacy was 84-89% after 1 autumn application. No results after 1 spring application were available. In case of 2 spring applications, the test product presented results of 93-97% in the early assessment and 88-91% in the later assessment on leaves and 72-88% on stems. In case of autumn and spring applications, CA3642 at claimed dose rates had effectiveness of 86-90% on leaves, 93-94% on pods and 91-93% in the early assessment and 88-90% in the later assessment on stems. No significant differences between test and reference products were observed.
Based on the above summary, CA3642 at 1-1,2 l/ha in 1 autumn application is effective for control of LEPTMA in winter oilseed rape in the SE zone. The dose rate of 1,2 l/ha may be recommended at higher disease pressure.

Summary of data on LEPTMA in BRSNW

Data is presented from a total of 27 trials to evaluate the efficacy of CA3642 applied at the proposed rates of 1.0-1.2 L/ha to control LEPTMA in winter oilseed rape. In 46 of 49 trial assessments across all EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made and regardless of application timing.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones and the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

<u>One spring application</u>
No data were generated.

<u>Two spring applications</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 100 % on the leaves at both 1.0 L and 1.2 L/ha. On the stems, efficacy was 61-64 % increasing to 69-74 % at later timings. In these trials disease severity ranged from 5 % to 25 %.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 94-95 % on the leaves at both 1.0 L and 1.2 L/ha at all assessment timings. On the pods, 92-95 % efficacy was observed and on the stems, efficacy was 80-91 %. In these trials disease severity ranged from 7 % to 11 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 93-97 % on the leaves at 1.0 L and 1.2 L/ha, decreasing slightly to 88-91 % efficacy at later timings. Two spring applications provided 72-88 % efficacy on the stems. Disease severity ranged between 7-37%.

<u>One application in the autumn</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 65-70 % on the leaves at 1.0 L and 1.2 L/ha. In these trials disease severity ranged from 4 % to 21 %.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 60-80 % on the leaves at 1.0 L and 1.2 L/ha, decreasing to 40-45 % efficacy at a much later timing. In this trial disease severity ranged was 5-6 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 84-89 % on the leaves at 1.0 L and 1.2 L/ha. In these trials disease severity was 8 %.

Two applications, one in autumn and one in spring

In the Maritime EPPO zone, the mean efficacy of two split-season applications of CA3642 was 75-88 % on the leaves at 1.0 L and 1.2 L/ha. On the stems, efficacy was 71-74 % decreasing slightly to 63-70 % at later timings. In these trials disease severity ranged from 4 % to 18 %.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 89-92 % on the pods and 72-91 % on the stems at 1.0 L and 1.2 L/ha. In these trials disease severity ranged from 5 % to 9 %.

In the South-East EPPO zone, the mean efficacy of two split-season applications of CA3642 was 86-90 % on the leaves at 1.0 L and 1.2 L/ha across all timings. Two split-season applications provided 93-94 % efficacy on the pods, and 91-93 % efficacy on the stems decreasing to 49-63 % by the final timings. Disease severity ranged between 6-76%.

Winter oilseed rape (BRSNW) – Light leaf spot (PYRPBR – *Pyrenopeziza brassicae*)

A total of 9 field trials were established 2020 or 2020 in order to evaluate the efficacy of CA3642 for the control of PYRPBR in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in France (4 trials), Germany (1 trial) and Great Britain (2 trials)
No data was generated in the North-East EPPO zone.
Trials from the South-East EPPO zone were carried out in Romania (2 trials).

In all trials the test product CA3642 was applied 2 times at the proposed dose rates of 1.0 and 1.2 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.
Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

Overall, CA3642 applied at 1.0-1.2 L/ha significantly reduced disease compared to the untreated control in the majority of data sets, and was comparable to, or more effective than the reference products in all data sets.

BRSNW – PYRPBR – Maritime EPPO zone

Seven trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against PYRBR in winter oilseed rape. The trials were carried out in France (4 trials), Germany (1 trial) and Great Britain (2 trials) in 2020 or 2021.
In 5 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 38-55 and the second application was done 35-46 days later, at BBCH 65-69.
In the other 2 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 18-19 and the second application was done 135-146 days later, at BBCH 65-67.

Table 3.2-417: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against PYRPBR – valid assessments – Maritime zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250-275 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.63 l/ha 173 g ai/ha	0.7 l/ha 175 g ai/ha	0.63-0.7 l/ha 173-175 g ai/ha	CA2702	PTZ	CA2702	PTZ
Efficacy after 1 application																
LEAF	21-37	-	5	*Mean*	*17.9*	***21.7***	***22.8***	*8.2*				*23.4*	4=	5=	4=	5=
				Min	7.7	**6.5**	**4.7**	0				0	1>		1>	
				Max	23.8	**30.8**	**30.4**	20.5				42.2				
			3	*Mean*	*17*	***21.4***	***19.8***	*3.6*	*19.8*			*19.8*	2=	3=	2=	
				Min	7.7	**6.5**	**4.7**	0	0			0	1>		1>	3=
				Max	23.8	**30.8**	**27.8**	5.5	42.2			42.2				
			2	*Mean*	*19.4*	***22.3***	***27.4***	*15.2*		*28.8*		*28.8*	2=	2=	2=	2=
				Min	18.3	**21.6**	**24.5**	9.8		22.5		22.5				
				Max	20.5	**23**	**30.4**	20.5		35		35				
			1	*Mean*	*4*	***20.7***	***22.7***	*17.6*			*17.4*	*17.4*	1=	1=	1=	1=
LEAF	37-46	-	3	*Mean*	*12*	***40.7***	***47.2***	*30.8*				*41.8*	3=	3=	3=	3=
				Min	4.7	**35.8**	**41.4**	29.1				37.3				
				Max	17.1	**45.3**	**57.8**	33.3				47				
			2	*Mean*	*15.7*	***38.4***	***41.9***	*31.2*		*44.1*		*44.1*	2=	2=	2=	2=
				Min	14.2	**35.8**	**41.4**	29.1		41.2		41.2				
				Max	17.1	**41**	**42.4**	33.3		47		47				
			1	*Mean*	*4.7*	***45.3***	***57.8***	*30.1*	*37.3*			*37.3*	1=	1=	1=	1=
LEAF	135-146	-	2**	*Mean*	*14.2*	***43.2***	***34.2***	*27*	*35.9*				2=	2=	2=	2=
				Min	11.2	**25.5**	**20.5**	19	14							
				Max	17.1	**60.9**	**48**	34.9	57.7							

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250-275 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.63 l/ha 173 g ai/ha	0.7 l/ha 175 g ai/ha	0.63-0.7 l/ha 173-175 g ai/ha	CA2702	PTZ	CA2702	PTZ
Efficacy after 2 applications																
LEAF early	58-160	14-23	6	Mean	13.5	42.1	40.5	20.2				47.8	6=	6=	5= 1>	6=
				Min	7.5	**22.5**	**16.5**	3.7				28.6				
				Max	18.4	**61**	**65**	36.8				67.8				
	58-69	20-23	4***	Mean	13.6	43.2	43.1	24				47.7	4=	4=	3= 1>	4=
				Min	7.5	**22.5**	**31.1**	12.9				41.7				
				Max	18.4	**61**	**65**	36.8				62.1				
			2***	Mean	13.0	41.7	48.0	15.9	52.0			52.0	2=	2=	1= 1>	2=
				Min	7.5	22.5	31.1	12.9	41.9			41.9				
				Max	18.4	61.0	65.0	18.9	62.1			62.1				
			2***	Mean	14.2	44.6	38.1	32		43.3		43.3	2=	2=	2=	2=
				Min	12.6	**40.7**	**37.9**	27.3		41.7		41.7				
				Max	15.8	**48.5**	**38.4**	36.8		44.9		44.9				
	149-160	14-21	2**	Mean	13	41.7	48	15.9	52			52	2=	2=	2=	2=
				Min	7.5	**22.5**	**31.1**	12.9	41.9			41.9				
				Max	18.4	**61**	**65**	18.9	62.1			62.1				
LEAF late	88-177	42-50	2	Mean	14.3	53.7	43.7	29.8	49			49	2=	2=	2=	2=
				Min	11.7	**37.4**	**26.6**	28.4	36.1			36.1				
				Max	16.9	**70**	**60.9**	31.3	61.8			61.8				
	177	42	1**	Mean	16.9	37.4	26.6	28.4	36.1			36.1	1=	1=	1=	1=
	88	50	1	Mean	11.7	70	60.9	31.3	61.8			61.8	1=	1=	1=	1=
POD	220	74	1**	Mean	9.9	2.1	10.6	0	12.7			12.7	1=	1=	1=	1=
	88	50	1	Mean	13.9	56.2	55	52.2	35.7			35.7	1=	1=	1=	1=
	88-220	50-74	2	Mean	11.9	29.2	32.8	26.1	24.2			24.2	2=	2=	2=	2=
				Min	9.9	**2.1**	**10.6**	0	12.7			12.7				
				Max	13.9	**56.2**	**55**	52.2	35.7			35.7				
STEM	160	14	1**	Mean	6.2	63.6	61.8	24.6	66.3			66.3	1>	1=	1>	1=

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250-275 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.63 l/ha 173 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.63-0.7 l/ha 173-175 g ai/ha**	**CA2702**	**PTZ**	**CA2702**	**PTZ**
STEM	88-229	14-83	4	*Mean*	*13.7*	***56.6***	***54.1***	*31.9*	*56.8*			*56.8*	4=	4=	4=	4=
				Min	5.2	**33.8**	**47.4**	7.3	27.2			27.2				
				Max	27.9	**78.2**	**63**	56.5	85.5			85.5				
	88-95	50-57	2***	*Mean*	*16.6*	*42*	*49*	*21.8*	*34.1*			*34.1*	2=	2=	2=	2=
				Min	5.2	33.8	47.4	7.3	27.2			27.2				
				Max	27.9	50.3	50.5	36.4	41.1			41.1				
	195-229	60-83	2**	*Mean*	*10.9*	*71.2*	*59.2*	*41.9*	*79.5*			*79.5*	2=	2=	2=	2=
				Min	6.5	64.3	55.4	27.3	73.5			73.5				
				Max	15.3	78.2	63	56.5	85.5			85.5				

[a] UTC: % infestation in untreated control at assessment date
**Trials where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy where the first application was conducted in autumn and the second application was conducted in spring.

<u>After one spring application of CA3642 applied at 1.0-1.2 L/ha</u>
At 21-37 DA-A across 5 trials, efficacy of 23 % and 22 % was observed on the leaves after one spring application of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 4 trials and significantly more effective in 1 trial, and statistically comparable to prothioconazole reference standards in all 5 trials.
At later timings 37-46 DA-A across 3 trials, efficacy had increased to 47 % and 41 % on the leaves at 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and all prothioconazole reference standards in all 3 trials.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At an early timing (20-23 DA-B) on the leaves across 4 trials, efficacy of 43 % was observed after two spring applications of both 1.0 L and 1.2 L/ha CA3642. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 where applied in of the 2 trials and Proline where applied in 2 of the trials. The efficacy of the higher 1.2 L/ha rate of CA3642 was statistically comparable to CA2702 in all 4 trials while the lower 1.0 L/ha rate was statistically comparable in 3 trials and significantly more effective in 1 trial.
At a later timing (50 DA-B) in 1 trial, efficacy of 61 % and 70 % was observed on the leaves after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445.

On the pods at 50 DA-B in 1 trial, efficacy of 55 % and 56 % was observed on the leaves after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445.

At 50-57 DA-B across 2 trials, efficacy of 49 % and 42 % was observed on the stems after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in both trials.

<u>After one autumn application of CA3642 applied at 1.0-1.2 L/ha</u>
At 135-146 DA-A across 2 trials, efficacy of 34 % and 43 % was observed on the leaves after one autumn application of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in both trials.

<u>After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring</u>
At early timings (14-21 DA-B) across 2 trials, 48 % and 42 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in both trials.
At a later timing (42 DA-B) in 1 trial, efficacy of 27 % and 37 % was observed on the leaves after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445.

On the pods at 74 DA-B in 1 trial, efficacy of 11 % and 2 % was observed after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445

On the stems at 14 DA-B in 1 trial, 62 % and 64 % efficacy was observed for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 and significantly more effective than CA2702.
At later timings (60-83 DA-B) across 2 trials, 59 % and 71 % efficacy was observed for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in both trials.

Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in 11 of the 17 data sets.

Both rates of CA3642 significantly reduced disease severity in 5 out of 9 data sets after 1 autumn application or 2 applications split in the autumn and spring.

In all data sets, the efficacy against PYRPBR was either comparable to, or significantly more effective than that derived from applications of the reference products according to statistical analysis.

Comments of zRMS:

7 efficacy trials were conducted to control of *Pyrenopeziza brassicae* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved insufficient effectiveness in 1-2 applications. After 1 spring application, the mean efficacy was 22-23% in early assessment and 41-47% in the later assessment on leaves. After 1 autumn application, the mean efficacy was 34-43% on leaves. In case of 2 spring applications, the moderate control was visible on leaves in the later observation (61-70%) whilst <60% on pods and stems. Also after autumn and spring applications, moderate effectiveness has been noted only on stems (59-71%). Very low results were observed on pods and leaves (2-48%). Taking into account all trials, CA3642 is not effective for control of PYRBR after 1 application in opinion of zRMS. However, cMSs are kindly asked to consider this use on national level.

BRSNW – PYRPBR – North-East EPPO zone

No data are presented - PYRPBR disease did not develop in any of the trials carried out in the North-East EPPO zone.

Comments of zRMS:

No efficacy trials were conducted to control of *Pyrenopeziza brassicae* in winter oilseed rape in the North-East EPPO climatic zone. An extrapolation is not possible. This use cannot be accepted in Poland.

BRSNW – PYRPBR – South-East EPPO zone

Two trials from the South-East EPPO zone are available to evaluate the efficacy of one or two applications of 1.0-1.2 L/ha of CA3642 against PYRPBR in winter oilseed rape. Both trials were carried out in Romania in 2021.
In the 2 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51 and the second application was done 22 days later, at BBCH 65-67.

Table 3.2-418: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against PYRPBR – valid assessments – South-East zone

Part Rated	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	CA3642 at 1.2 L/ha compared to		CA3642 at 1.0 L/ha compared to	
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	CA2702	CA2445	CA2702	CA2445
Efficacy after 1 application													
LEAF	22	-	2	*Mean*	*6.9*	*41.4*	*35.4*	*25.0*	*37.1*	2=	2=	2=	2=
				Min	5.8	38.0	32.8	24.1	32.9				
				Max	7.9	44.8	38.0	25.9	41.4				

Efficacy after 2 applications													
LEAF	42-44	20-22	2	*Mean*	*6.3*	*50.1*	*43.7*	*31.8*	*43.7*	1=	2=	2=	2=
				Min	6.2	42.2	42.2	31.3	39.1	1>			
				Max	6.4	58.1	45.2	32.3	48.4				

<u>After one spring application of CA3642 applied at 1.0-1.2 L/ha</u>
At 22 DA-A on the leaves, 35 % and 41 % efficacy was observed for 1.0 L/ha and 1.2 L/ha CA3642, respectively, across 2 trials. Performance of CA3642 applied at both dose rates was statistically comparable to CA2702 and CA2445 in both trials.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At 20-22 DA-B on the leaves, 44 % and 50 % efficacy was observed for 1.0 L/ha and 1.2 L/ha CA3642, respectively, across 2 trials. Performance of CA3642 applied at both dose rates was statistically comparable to CA2445 in both trials. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2702 and significantly more effective in 1 trial while the lower 1.0 L/ha rate was statistically comparable to CA2702 in both trials.

Overall, CA3642 applied twice at 1.0-1.2 L/ha achieved very low to low control on the leaves although CA3642 significantly reduced disease severity compared to untreated plots in all 4 data sets.

The efficacy against PYRBR was comparable to, or more effective than that derived from applications of the reference products in all data sets.

Comments of zRMS:

2 efficacy trials were conducted to control of *Pyrenopeziza brassicae* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved insufficient effectiveness after 1-2 applications. No significant differences between test and reference products were observed. Due to limited number of trials, cMSs are kindly asked to consider this use on national level.

Summary of data on PYRPBR in BRSNW

Data is presented from a total of 9 trials to evaluate the efficacy of CA3642 applied at the proposed rates of 1.0-1.2 L/ha to control PYRPBR in winter oilseed rape. In 20 of 30 trial assessments across the Maritime and South-East EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made and regardless of application timing.
No data were generated in the North-East EPPO zone.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones and the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

<u>One spring application</u>
In the Maritime EPPO zone, the mean efficacy of a single application of CA3642 at 1.0 L and 1.2 L/ha was 22-23 % on the leaves increasing to 41-47% at later timings. Disease severity ranged from 4-24 %.

In the South-East EPPO zone, the mean efficacy of a single application of CA3642 at 1.0 L and 1.2 L/ha was 44-50 % on the leaves. Disease severity was 6-8 % in the untreated control.

<u>Two spring applications</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 43 % on the

leaves at 1.0 L and 1.2 L/ha increasing to 61-70% at a later timing. Efficacy of 55-56 % was observed on the pods and 42-49 % was observed on the stems. In these trials disease severity ranged from 5 % to 28 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 44-50 % on the leaves Disease severity was 6 % in the untreated control.

One autumn application

In the Maritime EPPO zone, the mean efficacy of one autumn application of CA3642 was 34-43 % on the leaves at 1.0 L and 1.2 L/ha. In these trials disease severity ranged from 11 % to 17 %.

No data were generated in the South-East zone.

Two applications, one in autumn and one in spring

In the Maritime EPPO zone, the mean efficacy of two split-season applications of CA3642 was 42-48 % on the leaves at 1.0 L and 1.2 L/ha decreasing to 27-37 % at a later timing. Efficacy against PYRPBR on the pods was very low at 2-11% while 59-71% efficacy was observed across all timings on the stems. In these trials disease severity ranged from 6 % to 17 %.

No data were generated in the South-East zone.

Winter oilseed rape (BRSNW) – Sclerotinia stem rot (SCLESC – *Sclerotinia sclerotiorum*)

A total of 43 field trials were established between 2019 and 2021 in order to evaluate the efficacy of CA3642 for the control of SCLESC in winter oilseed rape.

Trials from the Maritime EPPO zone were carried out in France (3 trials), the Czech Republic (6 trials), Germany (8 trials) and Great Britain (1 trial).
Trials from the North-East EPPO zone were carried out in Latvia (2 trials) and Poland (14 trials).
Trials from the South-East EPPO zone were carried out in Hungary (4 trials), Romania (3 trials) and Slovakia (1 trial).

In all trials the test product CA3642 was applied 2 times at the proposed dose rates of 1.0 and 1.2 L/ha and compared to several commercial reference standards applied at the registered dose rates at the time of application. In some trials, valid efficacy assessments are available from the date of the second application or earlier. Those assessments can be considered to evaluate the efficacy of CA3642 applied at the recommended dose rate after one application.
Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

Overall, CA3642 applied at 1.0-1.2 L/ha consistently and significantly reduced disease compared to the untreated control and was comparable to, or more effective than the reference products in the majority of data sets.

BRSNW – SCLESC – Maritime EPPO zone

A total of 18 trials from the Maritime EPPO zone are available to justify the minimum effective dose of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in France (3 trials), the Czech Republic (6 trials), Germany (8 trials) and Great Britain (1 trial) between 2019 and 2021.
In 12 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 34-55 and the second application was done 18-44 days later, at BBCH 65-69.
In the other 6 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 14-19 and the second

application was done 135-208 days later, at BBCH 65-67.

Table 3.2-419: Summary – Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against SCLESC – valid assessments – Maritime zone

Part Rated	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-LINE 275 275 g/L EC	Summa-rized PTZ products 250-275 g/L EC	BIS-TRO 90 g/L EC	CA-RAMBA 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.63 l/ha 173 g ai/ha**	**0.63-0.7 l/ha 173-175 g ai/ha**	**0.6 l/ha 54 g ai/ha**	**1.5 L/ha 90 g a.i./ha**	**CA2702**	**PTZ**	**Oth-ers**	**CA2702**	**PTZ**	**Oth-ers**
Efficacy after 2 applica-tions																			
LEAF early	49-61	17-22	2	*Mean*	*8.2*	***67***	***68***	*57.1*			*69.8*			1=	2=		1=	2=	
				Min	8	**51.6**	**55.4**	56.4			55.3			1>			1>		
				Max	8.4	**82.5**	**80.6**	57.8			84.3								
			1	*Mean*	*8.4*	***51.6***	***55.4***	*57.8*		*55.3*				1=	1=		1=	1=	
			1	*Mean*	*8*	***82.5***	***80.6***	*56.4*	*84.3*					1>	1=		1>	1=	
LEAF late	59-92	35-48	3	*Mean*	*12*	***51.8***	***51***	*46*			*52.7*			2=	2=		2=	2=	
				Min	7.7	**31.8**	**29.8**	24.2			39.4			1>	1<		1>	1<	
				Max	18.8	**78.5**	**71.6**	68.4			79.2								
			2	*Mean*	*8.6*	***61.9***	***61.6***	*56.9*	*59.3*		*59.3*			2=	2=		2=	2=	
				Min	7.7	**45.2**	**51.5**	45.5	39.4		39.4								
				Max	9.5	**78.5**	**71.6**	68.4	79.2		79.2								
			1	*Mean*	*18.8*	***31.8***	***29.8***	*24.2*		*39.7*	*39.7*			1>	1<		1>	1<	
POD	78	56	1	*Mean*	*6*	***83.3***	***83.3***	*75*	*100*		*100*			1=	1=		1=	1=	
STEM	63-65	36-42	3	*Mean*	*12.8*	***84.4***	***78.8***	*75.5*	*81.7*		*81.7*			3=	3=		3=	3=	

Part Rated	**DA-A**	**DA-B**	**No. of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-LINE 275 275 g/L EC**	**Summa-rized PTZ products 250-275 g/L EC**	**BIS-TRO 90 g/L EC**	**CA-RAMBA 60 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.63 l/ha 173 g ai/ha**	**0.63-0.7 l/ha 173-175 g ai/ha**	**0.6 l/ha 54 g ai/ha**	**1.5 L/ha 90 g a.i./ha**	**CA2702**	**PTZ**	**Oth-ers**	**CA2702**	**PTZ**	**Oth-ers**
early				Min	6.3	**71.2**	**66.7**	67.4	72		72								
				Max	16.5	**96.3**	**99.4**	81.6	99.7		99.7								
STEM mid	69-229	51-83	8	*Mean*	*14*	***90***	***89.3***	*73*	*90.7*		*90.7*			7=	8=		7=	8=	
				Min	4.3	**69.8**	**61.7**	24.5	78.8		78.8			1>			1>		
				Max	26.9	**100**	**100**	100	100		100								
	69-102	51-76	5***	*Mean*	*14.5*	***87.9***	***86.9***	*66.6*	*90.9*		*90.9*			4=	5=		4=	5=	
				Min	4.3	**69.8**	**61.7**	24.5	78.8		78.8			1>			1>		
				Max	26.9	**100**	**100**	100	100		100								
	195-229	60-83	3**	*Mean*	*13.1*	***93.5***	***93.3***	*83.5*	*90.3*		*90.3*			3=	3=		3=	3=	
				Min	6.4	**90.7**	**91.9**	80.3	82.4		82.4								
				Max	18.2	**97.8**	**95.3**	85.4	95.3		95.3								
			1**	*Mean*	*14.8*	***91.9***	***91.9***	*80.3*	*95.3*		*95.3*	*53.2*		1=	1=	1=	1=	1=	1=

Part Rated	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-LINE 275 275 g/L EC	Summa-rized PTZ products 250-275 g/L EC	BIS-TRO 90 g/L EC	CA-RAMBA 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.63 l/ha 173 g ai/ha**	**0.63-0.7 l/ha 173-175 g ai/ha**	**0.6 l/ha 54 g ai/ha**	**1.5 L/ha 90 g a.i./ha**	**CA2702**	**PTZ**	**Oth-ers**	**CA2702**	**PTZ**	**Oth-ers**
STEM late	109-286	73-84	6	*Mean*	*27.8*	***74.3***	***68.1***	*64.6*	*64.3*		*64.3*			4=	5=		5=	6=	
				Min	13.9	**51.4**	**54.9**	52.3	36.2		36.2			2>	1>		1>		
				Max	53.1	**82.8**	**77.4**	79.3	76.6		76.6								
	109-112	73-77	3***	*Mean*	*27.2*	***79.2***	***68.3***	*67.6*	*72.1*		*72.1*			2=	2=		3=	3=	
				Min	13.9	**73.2**	**56.2**	52.3	66.8		66.8			1>	1>				
				Max	53.1	**82.8**	**77.4**	79.3	76.6		76.6								
	266-286	78-84	3**	*Mean*	*28.3*	***69.3***	***68***	*61.7*	*56.5*		*56.5*		*36.8*	2=	3=	1=	2=	3=	1=
				Min	23	**51.4**	**54.9**	59.8	36.2		36.2		34	1>		2>	1>		2>
				Max	32.8	**82.3**	**76.6**	62.8	70.7		70.7		41.5						

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>

At an early timing (17-22 DA-B) on the leaves across 2 trials, efficacy of 68 % and 67 % was observed after two spring applications of 1.0 L and 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to the prothioconazole reference standards in both trials. Both rates of CA3642 were statistically comparable to CA2702 in 1 trial and significantly more effective in 1 trial.

At a later timing (35-48 DA-B) across 3 trials, efficacy of 51 % and 52 % was observed on the leaves after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to the prothioconazole reference standards in 2 trials and significantly less effective in 1 trial. Both rates of CA3642 were statistically comparable to CA2702 in 2 trials and significantly more effective in 1 trial.

On the pods at 56 DA-B in 1 trial, efficacy of 83 % was observed after two spring applications of both rates of CA3642. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445.

At early timings (36-42 DA-B) across 3 trials, efficacy of 79 % and 84 % was observed on the stems after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in all 3 trials.

At later timings 51-76 DA-B across 5 trials, efficacy of 87 % and 88 % was observed on the stems after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 in all 5 trials. Both rates of CA3642 were statistically comparable to CA2702 in 4 trials and significantly more effective in 1 trial.

At the final assessment timings (73-77 DA-B) across 3 trials, efficacy of 68 % and 79 % was observed on the stems after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at the higher rate of 1.2 L/ha was statistically comparable to CA2702 and CA2445 in 2 trials and significantly more effective than CA2702 and CA2445 in 1 trial. The efficacy of CA3642 applied at the lower rate of 1.0 L/ha was statistically comparable to both CA2702 and CA2445 in all 3 trials.

<u>After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring</u>

At 60-83 DA-B across 3 trials, 93 % and 94 % efficacy was observed on the stems for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in all 3 trials, and comparable to Bistro where applied in 1 of the trials.

At later timings (78-84 DA-B) across 3 trials, efficacy of 68 % and 69 % was observed on the stems after two split-season applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 2 trials and significantly more effective in 1 trial. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 in all 3 trials. Compared to Caramba, both rates of CA642 were statistically comparable in 1 trial and significantly more effective in 2 trials.

Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in all 17 data sets.

Both rates of CA3642 significantly reduced disease severity in all 6 sets after 2 applications split in the autumn and spring.

In the majority of data sets, the efficacy against SCLESC was either comparable to, or significantly more effective than that derived from applications of the reference products according to statistical analysis.

Comments of zRMS:

18 efficacy trials were conducted to control of *Sclerotiniani sclerotiorum* in winter oilseed rape in the Maritime EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 2 applications. In case of spring applications, the mean efficacy was 83% for pod, 79-84% in early assessment and 87-88% in the later assessment on stem. The moderate control was visible on leaf (67-68% and 51-52%, in the early and later observation respectively). In case of autumn and spring applications, the test product at claimed dose rates presented results of 93-94% in the early assessment and 68-69% in the later assessment on stem. No significant differences between CA3642 and the reference products were observed in most trials. No results after 1 application were available. Due to that, cMSs are kindly asked to consider this use on national level.

BRSNW – SCLESC – North-East EPPO zone - & data for Poland

A total of 16 trials from the North-East EPPO zone were performed to test the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in Latvia (2 trials) and Poland (14 trials) between 2019 and 2021.

In 11 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 32-55 and the second application was done 21-47 days later, at BBCH 65-69. As changes to the GAP were necessary between contracting the trials and finalising the submission, leading to a restriction to only a single application, this data is no longer relevant and is therefore crossed out from this section.

In the other 5 trials, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 16-20 and the second application was done 187-210 days later, at BBCH 65-68.
In addition, in 3 trials from the Maritime EPPO zone located in Germany only a single application was made in spring. Since Polish efficacy guidance indicates that data from Germany can be supportive for the use in Poland, these trials are also considered in this section.

In the 8 trials with only one spring application, the preceding autumn application had been made 135-210 days prior to the spring application. Autumn applications (at BBCH 14-20) were made in the trials to target other diseases which infect the crop at that part of the year. As SCLESC infects oilseed rape in the spring any applications made to the crop the preceding autumn could not contact the Sclerotinia spores as they are not present at that time. Therefore the data from these trials is evidence of the efficacy of a single application of CA3642 against SCLESC.

This data is now grouped and presented in Tables 3.2-420A and 3.2-420B below for PESSEV and PESINC.

Table 3.2-420A: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against SCLESC on stem – PESSEV– North-East zone & data from Germany

Site	DA-T	No. of trials	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	Other refer-ence*	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				1.2 l/ha	**1 l/ha**	**0.7 l/ha**	**0.7 l/ha**		**CA2702**	**PTZ**	**Others**	**CA2702**	**PTZ**	**Others**
Early assessment (15-16 DAT)														
PL	15-16	3	*4.0* *(0.9-10.2)*	**98.5** (95.6-100)	**94.7** (84-100)	94.7 (84.2-100)	97.5 (92.6-100)	96.7 (90.1-100)	1>, 2=	3=	3=	3=	3=	3=
Final assessment (34-84 DAT)														
PL	34-62	5	*14.8* *(9-24.1)*	**78.4** (71.9-91.9)	**64.5** (57.6-73.3)	53.7 (30.7-73.5)	77.6 (65.7-85.3)	70.8 (55.7-84.9)	4>, 1=	5=	1>, 4=	2>, 3=	3=, 2<	3=, 2<
DE	78-84	3	*28.3* *(23-32.8)*	**69.3** (51.43-82.34)	**68.0** (54.86-76.63)	61.8 (59.78-62.8)	56.5 (36.19-70.65)	36.8 (33.97-41.52)	1>, 2=	3=	2 >, 1=	3=	3=	2 >, 1=
All	34-84	8	*19.8*	**75.0**	**65.8**	56.7	69.7	58.0	5>, 3=	8=	3>, 5=	2>, 6=	6=, 2<	2>, 4=, 2<

Table 3.2-421B: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against SCLESC on stem – PESINC– North-East zone & data from Germany

Site	DA-T	No. of trials	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	Other refer-ence*	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				1.2 l/ha	**1 l/ha**	**0.7 l/ha**	**0.7 l/ha**		**CA2702**	**PTZ**	**Others**	**CA2702**	**PTZ**	**Others**
Early assessment (15-16 DAT)														
PL	15-16	3	*17.3* *(10-32)*	**95.8** (87.5-100)	**89.6** (68.8-100)	90.6 (71.8-100)	94.8 (84.4-100)	93.8 (81.3-100)	1>, 2=	3=	3=	3=	2=, 1<	2=, 1<
Final assessment (34-84 DAT)														
PL	34-62	5	43.8 (22-71)	**68.5** (45.5-84.5)	**50.0** (29.6-66.1)	40.7 (9.1-67.9)	67.2 (45.5-81.4)	58.8 (40.9-71.8)	3>, 2=	1>, 4=	2>, 3=	5=	2=, 3<	3=, 2<
DE	78-84	3	56.9 (47-71.7)	**61.4** (51-75)	**58.1** (50-66.0)	53.0 (48.4-60.6	46.0 (30.8-61.7)	17.9 (0-40.4)	1>, 2=	1>, 2=	2>, 1=	3=	1>, 2=	2>, 1=
All	34-84	8	48.7	**65.8**	**53.0**	45.3	59.3	43.5	4>, 4=	2>, 6=	4>, 4=	8=	1>, 4=, 3<	2>, 4=, 2<

*Orius Extra @ 1.0 L/ha in Polish trials, Caramba at 1.5 L/ha in German trials

Table 3.2-422: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against SCLESC – valid assessments – North-East zone

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROSARO 250 g/L EC	ORIUS EXTRA 250 g/L EW	CARAMBA 60 SL 60 g/L SL	YAMATO 303 SE 303 g/L SE	PLEXEO 60 EC 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 60 g ai/ha	1.5 l/ha 455 g ai/ha	1 l/ha 60 g ai/ha	CA2702	PTZ	Others	CA2702	PTZ	Others
Efficacy after 2 applications			-	-	-	-	-	-	-	-	-	-	-	-						
POD	74-83	47-54	2	*Mean*	*9.6*	*93.5*	*83.1*	*72.5*	-	-	-	-	-	-	1=			1=		
-	-		-	Min	7.9	92	77.7	50	-	-	-	-	-	-	1>			1>		
-	-		-	Max	11.2	94.9	88.6	94.9	-	-	-	-	-	-						
-	-		1	*Mean*	*7.9*	*94.9*	*88.6*	*94.9*	*96.2*	-	-	*93.7*	-	-	1=	1=	1=	1=	1=	1=
-	-		1	*Mean*	*11.2*	*92*	*77.7*	*50*	-	-	-	-	-	*75*	1>		1>	1>		1=
Efficacy after 2 applications														-						
STEM	42-226	16-21	3	*Mean*	*8.2*	*91.1*	*83.5*	*84.7*	*87.3*	-	-	-	-	-	2=	3=		3=	3=	
-	-		-	Min	6.6	87.2	78.2	82.1	83.3	-	-	-	-	-	1>					
-	-		-	Max	10.2	95.1	87.9	87.9	92.2	-	-	-	-	-						
-	42-50	21	2***	*Mean*	*7.2*	*89*	*83*	*85*	*84.8*	-	-	*91.1*	-	-	2=	2=	2=	2=	2=	2=
-	-		-	Min	6.6	87.2	78.2	82.1	83.3	-	-	89.7	-	-						
-	-		-	Max	7.8	90.9	87.9	87.9	86.4	-	-	92.4	-	-						
-	226	16	1**	*Mean*	*10.2*	*95.1*	*84.3*	*84.3*	*92.2*	-	*90.2*	-	-	-	1>	1=	1=	1=	1=	1=

Part Rated	DA-A	DA-B	No. of trials	Name Conc e Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROSARO 250 g/L EC	ORIUS EXTRA 250 g/L EW	CARAMBA 60 SL 60 g/L SL	YAMATO 303 SE 303 g/L SE	PLEXEO 60 EC 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 60 g ai/ha	1.5 l/ha 455 g ai/ha	1 l/ha 60 g ai/ha	CA2702	PTZ	Others	CA2702	PTZ	Others
Efficacy after 2 applications														-						
STEM	80-239	33-38	3	*Mean*	*12.4*	*70.3*	*64.3*	*30.9*	-	-	-	-	-	-	1=			1=		
			-	Min	9	65.9	45.7	25.6	-	-	-	-	-	-	2>			2>		
			-	Max	15.3	78.4	88.2	35.9	-	-	-	-	-	-						
	80-84	33-38	2***	*Mean*	*14.1*	*72.2*	*67*	*30.8*	-	-	-	52.1	-	-	1=		2=	1=		2=
			-	Min	12.9	65.9	45.7	25.6	-	-	-	44.4	-	-	1>			1>		
			-	Max	15.3	78.4	88.2	35.9	-	-	-	59.7	-	-						
	239	34	1**	*Mean*	*9*	*66.7*	*58.9*	*31.1*	*72.2*	-	*68.9*			-	1>	1=	1=	1>	1=	1=

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-SARO 250 g/L EC	ORIUS EXTRA 250 g/L EW	CARAMBA 60 SL 60 g/L SL	YAMATO 303 SE 303 g/L SE	PLEXEO 60 EC 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 60 g ai/ha	1.5 l/ha 455 g ai/ha	1 l/ha 60 g ai/ha	CA2702	PTZ	Others	CA2702	PTZ	Others
Efficacy after 2 applications														-						
STEM	76-271	47-62	12	*Mean*	*14.9*	*87.9*	*80.5*	*65.7*	-	-	-	-	-	-	5=			8=		
-	-		-	Min	5	71.4	57.1	20	-	-	-	-	-	-	7>			4>		
-	-		-	Max	24.1	98	96.5	97.4	-	-	-	-	-	-						
-	76-86	47-56	8***	*Mean*	*14.2*	*91.3*	*87.9*	*68.9*	-	-	-	-	-	-	4=			5=		
-	-		-	Min	5	85.5	77.9	20	-	-	-	-	-	-	4>			3>		
-	-		-	Max	23.1	98	96.5	97.4	-	-	-	-	-	-						
-	-		5***	*Mean*	*10.7*	*91.2*	*86.2*	*66.9*	*92.4*	-	-	-	-	-	2=	5=		3=	5=	
-	-		-	Min	5	85.5	77.9	20	82.4	-	-	-	-	-	3>			2>		
-	-		-	Max	23.1	98	91.3	92.2	100	-	-	-	-	-						
-	-		2***	*Mean*	5.3	*91.7*	*87.7*	*56*		*99*	-	-	-	-	1= 1>	2=		1= 1>	2=	
-	-		-	Min	5	85.5	85.5	20		98	-	-	-	-						
-	-		-	Max	5.5	98	90	92		100	-	-	-	-						
-	-		3***	*Mean*	*14.4*	*90.8*	*85.2*	*74.2*	*89.2*	-	-	*85.1*	-	-	1=	3=	2=	2=	3=	2=
-	-		-	Min	5.1	89.3	77.9	57.7	82.4	-	-	68.6	-	-	2>		1>	1>		1>
-	-		-	Max	23.1	93.1	91.3	92.2	97.4	-	-	93.9	-	-						

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROSARO 250 g/L EC	ORIUS EXTRA 250 g/L EW	CARAMBA 60 SL 60 g/L SL	YAMATO 303 SE 303 g/L SE	PLEXEO 60 EC 60 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 60 g ai/ha	1.5 l/ha 455 g ai/ha	1 l/ha 60 g ai/ha	CA2702	PTZ	Others	CA2702	PTZ	Others
			2***	*Mean*	*18.4*	*90.2*	*87.8*	*59.7*	-	-	-	-	*85.3*	-	1=		2=	1=		2=
			-	Min	16.5	87.6	80.6	41.2	-	-	-	-	85.1	-	1>			1>		
			-	Max	20.2	92.7	95	78.2	-	-	-	-	85.5	-						
			1***	*Mean*	*23.1*	*93.9*	*96.5*	*97.4*	-	-	-	-	-	*97.8*	1=		1=	1=		1=
	237-271	50-62	4**	*Mean*	*16.2*	*81*	*65.7*	*59.2*	*78.8*	-	*71*	-	-	-	1=	4=	3=	3=	2=	2=
	-		-	Min	10.5	71.4	57.1	41.9	65.7	-	55.2	-	-	-	3>		1>	1>	2<	2<
			-	Max	24.1	91.7	73.3	73.3	85.1	-	84.6	-	-	-						

**Trial where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy across trials, excluding trial where the first application was conducted in autumn and the second application was conducted in spring.

Results following a single spring application of CA3642 for control of SCLESC

Eight trials are available to assess the efficacy of a spring application for control of SCLESC in oilseed rape – five from Poland and three from Germany. Assessments were made of the severity and incidence of SCLESC on the stems following a spring application.
In all trials assessments were made at 15-16 DAT, however no SCLESC symptoms were observed at this time in any of the German trials or in 2 of the Polish trials. Hence, only 3 trials provide data at this assessment timing, all of which were from Poland.
In these 3 trials with early assessments, very good control of SCLESC was observed at 98.5-94.7% for PESSEV and 95.8-89.6% for PESINC for the rates of 1.2 L/ha and 1.0 L/ha respectively of CA3642.
In terms of severity both rates of CA2642 were at least statistically comparable to other tested products and the higher rate gave significantly higher control compared to azoxystrobin (CA2702). Incidence was also reduced significantly more from 1.2 L/ha of CA3642, compared to azoxystrobin. In one of the trials the reduction in incidence was lower from applications of CA3642 at 1.0 L/ha compared to CA2445 or Orius Extra (tebuconazole). In the other trials there were no significant differences.

Final assessments of SCLESC were made at 34-62 DAT in 5 Polish trials and at 78-84 DAT in 3 German trials as presented in the Tables above.
In 5 trials from Poland the severity of SCLESC on stems in untreated plots averaged 14.8% with a range of 9.0-24.1%. This was significantly reduced from applications of CA3642 by 78.4% and 64.5% at 1.2 & 1.0 L/ha respectively. This compared well with results from other products which gave 53.7-77.6% control. Efficacy of CA3642 at 1.2 L/ha was significantly higher than, or comparable to other products in all trials, and when applied at 1.0 L/ha was generally comparable, sometimes higher and sometimes lower than other products.
Incidence of SCLESC on stems was also assessed in these 5 Polish trials, with mean infestation in untreated plots of 43.8% (range 22-71%). Applications of CA3642 at 1.2 L/ha and 1.0 L/ha reduced incidence by 68.5% and 50.0% respectively. Mean reductions from applications of other products were 40.7-67.2%. CA3642 applied at 1.2 L/ha frequently gave significantly higher control compared to other products, whilst 1.0 L/ha applications were more comparable to the reference products or lower.

In 3 trials from Germany, the severity of SCLESC on stems in untreated plots averaged 28.3% with a range of 23.0-32.8%. This was significantly reduced from applications of CA3642 by 69.3% and 68.0% at 1.2 & 1.0 L/ha respectively. The mean values of reference products were comparatively lower at 36.8-61.8%, and the differences were frequently statistically significant, in particular compared to Caramba (metconazole).
Incidence of SCLESC on stems was also assessed in these German trials, with mean infestation in untreated plots of 56.9% (range 47-71.7%). Applications of CA3642 at 1.2 L/ha and 1.0 L/ha reduced incidence by 61.4% and 58.1% respectively. Mean reductions from applications of other products were 43.5-59.3%. CA3642 applied at either 1.2 or 1.0 L/ha frequently gave significantly higher control compared to other products.

Combining the data from all 8 trials, results in final severity reductions of 75.0% for CA3642 applied at 1.2 L/ha and 65.8% applied at 1.0 L/ha. Reference products gave overall lower efficacy at 56.7%, 58% and 69.7%. Similarly for disease incidence, CA3642 gave final reductions of 65.8% and 53.0%, compared to 45.3%, 59.3% and 43.5% for reference products

In summary, a single application of CA3642 made in spring at BBCH 64-69 to target Sclerotinia infection on oilseed rape, significantly reduced both disease severity and incidence when applied at 1.2 or 1.0 L/ha. Very high reductions were observed 2 weeks after application and significant control was observed up to harvest 2-3 months later. CA3642 applied at 1.2 or 1.0 L/ha gave overall equivalent or higher efficacy compared to authorised reference products containing azoxystrobin, prothioconazole, metconazole or tebuconazole. In cases of high disease pressure, the rate of 1.2 L/ha is recommended for optimum disease reduction.

~~After two spring applications of CA3642 applied at 1.0-1.2 L/ha~~

~~At an early timing (21 DA-B) across 2 trials carried out in the North-East EPPO zone, 83 % and 89 % efficacy was observed on the stems following two spring applications of CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 and Caramba in both trials.~~

~~At later timings (33-38 DA-B) across 2 trials, 67 % and 72 % efficacy was observed on the stems following two spring applications of CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 in 1 trial and significantly more effective in 1 trial, and both rates were statistically comparable to Caramba in the 2 trials.~~

~~At even later timings (47-56 DA-B) across 8 trials on the stems, 88 % and 91 % efficacy was observed on the stems following two spring applications of CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2702 in 4 trials and significantly more effective in 4 trials while the lower rate of CA3642 was statistically comparable to CA2702 in 5 trials and significantly more effective in 3 trials. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 in all 5 trials where applied, and to Prosaro where applied in 2 trials, and to Yamato in 2 trials, and to Plexeo in 1 trial. Compared to Caramba where applied in 3 trials, CA3642 was statistically comparable in 2 trials and significantly more effective in 1 trial.~~

~~On the pods at 47-54 DA-B across 2 trials, 83 % and 94 % efficacy was observed following two spring applications of CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2702 in 1 trial and significantly more effective in 1 trial. Both rates of CA3642 were statistically comparable to Caramba where applied in 1 trial and significantly more effective than Plexeo where applied in the other trial.~~

~~After two applications of CA3642 applied at 1.0-1.2 L/ha, one in autumn and one in spring~~

~~At an early timing (16 DA-B) in 1 trial, efficacy of 84 % and 95 % was observed on the stems for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was statistically comparable to CA2445 and Orius Extra. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was significantly more effective than CA2702 in 1 trial while the lower 1.0 L/ha rate was statistically comparable to CA2702.~~

~~At a later timing (34 DA-B) in 1 trial, efficacy of 59 % and 67 % was observed on the stems for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at both 1.0 L and 1.2 L/ha was significantly more effective than CA2702 and statistically comparable to CA2445 and Orius Extra.~~

~~At even later timings (50-62 DA-B) in 4 trials, efficacy of 66 % and 81 % was observed on the stems for CA3642 at 1.0 L and 1.2 L/ha, respectively. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was significantly more effective than CA2702 in 3 trials and statistically comparable in 1 trial, statistically comparable to CA2445 in all 4 trials, and statistically comparable to Orius Extra in 3 trials being significantly more effective in 1 trial. The efficacy of CA3642 applied at the lower 1.0 L/ha rate was significantly more effective than CA2702 in 1 trial and statistically comparable in 3 trials, statistically comparable to CA2445 in 2 trials and significantly less effective in 2 trials, and statistically comparable to Orius Extra in 2 trials being significantly less effective in 2 trials.~~

~~Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in all 14 data sets.~~

~~Both rates of CA3642 significantly reduced disease severity in all 6 data sets after 2 applications split in the autumn and spring.~~

~~The efficacy against SCLESC was comparable to, or more effective than that derived from applica-~~

~~tions of the reference products in the majority of data sets according to statistical analysis.~~

Comments of zRMS:

~~16 efficacy trials were conducted to control of *Sclerotinia sclerotiorum* in winter oilseed rape in the North-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved good effectiveness after 2 applications. In case of spring applications, the mean efficacy was 83-94% on pod and 83-89% (the early assessment), 67-72% (the later assessment), 88-91% (the even later assessment) on leaves. In case of autumn and spring applications, good level of control was visible in the early observation on stem (84-95%). Moderate effectiveness has been noted in the later and even later assessments. No significant differences between CA2445 or other references and CA3642 were visible whilst CA2702 was slight inferior. No results after 1 application were available. Due to that this use cannot be accepted in Poland.~~

A total of 8 efficacy trials were conducted to control *Sclerotinia sclerotiorum* in winter oilseed rape in the North-East EPPO climatic zone and in a neighboring country (Germany). The zRMS accepted the applicant's explanations regarding the interval between two treatments in the submitted trials and only the results obtained after spring application will be taken into account in the evaluation. The early assessments presents good control of CA3642 at dose rate of 1,0 (94,7%) and 1,2 l/ha (98,5%) against SCLESC in 3 out of 8 trials. As the applicant mentioned, no SCLESC symptoms were observed at this time in any of the German trials or in 2 of the Polish trials. Moreover, the average PESSEV on untreated stems was only 4% in the included results. The test product at claimed doses achieved moderate control in both NE and DE trials in the final assessment. The efficacy of CA3642 at 1,0 l/ha was 65,8% and a comparable effect was observed for the reference products in most trials. Higher dose rate of 1,2 l/ha achieved slight superior control of 75%. Based on the average pest severity of 19,8% on untreated stems, the test product showed medium effectiveness in later assessments (34-84 days after treatment). In summary, a single application of CA3642 in spring at dose rates of 1,0 and 1,2 l/ha is sufficient to control SCLESC in winter oilseed rape in Poland but it should be noted on the product label that this is at a medium level.

BRSNW – SCLESC – South-East EPPO zone

Nine trials from the South-East EPPO zone are available to evaluate the efficacy of two applications of 1.0-1.2 L/ha of CA3642 against SCLESC in winter oilseed rape. The trials were carried out in Hungary (4 trials), Romania (3 trials) and Slovakia (1 trial) in 2019 or 2020.
In 8 trials, both applications were conducted in the spring. The first application took place at crop stage BBCH 51-55 and the second application was done 12-38 days later, at BBCH 65-67.
In the other trial, the first application was conducted in the autumn and the second application was conducted in the spring; the first application took place at crop stage BBCH 18 and the second application was done 185 days later, at BBCH 65.

Table 3.2-423: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW against SCLESC – valid assessments – South-East zone

Part Rated	DA-A	DA-B	No. of tri-als	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	PTZ	Oth-ers	CA2702	PTZ	Oth-ers
Efficacy after 1 application																		
LEAF	21	-	2	*Mean*	*11*	***86***	***81.8***	*81.3*	*91.7*				1=	1=		2=	1=	
				Min	9.4	**80**	**75.2**	70.4	90.7				1>	1<			1<	
				Max	12.5	**92**	**88.4**	92.3	92.8									
Efficacy after 2 applications																		
LEAF	42-59	21	3	*Mean*	*15.3*	***86.1***	***80.7***	*71.8*	*86.9*				1=	3=		1=	2=	
				Min	7.1	**79.8**	**73**	54.8	80.2				2>			2>	1<	
				Max	19.4	**96.8**	**91.8**	94.6	97.6									
LEAF	60-63	36-39	3	*Mean*	*18.7*	***69.6***	***72.2***	*58.4*					1=			1=		
				Min	13.3	**57.9**	**71**	56.1					2>			2>		
				Max	21.4	**75.7**	**73.4**	59.8	75.9									
			2	*Mean*	*21.4*	***75.5***	***72.2***	*57.9*	*75.9*				2>	2=		2>	2=	
				Min	21.4	**75.2**	**71**	56.1	75.7									
				Max	21.4	**75.7**	**73.4**	59.8	76.2									
			1	*Mean*	*13.3*	***57.9***	***72.2***	*59.4*		*51.9*			1=		1=	1=		1=
Efficacy after 2 applications																		
POD	60-70	39-50	5	*Mean*	*14.5*	***78.1***	***76.1***	*70.3*					3=			3=		
				Min	5.3	**43**	**47**	51.8					2>			2>		
				Max	33	**96.3**	**96.2**	94.3										
			3	*Mean*	*5.4*	***93.3***	***90.9***	*78.3*	*89.8*				1=	3=		1=	3=	

Part Rated	DA-A	DA-B	No. of tri-als	Name Conc Type	UT Ca	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha	0.75 l/ha 187 g ai/ha	CA2702	PTZ	Oth-ers	CA2702	PTZ	Oth-ers
				n Min Max	 5.3 5.6	 **87.5** **96.3**	 **82.1** **96.2**	 51.8 94.3	 73.2 98.1				2>			2>		
			2	*Mean* Min Max	*28.2* 23.4 33	***55.3*** **43** **67.6**	***53.9*** **47** **60.8**	*58.1* 57.2 59.1		*57.1* 47.6 66.6			2=		2=	2=		2=
			1	*Mean*	*5.6*	***87.5***	***82.1***	*51.8*				*80.4*	1>	1=		1>	1=	
Efficacy after 2 applications																		
ROOT	60-80	39-42	3	*Mean* Min Max	*5.1* 4.9 5.2	***99.3*** **97.8** **100**	***98.4*** **95.1** **100**	*97.6* 92.9 100	*99.3* 98 100				3=	3=		3=	3=	

Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC[a]	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	TIL-MOR 240 g/L EC	Prosaro 250 EC 250 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**	**0.75 l/ha 187 g ai/ha**	**CA2702**	**PTZ**	**Others**	**CA2702**	**PTZ**	**Others**
Efficacy after 2 applications																		
STEM	42-59	21	3	*Mean*	*9.8*	***90.5***	***82.3***	*73.8*	*94.4*				1=	2=		2=	1=	
				Min	6.8	**86.1**	**68.3**	60.5	92.6				2>	1<		1>	2<	
				Max	12.9	**97.6**	**92.7**	95.8	97.5									
STEM	60-232	39-57	6	*Mean*	*16*	***78.9***	***81.4***	*60.3*					3=			4=		
				Min	5.6	**55.5**	**75**	25.1					3>			2>		
				Max	33.4	**92.9**	**87.5**	86.5										
	60-81	39-57	5***	*Mean*	*12.5*	***77.4***	***80.6***	*55.0*					2=			3=		
				Min	*5.6*	***55.5***	***75.0***	*25.1*					3>			2>		
				Max	*24.7*	***92.9***	***87.5***	*69.3*										
			4***	*Mean*	*9.5*	***82.9***	***81***	*62.5*	*76.5*				1=	4=		2=	2=	
				Min	5.6	**78.7**	**75**	52.2	65.4				2>			2>	2<	
				Max	12.7	**92.9**	**87.5**	69.3	81.7									
			2***	*Mean*	*18.7*	***67.1***	***80.8***	*47.2*		*71.1*			2=		2=	2=		2=
				Min	12.7	**55.5**	**78.9**	25.1		66.9								
				Max	24.7	**78.7**	**82.7**	69.3		75.3								
			1***	*Mean*	*5.6*	***92.9***	***87.5***	*67.9*				*87.5*	1>	1=		1=	1=	
	232	47	1**	*Mean*	*33.4*	***86.2***	***85.6***	*86.5*	*91*		*86.5*		1=	1=	1=	1=	1=	1=

[a] UTC: % infestation in untreated control at assessment date
**Trial where the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding trial where the first application was conducted in autumn and the second application was conducted in spring

<u>After one spring application of CA3642 applied at 1.0-1.2 L/ha</u>
At early timings (21 DA-B) across 2 trials, 82 % and 86 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2445 in 1 trial and significantly less effective in 1 trial. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2702 in 1 trial and significantly more effective in 1 trial while the lower 1.0 L/ha rate was statistically comparable with CA2702 in both trials.

<u>After two spring applications of CA3642 applied at 1.0-1.2 L/ha</u>
At early timings (21 DA-B) across 3 trials, 81% and 86 % efficacy was observed on the leaves for the 1.0 L and 1.2 L rates of CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 1 of the trials and significantly more effective than CA2702 in 2 trials. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2445 in all 3 trials while the lower 1.0 L/ha rate was statistically comparable with CA2445 in 2 trials and significantly less effective in 1 trial.
At later assessment dates (36-39 DA-B) across 3 trials, efficacy of 72 % and 70 % was observed on the leaves after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials. Both rates of CA3642 were statistically comparable to CA2445 where applied in 2 trials and to Propulse where applied in 1 trial.

At 39-50 DA-B across 5 trials on the pods, efficacy of 76 % and 78 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of both rates of CA3642 were statistically comparable to CA2702 in 3 trials and significantly more effective in 2 trials. Both rates of CA3642 were statistically comparable to CA2445 where applied in 3 trials, and to Propulse where applied in 2 trials, and to Prosaro where applied in 1 trial.

At 39-42 DA-B on the roots, efficacy of 98 % and 99 % was observed after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively, across 3 trials. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702 and CA2445 in all 3 trials.

At an early timing 21 DA-B across 3 trials, efficacy of 82 % and 91 % was observed on the stems after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2702 in 1 trial and significantly more effective in 2 trials, and was statistically comparable to CA2445 in 2 trials being significantly less effective than CA2445 in 1 trial. The efficacy of CA3642 applied at the lower 1.0 L/ha rate was statistically comparable to CA2702 in 2 trials and significantly more effective in 1 trial, and was statistically comparable to CA2445 in 1 trial being significantly less effective than CA2445 in 2 trials.
At later timings (39-57 DA-B) across 5 trials, efficacy of 81 % and 77 % was observed on the stems after two spring applications of 1.0 L or 1.2 L/ha CA3642, respectively. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2702 in 2 trials and significantly more effective in 3 trials, while the lower 1.0 L/ha rate was statistically comparable to CA2702 in 3 trials being significantly more effective than CA2702 in 2 trials. The efficacy of CA3642 applied at the higher 1.2 L/ha rate was statistically comparable to CA2445 in all 4 trials where applied while the lower 1.0 L/ha rate was statistically comparable to CA2445 in 2 trials being significantly less effective than CA2445 in 2 trials. Both rates of CA3642 were statistically comparable to Propulse where applied in 2 trials and to Prosaro where applied in 1 trial.

<u>After two applications of CA3642 applied at 1.0-1.2 L/ha, autumn and spring</u>
At 47 DA-B in 1 trial, efficacy of 86 % was observed on the stems after two split-season applications of both 1.0 L and 1.2 L/ha CA3642. The efficacy of CA3642 applied at both rates was statistically comparable to CA2702, CA2445 and Tilmor.

Following 2 spring applications, CA3642 applied at both rates of 1.0 L and 1.2 L/ha significantly reduced disease severity compared to untreated plots in all 24 data sets.
Both rates of CA3642 significantly reduced disease severity in the 1 data set after 2 applications split in the autumn and spring.

The efficacy against SCLESC was either comparable to, or significantly more effective than that derived from applications of the reference products in the majority of data sets according to statistical analysis, with substantial benefits compared to azoxystrobin alone particularly on the stems.

Comments of zRMS:

9 efficacy trials were conducted to control of *Sclerotinia sclerotiorum* in winter oilseed rape in the South-East EPPO climatic zone. CA3642 at 1-1,2 l/ha achieved moderate to high effectiveness after 1-2 applications. The mean efficacy was 82-86% after 1 spring application. In case of two spring applications, the test product presented results of 82-91% in the early assessment and 77-81% in the later assessment on stem. High control was visible on root (98-99%) and moderate on pod (76-78%) and leaf in the later observation (70-72%). CA3642 at claimed dose rates achieved efficacy of 86% after autumn and spring applications. CA2445 had similar effect compared to the test product whilst CA2702 was slight inferior in some trials.
Based on the above summary, CA3642 at 1-1,2 l/ha in 1 spring applications is effective for control of SCLESC in winter oilseed rape in the SE zone. The dose rate of 1,2 l/ha may be recommended at higher disease pressure.

Summary of data on SCLESC in BRSNW

Data is presented from a total of 43 trials to evaluate the efficacy of CA3642 applied at the proposed rates of 1.0-1.2 L/ha to control SCLESC in winter oilseed rape. In all 62 trial assessments across all EPPO zones applications of CA3642 significantly reduced disease severity compared to the untreated control. This was observed where either a single application or two applications were made and regardless of application timing.

The efficacy obtained from applications of CA3642 was overall comparable to, or more effective than that observed from applications of the reference products across the EPPO zones and the data indicates that CA3642 gives substantially better control compared to azoxystrobin alone.

<u>One spring application</u>
No data were generated in the Maritime or North-East EPPO zones.

In the South-East EPPO zone, the mean efficacy of one spring application of CA3642 was 82-86 % on the leaves at 1.0 L and 1.2 L/ha. Disease severity was 9-13% in these trials.

<u>Two spring applications</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 67-68 % on the leaves at 1.0 L and 1.2 L/ha decreasing to 51-52 % at later timings. On the pods, efficacy was 83 % and on the stems efficacy was 79-84 % increasing to 87-88 % at later timings with 68-79% at the final assessment timings. In these trials disease severity ranged from 4 % to 53 %.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 83-89 % on the stems at 1.0 L and 1.2 L/ha, with efficacy of 67-72 % at later timings and 88-91% at even later timings. On the pods, efficacy was 83-94 %. In these trials disease severity ranged from 7 % to 23 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 81-86 % on the leaves at 1.0 L and 1.2 L/ha, decreasing to 72-70 % efficacy at later timings. Two spring applications provided 76-78 % efficacy on the pods, 98-99 % efficacy on the roots and 77-91% efficacy on the stems. Disease severity ranged between 5-33%.

<u>One application in the autumn</u>

No data were generated.

Two applications, one in autumn and one in spring
No data were generated in the Maritime EPPO zone.

In the North-East EPPO zone, the mean efficacy of two split-season applications of CA3642 was 84-95 % on the stems at 1.0 L and 1.2 L/ha, with efficacy of 59-67 % at later timings and 66-81% at even later timings. In these trials disease severity ranged from 9 % to 24 %.

In the South-East EPPO zone, the mean efficacy of two split-season applications of CA3642 was 86 % on the stems at 1.0 L and 1.2 L/ha at a disease severity of 33 %.

Winter oilseed rape (BRSNW) – Green leaf area

A total of 20 trials are available to justify the minimum effective dose of CA3642 applied up to two times in winter oilseed rape, assessed in terms of green leaf area. Trials were carried out in the Maritime EPPO zone in France (3 trials), Great Britain (1 trial) and Germany (1 trial), in the North-East EPPO zone in Poland (6 trials) and in the South-East EPPO zone in Hungary (5 trials) and Romania (4 trials), all in 2020.

BRSNW – Green leaf area – Maritime EPPO zone

In a total of 5 trials from the Maritime EPPO zone, the efficacy of CA3642 applied two times at dose rates of 1.2 L and 1.0 L/ha was assessed in terms of green leaf area. Trials from the Maritime EPPO zone were carried out in France (3 trials), Great Britain (1 trial) and Germany (1 trial) in 2020 or 2021. In two of the trials, both applications were conducted in the spring, in the other three trials the first application was conducted in the autumn and the second application was conducted in the spring.

After two spring applications
Efficacy in terms of green leaf area was assessed on the pod and stem in 1 trial or on the stem in the other trial. There were three pathogens present in 1 of the trials, and one pathogen present in the other trial.
After two applications of CA3642 at 1.2 L/ha, the mean green leaf area increased by ~~246~~ 146% compared to the untreated control, and there was a very similar increase of 144% after two applications at 1.0 L/ha. Both rates of CA3642 gave a statistically comparable increase to that of CA2702 in 2 data sets and gave a significantly higher increase in GLA in 1 data set. Both rates of CA3642 were statistically comparable to CA2445 where applied in 2 data sets, and both rates gave significantly higher increases compared to Pecari in 1 data set.

After two applications, one in autumn and one in spring
Efficacy in terms of green leaf area was assessed on the plant in all 3 trials. There were two pathogens present in 1 of the trials, and one pathogen present in 2 of the trials.
Across 3 trials, green leaf area on the plant increased by 38 % and 52% at the 1.2 L and 1.0 L/ha rates of CA3642, respectively. Both rates of CA3642 gave GAL increases that were statistically comparable to those given by both CA2702 and CA2445 in all 3 trials, and to Bistro where applied in 1 trial.

Overall, the increase of GLA induced by CA3642 applied at both rates at all timings was statistically significant compared to the untreated control in 2 of the 6 data sets.

There is a clear benefit to green leaf area persistence following the application of CA3642 in winter oilseed rape in the Maritime EPPO zone.

Table 3.2-424: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW assessed as green leaf area – valid assessments – Maritime EPPO zone

ID	**DA-A**	**DA-B**	**No. of trials (no of data sets)**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PECARI 250 EC 250 g/L EC**	**Summa-rized PTZ products**	**BIS-TRO 90 g/L EC**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**250 g/L EC 0.7 l/ha 175 g ai/ha**	**0.6 l/ha 54 g ai/ha**	**CA2702**	**PTZ**	**Oth-ers**	**CA2702**	**PTZ**	**Oth-ers**
After 2 applications																		
STEM / PLANT	88-229	50-83	5	*Mean*	*32.7*	***181***	***189***	*184.5*			*163*		5=	5=		6=	5=	
			(6)	Min	21.3	**106.9**	**103.5**	105.3			103.5		1<	1>			1>	
				Max	71.3	**341.2**	**311.8**	347.1			235.3							
	88-93	50-58	2***	*Mean*	*22.8*	***245.5***	***244.3***	*266.5*			*201.7*		2=	2=		3=	2=	
			(3)	Min	21.3	**149.9**	**176.9**	186			168.1		1<	1>			1>	
				Max	24.4	**341.2**	**311.8**	347.1			235.3							
			1*** (2)	*Mean*	*24.4*	***149.9***	***176.9***	*186*	*168.1*		*168.1*		1= 1<	2=		2=	2=	
			1*** (1)	*Mean*	*21.3*	***341.2***	***311.8***	*347.1*		*235.3*	*235.3*		1=	1>		1=	1>	
	160-229	64-83	3**	*Mean*	*39.3*	***138***	***152.1***	*129.9*	*137.1*		*137.1*		3=	3=		3=	3=	
			(3)	Min	21.3	**106.9**	**103.5**	105.3	103.5		103.5							
				Max	71.3	**200**	**235.3**	176.5	200		200							
			1** (1)	*Mean*	*21.3*	***200***	***235.3***	*176.5*	*200*		*200*	*152.9*	1=	1=	1=	1=	1=	1=

**Trials where the first application was conducted in autumn and the second application was conducted in spring.

***Mean efficacy across trials, excluding trials where the first application was conducted in autumn and the second application was conducted in spring

Comments of zRMS:

The mean green leaf area of whole plant/stem increased by 144,3-145,5% after 2 spring applications of CA3642 at 1-1,2 l/ha. Also slight increase was visible after autumn and spring applications with results of 38% at 1,2 al/ha and 52,1% at 1 l/ha. No statistical differences between test and reference products can be observed in the most trials in the Maritime EPPO climatic zone. Positive impact on green leaf area has been noted after 2 applications. However, no results after 1 application were available.

BRSNW – Green leaf area – North-East EPPO zone

In 6 trials from Poland in the North-East EPPO zone, the efficacy of CA3642 applied 2 times at dose rates of 1.0 L and 1.2 L/ha was assessed in terms of green leaf area.
In all six trials, the first application was conducted in the autumn and the second application was conducted in the spring.

After two applications, one in autumn and one in spring
Efficacy in terms of green leaf area was assessed on the plant in all six trials. There were two pathogens present in 1 of the trials, and one pathogen present in 5 of the trials.
Across all six trials, green leaf area on the plant increased by 124% and 118 % following two applications of CA3542 at 1.2 L and 1.0 L/ha, respectively. The GLA increase for both rates of CA3642 was statistically comparable to that of CA2445 and Orius Extra in all 6 trials. The higher 1.2 L/ha rate of CA3642 gave a statistically comparable GLA increase to that of CA2702 in 3 trials and was significantly higher in 3 trials. At the lower rate of 1.0 L/ha, CA3642 was statistically comparable to CA2702 in all trials.

The increase of green leaf area induced by CA3642 at the 1.2 L and 1.0 L/ha dose rates was statistically significant compared to the untreated control in 3 of the 6 trials.

There is a clear benefit to green leaf area persistence following the application of CA3642 in winter oilseed rape in the North-East EPPO zone.

Table 3.2-425: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW assessed as green leaf area – valid assessments – North-East EPPO zone

Part Rated	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**ORIUS EXTRA 250 g/L EW**	**CA3642 at 1.2 L/ha compared to**			**CA3642 at 1.0 L/ha compared to**		
				Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**CA2702**	**PTZ**	**Others**	**CA2702**	**PTZ**	**Others**
After 2 applications																
PLANT	242-271	39-62	6**	*Mean* Min Max	*61.7* 15 75	***124*** **107.7** **142**	***118.1*** **107.7** **133.3**	*118.7* 107.7 150	*122.9* 107.7 142	*126.2* 107.7 166.7	3= 3>	6=	6=	6=	6=	6=

UTC: % green leaf area in untreated control at assessment date
**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

The mean green leaf area of whole plant increased by 18,1% at 1 l/ha and 24% at 1,2 l/ha after autumn and spring applications. No statistical differences between test and reference products can be observed in the most trials in the North-East EPPO climatic zone. Slight positive impact on green leaf area has been noted after 2 applications. However, no results after 1 application were available.

BRSNW – Green leaf area – South-East EPPO zone

In 9 trials from the South-East EPPO zone, the efficacy of CA3642 applied up to two times at dose rates of 1.0 L/ha was assessed in terms of green leaf area. Trials from the South-East EPPO zone were carried out in Hungary (5 trials) and Romania (4 trials) in 2020.
In all nine trials, the first application was conducted in the autumn and the second application was conducted in the spring.

<u>After two applications, one in autumn and one in spring</u>
Efficacy in terms of green leaf area was assessed on the plant in all nine trials. There were three pathogens present in one of the trials, two pathogens present in 2 of the trials, and one pathogen present in six of the trials.
Across all nine trials, there was an increase of 153 % and 117 % following two split-season applications of CA3542 at 1.2 L and 1.0 L/ha, respectively.
The higher 1.2 L/ha rate of CA3642 gave a statistically comparable GLA increase compared to CA2702 in 4 trials and a significantly higher increase in 5 trials. Compared to CA2445, CA3642 at 1.2 L/ha gave statistically comparable GLA increases in 5 trials, significantly higher increases in 2 trials and significantly lower increases in 1 trial. Compared to Tilmor where applied in 5 trials, the higher rate of CA3642 gave statistically comparable GLA increases in 3 trials, significantly higher increases in 1 trial and lower increases in 1 trial.
The lower 1.0 L/ha rate of CA3642 gave a statistically comparable GLA increase compared to CA2702 in 6 trials and a significantly higher increase in 3 trials. Compared to CA2445, CA3642 at 1.0 L/ha gave statistically comparable GLA increases in 4 trials, significantly higher increases in 2 trials and significantly lower increases in 3 trials. Compared to Tilmor where applied, in 5 trials the lower rate of CA3642 gave statistically comparable GLA increases in 3 trials and significantly lower increases in 2 trials.

The increase of green leaf area induced by CA3642 at the 1.2 L and 1.0 L/ha dose rates was statistically significant compared to the untreated control in 6 of the 9 data sets.

There is a clear benefit to green leaf area persistence following the application of CA3642 in winter oilseed rape in the South-East EPPO zone.

Table 3.2-426: Summary - Efficacy of CA3642 (1.2 L and 1.0 L/ha) in BRSNW assessed as green leaf area – valid assessments – South-East EPPO zone

ID	Country	Part Rated	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	TIL-MOR 240 g/L EC	CA3642 at 1.2 L/ha compared to			CA3642 at 1.0 L/ha compared to		
						Rate		1.2 l/ha 180 g AZX /ha + 180 g	1.0 l/ha 150 g AZX /ha + 150 g	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1.2 l/ha 288 g ai/ha	CA2702	CA2445	Tilmor	CA2702	CA2445	Tilmor

								PTZ /ha	PTZ /ha									
After 2 applications																		
PLANT			217-264	41-79	9**	*Mean*	*25.6*	***252.7***	***217.1***	*188.1*	*255.5*		4=	6=		6=	4=	
						Min	2.5	**135.5**	**100.0**	70.4	120.0		5>	2>		3>	2>	
						Max	73.8	**600.0**	**400.0**	426.0	550.0			1<			3<	
					5**	*Mean*	*8.0*	***280.6***	***218.1***	*184.3*	*304.4*	*267.0*	2=	4=	3=	4=	2=	3=
						Min	2.5	**140.0**	**100.0**	70.4	120.0	60.0	3>	1<	1>	1>	3<	2<
						Max	12.5	**600.0**	**400.0**	426.0	550.0	400.0			1<			

UTC: % green leaf area in untreated control at assessment date
**Trials where the first application was conducted in autumn and the second application was conducted in spring.

Comments of zRMS:

The mean green leaf area of whole plant increased by 117,1% at 1 l/ha and 152,7% at 1,2 l/ha after autumn and spring applications. No statistical differences between CA3642 and CA2445 can be observed in the South-East EPPO climatic zone. Significant inferior results of CA2702 have been noted in 5 out of 9 trials. Positive impact on green leaf area has been noted after 2 applications. However, no results after 1 application were available.

Yield (and relevant quality indicators), from efficacy trials (in the presence of challenging pest populations)

Wheat (TRZAW)

As demonstrated for winter wheat, applications of CA3642 at 1.2-1.4 L/ha reduced the infection of several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In 34 efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease.

Yield quantity and quality were assessed in efficacy trials carried out in the Maritime (14 trials), North-East (12 trials) and South-East (8 trials) EPPO zones between 2019 and 2021.

Mycotoxin analyses were performed for 6 trials of the Maritime (3) and North-East (3) EPPO zones infested by *Fusarium* sp. Please refer to the individual trial reports.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-122.

14 trials are available to evaluate the effect of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha on yield in the Maritime EPPO zone.
The trials were carried out in France (4), Czech Republic (1), Germany (2) and Great Britain (7) between 2019 and 2021. The first application took place at crop stage BBCH 31 - 41 and the second application was done 18 - 35 days later, at BBCH 39 - 69.

12 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha on yield in the North-east EPPO zone.
The trials were carried out in Poland (6), Lithuania (2) and Latvia (4) between 2019 and 2021. The first application took place at crop stage BBCH 30 - 39 and the second application was done 14 - 53 days later, at BBCH 43 - 65.

8 trials are available to evaluate the efficacy of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha on yield in the South-east EPPO zone.
The trials were carried out in Bulgaria (1), Hungary (3) and Romania (4) in 2019. The first application took place at crop stage BBCH 30 - 35 and the second application was done 17 - 28 days later, at BBCH 43 - 61.

Yield quantity (t/ha)

As shown in the tables below, CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield of winter wheat in the presence of disease.
Numerical and even statistical increases in yield were observed over the untreated in the majority of trials.
In most of the trials, no statistically significant differences were observed compared to the used reference standards.

Table 3.2-427: Yield (t/ha) effect of CA3642 in efficacy trials on winter wheat – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 250 g/L PTZ EC**	**Proline 275 275 g/L EC**	**Joao 250 g/L EC**	**Summarized PTZ Products**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ /ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
GRAIN	GBR	101	76			7.8 d 100	**8.7 a 111.6**	**8.7 ab 110.8**	8.2 cd 104.1		8.7 ab 110.7		8.7 ab 110.7
	GBR	101	79			8.9 b 100	**10.2 a 114.6**	**10.2 a 114.8**	10.0 a 112.3		10.2 a 114.5		10.2 a 114.5
	CZE	104	80			6.2 c 100	**7.4 ab 118.8**	**7.2 ab 115.9**	6.7 bc 108.2	7.3 ab 116.7			7.3 ab 116.7
	GBR	106	76			8.2 b 100	**9.4 a 115.4**	**9.4 a 115.0**	9.1 a 111.0		9.5 a 116.0		9.5 a 116.0
	GBR	114	79			3.9 d 100	**11.4 a 292.8**	**11.2 a 288.4**	7.3 c 188.9	9.1 b 233.7			9.1 b 233.7
	GBR	120	86			8.8 bc 100	**9.3 ab 106.4**	**9.0 abc 102.3**	8.6 c 97.7		9.4 a 107.5		9.4 a 107.5
	FRA	83	65			8.0 b 100	**8.6 a 108.0**	**8.7 a 109.0**	8.4 ab 104.6			8.5 a 106.3	8.5 a 106.3
	FRA	87	64			8.2 c 100	**9.3 ab 114.0**	**9.1 ab 111.5**	8.5 c 104.2			9.3 ab 113.7	9.3 ab 113.7
	FRA	92	65			7.5 e 100	**9.9 a 132.8**	**9.9 a 132.4**	8.8 d 118.2			9.4 bc 125.6	9.4 bc 125.6
	DEU	95	67			6.6 a 100	**7.0 a 105.4**	**6.7 a 101.1**	6.6 a 99.4	6.7 a 100.7			6.7 a 100.7
	DEU	97	62			8.7 b 100	**9.6 ab 110.2**	**9.3 ab 105.9**	9.2 ab 105.4	9.3 ab 106.0			9.3 ab 106.0
	GBR	98	64			6.6 b 100	**7.2 a 109.7**	**7.0 a 106.4**	6.9 a 105.3		7.1 a 107.5		7.1 a 107.5
	GBR	98	80			9.8 c 100	**10.8 a 110.4**	**10.5 ab 107.8**	10.0 bc 102.1		10.6 a 109.1		10.6 a 109.1
	FRA	99	69			6.1 b 100	**9.2 a 150.1**	**8.3 a 134.7**	8.0 a 131.2			8.9 a 144.5	8.9 a 144.5
Mean				*14*	*Mean* Min Max	*7.5* 3.9 9.8	***128.6*** **105.4** **292.8**	***125.4*** **101.1** **288.4**	*113.8* 97.7 188.9				*122.3* 100.7 233.7

Mean	*4*	*Mean*	*6.4*	***156.8***	***152.8***	*125.5*	*139.3*			*139.3*
		Min	3.9	**105.4**	**101.1**	99.4	100.7			100.7
		Max	8.7	**292.8**	**288.4**	188.9	233.7			233.7
Mean	*6*	*Mean*	*8.3*	***111.3***	***109.5***	*105.4*		*110.9*		*110.9*
		Min	6.6	**106.4**	**102.3**	97.7		107.5		107.5
		Max	9.8	**115.4**	**115.0**	112.3		116.0		116.0
Mean	*3*	*Mean*	*7.2*	***130.3***	***125.4***	*118.0*			*125.5*	*125.5*
		Min	6.1	**108.0**	**109.0**	104.6			106.3	106.3
		Max	8.0	**150.1**	**134.7**	131.2			144.5	144.5

* Just one disease present

There were 14 trials used to assess the yield in the Maritime zone. Where eight of the 14 trials had more than one pathogen present. There was a significantly higher yield in eleven trials for both dose rates of CA3642 when compared to the untreated control. A significantly higher yield was found for six trials and five trials for 1.4 and 1.2 L/ha CA3642 respectively compared to CA2702, with both dose rates having a significantly higher yield in two trials compared to one of the PTZ reference product

Table 3.2-428: Yield (t/ha) effect of CA3642 in efficacy trials on winter wheat – North-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC 65 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
GRAIN	POL	108	55			7.9 c 100	**9.3 ab 118.1**	9.3 ab 118.1	9.6 a 122.1		9.0 ab 114.1
	LVA	109	79			4.5 a 100	**4.0 a 89.6**	4.8 a 105.4	5.0 a 111.6	4.3 a 95.6	
	POL	112	59			5.0 f 100	**7.7 ab 154.1**	7.6 abc 152.1	6.9 de 137.6		7.1 b-e 142.3
	POL	112	60			6.9 b 100	**9.0 a 130.7**	8.8 a 126.9	7.2 b 104.1		7.6 b 109.3
	LTU	65	48			5.9 a 100	**6.2 a 104.6**	6.2 a 105.6	5.9 a 100.5	6.2 a 106.0	
	LTU	66	50			5.8 ab 100	**5.8 ab 101.5**	6.1 ab 106.0	5.7 b 99.0	6.2 a 107.0	
	POL	73	51			6.5 a 100	**6.7 a 103.1**	6.9 a 106.2	6.6 a 101.3		6.8 a 104.5
	LVA	75	50			4.1 a 100	**4.9 a 118.8**	4.9 a 118.3	4.7 a 113.1	4.8 a 116.9	
	LVA	76	48			4.8 a 100	**5.1 a 107.1**	5.0 a 104.7	5.1 a 107.1	5.2 a 108.4	
	LVA	81	56			7.0 a 100	**7.2 a 102.6**	7.3 a 104.4	7.3 a 104.0	6.9 a 98.4	
	POL	81	66			3.9 a 100	**3.5 a 89.9**	4.0 a 102.8	4.2 a 108.0		3.9 a 100.3
	POL	84	54			3.8 c 100	**4.7 abc 122.4**	4.5 bc 117.4	4.0 c 104.7		5.0 ab 131.4
Mean				*12*	*Mean* Min Max	*5.5* 3.8 7.9	***111.9*** **89.6** **154.1**	*114.0* 102.8 152.1	*109.4* 99.0 137.6		
Mean				*6*	*Mean* Min Max	*5.3* 4.1 7.0	***104.0*** **89.6** **118.8**	*107.4* 104.4 118.3	*105.9* 99.0 113.1	*105.4* 95.6 116.9	
Mean				*6*	*Mean* Min Max	*5.7* 3.8 7.9	***119.7*** **89.9** **154.1**	*120.6* 102.8 152.1	*113.0* 101.3 137.6		*117.0* 100.3 142.3

* Just one disease present

There were twelve trials used to assess the yield in the North- east zone. Where six of the twelve trials had more than one pathogen present. There were three trials that had a significantly higher yield for both doses of CA3642 compared to the untreated control. A significantly higher yield was found in two trials for both dose rates of CA3642 when compared to CA2702 and one trial at both dose rates of CA3642 when compared to OSIRIS 65 EC.

Table 3.2-429: Yield (t/ha) effect of CA3642 in efficacy trials on winter wheat – South-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Riza 20 EC TBZ 200 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.25 l/ha 250 g TBZ /ha**	**1.25 l/ha 250 g ai/ha**
GRAIN	ROU	71	50			5.2 f 100	**6.0 ab** **116.2**	**5.9 cd** **113.7**	5.6 e 109.3	6.0 abc 115.5		
	ROU	79	51			5.2 e 100	**6.0 ab** **115.3**	**5.9 bc** **113.8**	5.8 c 112.3	6.0 a 116.2		
	HUN	80	63			5.7 a 100	**6.3 a** **109.7**	**6.9 a** **120.1**	6.6 a 114.3		6.7 a 116.2	
	ROU	85	57			5.4 c 100	**6.3 a** **116.1**	**6.3 a** **116.0**	6.3 ab 115.4	6.3 ab 115.4		
	HUN	85	68			5.6 a 100	**5.8 a** **104.0**	**5.8 a** **104.8**	5.7 a 102.1		5.7 a 103.4	
	ROU	91	63			5.2 c 100	**6.0 a** **115.2**	**6.0 a** **115.0**	6.0 a 114.6	6.0 a 114.2		
	BGR	75	58	1		3.5 a 100	**4.4 a** 125.0	**4.0 a** 113.7	3.9 a 111.0			3.9 a 113.
	HUN	78	61	1		2.6 a 100	**3.3 a** 126.5	**3.3 a** 124.8	2.6 a 100.0		3.1 a 119.7	
Mean				*8*	*Mean* Min Max	4.8 2.6 5.7	116.0 104.0 126.5	115.2 104.8 124.8	109.9 100.0 115.4			
Mean				*4*	*Mean* Min Max	*5.2* 5.2 5.4	***115.7*** **115.2** **116.2**	***114.6*** **113.7** **116.0**	*112.9* 109.3 115.4	*115.3* 114.2 116.2		
Mean				*3*	*Mean* Min Max	4.6 2.6 5.7	113.4 104.0 126.5	116.6 104.8 124.8	105.5 100.0 114.3		113.1 103.4 119.7	
Mean				1		3.5	125.0	113.7	111.0			113.0

* Just one disease present

There were eight trials used to assess the yield in the South- east zone. Where one of the eight trials had more than one pathogen present. There were four trials that had a significantly higher yield for both doses of CA3642 compared to the untreated control. There was one and two trials that had a significantly higher yield for 1.2 and 1.4 L/ha CA3642 when compared to CA2702. In one trial there was a significantly higher yield for CA2445 compared to 1.2 L/ha CA3642. There were no statistical differences between CA3645 and the other reference standards.

Comments of zRMS:

The mean yield of winter wheat increased after 2 applications of CA3642. In the Maritime EPPO climatic zone, the increase was 28,6% at 1,4 l/ha and 25,4% at 1,2 l/ha in 14 trials. Similar effect was observed for products containing prothioconazole whilst CA2702 had slight inferior result (13,8%). In the North-East EPPO zone, the increase was 11,9% at 1,4 l/ha and 14% at 1,2 l/ha in 12 trials. Significant lower result was visible for CA2702 (9,4%). In the South-East EPPO zone, the increase was 16% at 1,4 l/ha and 15,2% in 8 trials. CA2702 achieved inferior result of 9,9%. Taking into account all trials, positive impact on the wheat yield was observed after 2 application of CA3642.

Yield quality

Yield quality in terms of hectolitre weight, moisture content and thousand grain weight was evaluated. As shown in the tables below, CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield quality parameters of winter wheat in the presence of disease.
In the majority of trials, an increase in quality over the untreated was observed and no statistically significant differences were detected compared to the used reference standards.

In the Maritime EPPO zone, yield quality parameters (hectolitre weight, moisture content and thousand grain weight) were assessed in 14 trials on winter wheat.

In terms of hectolitre weight (HLW), in 7 trials out of 14, significantly higher HLW was observed following treatment with CA3642 at 1.2 or 1.4 L/ha compared to the untreated plot. There were no significant differences in HLW between plots treated with CA3642 and those treated with the reference standards in most of the trials. In two trials carried out in Greece however, plots treated with CA3642 at 1.2 or 1.4 L/ha showed significantly higher HLW compared to plots treated with the reference product CA2702.

Table 3.2-430: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter wheat – Maritime EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Proline 275 PTZ 275 g/L EC**	**Joao PTZ 250 g/L EC**	**Summarized PTZ Products**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
GRAIN	FRA	101	71			75.1 c 100	**80.7 a 107.5**	**79.7 ab 106.1**	78.5 b 104.5			79.6 ab 105.9	79.6 ab 105.9
	CZE	104	80			71.5 a 100	**71.8 a 100.3**	**72.8 a 101.7**	73.8 a 103.1	70.8 a 99.0			70.8 a 99.0
	GBR	114	79			71.0 c 100	**79.5 a 111.9**	**79.5 a 111.9**	75.3 b 106.1	77.0 ab 108.5			77.0 ab 108.5
	GBR	115	85			69.0 a 100	**70.5 a 102.2**	**70.8 a 102.6**	69.3 a 100.5		70.3 a 102.0		70.3 a 102.0
	GBR	117	92			65.3 a 100	**66.1 a 101.2**	**65.7 a 100.7**	64.4 a 98.7		66.2 a 101.5		66.2 a 101.5
	GBR	120	86			73.5 b 100	**74.9 a 101.8**	**75.7 a 103.0**	75.0 a 102.0		75.6 a 102.7		75.6 a 102.7
	GBR	122	100			72.7 b 100	**74.8 a 102.9**	**74.8 a 102.9**	75.3 a 103.6		74.6 a 102.6		74.6 a 102.6
	FRA	87	64			75.9 c 100	**76.7 ab 101.1**	**76.9 ab 101.4**	76.4 bc 100.7			76.6 ab 101.0	76.6 ab 101.0
	FRA	87	69			77.6 b 100	**78.7 ab 101.4**	**78.5 ab 101.2**	78.6 ab 101.2			78.5 ab 101.2	78.5 ab 101.2
	FRA	94	67			74.8 b 100	**79.5 a 106.3**	**79.9 a 106.8**	78.5 a 104.9			79.5 a 106.2	79.5 a 106.2
	DEU	95	67			74.8 a 100	**75.0 a 100.3**	**74.9 a 100.1**	74.7 a 99.9	75.0 a 100.2			75.0 a 100.2
	DEU	97	62			80.9 a 100	**80.3 a 99.3**	**80.3 a 99.4**	80.3 a 99.3	80.5 a 99.6			80.5 a 99.6
	GBR	98	64			74.0 a 100	**74.8 a 101.1**	**74.5 a 100.7**	74.0 a 100.1		74.7 a 100.9		74.7 a 100.9
	GBR	98	80			76.1 c 100	**77.9 a 102.5**	**77.7 a 102.1**	76.9 b 101.1		77.5 ab 101.9		77.5 ab 101.9
Mean				*14*	*Mean* Min Max	*73.7* 65.3 80.9	***102.8*** **99.3** **111.9**	***102.9*** **99.4** **111.9**	*101.8* 98.7 106.1				*102.4* 99.0 108.5
Mean				4	Mean Min	74.5 71.0	**103.0** **99.3**	**103.3** **99.4**	102.1 99.3	101.8 99.0			101.8 99.0

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Proline 275 PTZ 275 g/L EC**	**Joao PTZ 250 g/L EC**	**Summarized PTZ Products**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
					Max	80.9	**111.9**	**111.9**	106.1	108.5			108.5
Mean				*6*	*Mean*	*71.7*	***102.0***	***102.0***	*101.0*		*101.9*		*101.9*
					Min	65.3	**101.1**	**100.7**	98.7		100.9		100.9
					Max	76.1	**102.9**	**103.0**	103.6		102.7		102.7
Mean				*4*	*Mean*	*75.9*	***104.1***	***103.9***	*102.8*			*103.6*	*103.6*
					Min	74.8	**101.1**	**101.2**	100.7			101.0	101.0
					Max	77.6	**107.5**	**106.8**	104.9			106.2	106.2

Regarding moisture content, significant increase compared to the untreated plot was observed following treatment with CA3642 in 3 out of 14 trials when applied at 1.4 L/ha and in 2 out of 14 trials when applied at 1.2 L/ha. There were no significant differences in moisture content between plots treated with CA3642 and those treated with the reference standards in most of the trials.

Table 3.2-431: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter wheat – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	Proline 275 PTZ 275 g/L EC	Joao PTZ 250 g/L EC	Summarized PTZ Products
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
GRAIN	FRA	101	71			10.7 a 100	**10.9 a 102.3**	**11.0 a 103.0**	10.9 a 101.9			11.0 a 102.5	11.0 a 102.5
	GBR	101	76			12.5 ab 100	**12.9 a 102.8**	**13.0 a 103.6**	12.6 ab 100.4		12.8 ab 102.0		12.8 ab 102.0
	GBR	101	79			17.3 a 100	**17.2 a 99.6**	**17.0 a 98.6**	17.0 a 98.7		17.2 a 99.4		17.2 a 99.4
	CZE	104	80			12.2 a 100	**11.4 a 93.4**	**12.5 a 102.2**	12.2 a 99.8	12.3 a 100.8			12.3 a 100.8
	GBR	106	76			18.0 a 100	**18.0 a 100.0**	**18.0 a 100.0**	18.0 a 100.0		18.0 a 100.0		18.0 a 100.0
	GBR	114	79			13.7 c 100	**14.4 ab 105.3**	**14.5 a 105.5**	14.1 b 103.1	14.2 ab 103.6			14.2 ab 103.6
	GBR	120	86			13.6 a 100	**13.6 a 99.6**	**13.7 a 100.7**	13.6 a 100.0		13.6 a 100.2		13.6 a 100.2
	FRA	87	64			16.2 b 100	**16.7 a 103.1**	**16.8 a 103.4**	16.4 ab 101.2			16.7 a 103.2	16.7 a 103.2
	FRA	87	69			10.5 a 100	**10.8 a 102.4**	**10.6 a 101.0**	10.5 a 100.3			10.6 a 100.5	10.6 a 100.5
	FRA	94	67			12.4 a 100	**12.5 a 100.6**	**12.4 a 100.4**	12.6 a 101.4			12.4 a 100.4	12.4 a 100.4
	DEU	95	67			14.8 a 100	**14.6 a 98.6**	**14.6 a 98.6**	14.5 a 98.1	14.5 a 98.1			14.5 a 98.1
	DEU	97	62			10.9 a 100	**11.1 a 101.7**	**10.9 a 99.4**	11.0 a 100.6	11.1 a 101.4			11.1 a 101.4
	GBR	98	64			14.0 b 100	**14.1 a 100.9**	**14.1 ab 100.5**	14.0 ab 100.4		14.0 ab 100.4		14.0 ab 100.4
	GBR	98	80			13.3 a 100	**13.4 a 100.6**	**13.3 a 100.2**	13.2 a 99.5		13.4 a 100.4		13.4 a 100.4
Mean				14	Mean Min Max	*13.6* 10.5 18.0	***100.8*** **93.4** **105.3**	***101.2*** **98.6** **105.5**	*100.4* 98.1 103.1				*100.9* 98.1 103.6
Mean				4	Mean Min	*12.9* 10.9	***99.8*** **93.4**	***101.4*** **98.6**	*100.4* 98.1	*101.0* 98.1			*101.0* 98.1

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Proline 275 PTZ 275 g/L EC**	**Joao PTZ 250 g/L EC**	**Summarized PTZ Products**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
					Max	14.8	**105.3**	**105.5**	103.1	103.6			103.6
Mean				*6*	*Mean*	*14.8*	***100.6***	***100.6***	*99.8*		*100.4*		*100.4*
					Min	12.5	**99.6**	**98.6**	98.7		99.4		99.4
					Max	18.0	**102.8**	**103.6**	100.4		102.0		102.0
Mean				*4*	*Mean*	*12.4*	***102.1***	***101.9***	*101.2*			*101.7*	*101.7*
					Min	10.5	**100.6**	**100.4**	100.3			100.4	100.4
					Max	16.2	**103.1**	**103.4**	101.9			103.2	103.2

For thousand grain weight (TGW), significant increase compared to the untreated plot was observed following treatment with CA3642 in 4 out of 13 trials when applied at 1.4 L/ha and in 2 out of 13 trials when applied at 1.2 L/ha. No significant differences in thousand grain weight were detected between plots treated with CA3642 and those treated with the reference standards in most of the trials. In one trial carried out in France however, plots treated with CA3642 at both rates showed significantly higher TGW compared to plots treated with the reference product CA2702.

Table 3.2-432: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter wheat – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 250 PTZ/L EC	Proline 275 PTZ 275 PTZ/L EC	Joao PTZ 250 PTZ/L EC	Summarized PTZ Products
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
GRAIN	FRA	101	71			36.0 c 100	**45.9 ab 127.8**	**47.6 a 132.4**	42.4 b 117.9			46.2 a 128.6	46.2 a 128.6
	CZE	104	80			44.6 a 100	**45.4 a 101.7**	**44.7 a 100.3**	44.1 a 98.9	45.6 a 102.2			45.6 a 102.2
	GBR	105	87			44.0 c 100	**47.2 ab 107.2**	**46.9 abc 106.5**	45.3 bc 102.9		47.1 abc 106.9		47.1 abc 106.9
	GBR	112	87			34.6 a 100	**36.4 a 105.1**	**35.3 a 102.1**	34.4 a 99.5		35.8 a 103.5		35.8 a 103.5
	GBR	115	85			40.2 a 100	**43.2 a 107.5**	**43.6 a 108.5**	41.0 a 101.9		43.1 a 107.1		43.1 a 107.1
	GBR	120	86			45.8 a 100	**47.9 a 104.6**	**41.8 a 91.3**	44.4 a 97.0		48.4 a 105.8		48.4 a 105.8
	GBR	122	100			49.0 a 100	**54.2 a 110.5**	**53.5 a 109.2**	53.7 a 109.5		55.1 a 112.4		55.1 a 112.4
	FRA	90	72			30.7 a 100	**33.1 a 107.7**	**32.4 a 105.5**	31.7 a 103.3			32.6 a 106.1	32.6 a 106.1
	FRA	94	67			36.8 d 100	**45.0 a 122.3**	**45.3 a 123.2**	42.7 bc 116.1			44.5 ab 121.0	44.5 ab 121.0
	DEU	95	67			45.9 a 100	**46.1 a 100.3**	**46.1 a 100.3**	45.8 a 99.7	46.1 a 100.3			46.1 a 100.3
	DEU	97	62			37.4 a 100	**38.0 a 101.6**	**37.3 a 99.9**	37.6 a 100.7	38.0 a 101.8			38.0 a 101.8
	GBR	98	64			41.9 a 100	**42.6 a 101.8**	**42.0 a 100.4**	42.1 a 100.5		43.4 a 103.5		43.4 a 103.5
	FRA	99	76			38.2 b 100	**42.1 a 110.2**	**41.0 ab 107.3**	40.0 ab 104.6			41.7 a 109.1	41.7 a 109.1
Mean				*13*	*Mean* Min Max	*40.4* 30.7 49.0	***108.3*** **100.3** **127.8**	***106.7*** **91.3** **132.4**	*104.0* 97.0 117.9				*108.3* 100.3 128.6
Mean				3	Mean Min Max	*42.6* 37.4 45.9	***101.2*** **100.3** **101.7**	***100.2*** **99.9** **100.3**	*99.7* 98.9 100.7	*101.4* 100.3 102.2			*101.4* 100.3 102.2
Mean				*6*	*Mean*	*42.6*	***106.1***	***103.0***	*101.9*		*106.5*		*106.5*

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 250 PTZ/L EC	Proline 275 PTZ 275 PTZ/L EC	Joao PTZ 250 PTZ/L EC	Summarized PTZ Products
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**0.72 l/ha 198 g PTZ/ha**	**0.8 l/ha 200 g PTZ/ha**	**EC**
					Min Max	34.6 49.0	**101.8** **110.5**	**91.3** **109.2**	97.0 109.5		103.5 112.4		103.5 112.4
Mean				*4*	*Mean* Min Max	*35.4* 30.7 38.2	***117.0*** **107.7** **127.8**	***117.1*** **105.5** **132.4**	*110.5* 103.3 117.9			*116.2* 106.1 128.6	*116.2* 106.1 128.6

In the North-East EPPO zone, yield quality parameters (hectolitre weight, moisture content and thousand grain weight) were assessed in 12 trials on winter wheat.

In terms of hectolitre weight (HLW), in 2 trials out of 12, significantly higher HLW was observed following treatment with CA3642 at 1.2 or 1.4 L/ha compared to the untreated plot. There were no significant differences in HLW between plots treated with CA3642 and those treated with the reference standards.

Table 3.2-433: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter wheat – North-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
GRAIN	LVA	101	76			83.1 a 100	**83.6 a** **100.6**	**83.5 a** **100.5**	83.0 a 100.0	83.2 a 100.2	
	POL	108	55			80.5 c 100	**84.3 a** **104.8**	**83.7 ab** **104.0**	83.3 ab 103.6		83.0 ab 103.1
	LVA	109	79			72.9 a 100	**72.5 a** **99.5**	**74.1 a** **101.7**	72.3 a 99.3	73.2 a 100.5	
	POL	122	69			78.4 b	**81.5 a**	**80.9 a**	80.7 a		80.7 a

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC 65 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
						100	**103.9**	**103.1**	102.9		102.8
	POL	122	70			80.7 a 100	**80.6 a** **99.9**	**81.5 a** **101.0**	80.8 a 100.1		79.6 a 98.6
	LTU	65	48			75.5 a 100	**75.1 a** **99.4**	**75.6 a** **100.1**	75.5 a 100.0	75.7 a 100.2	
	LTU	70	54			75.7 a 100	**75.8 a** **100.1**	**76.6 a** **101.1**	76.0 a 100.4	76.1 a 100.5	
	POL	73	51			73.3 a 100	**73.7 a** **100.5**	**75.1 a** **102.5**	74.7 a 101.9		73.6 a 100.4
	LVA	76	48			79.3 a 100	**79.8 a** **100.6**	**80.6 a** **101.6**	80.6 a 101.7	80.2 a 101.1	
	LVA	81	56			88.2 a 100	**88.8 a** **100.7**	**88.6 a** **100.5**	88.1 a 100.0	88.1 a 99.9	
	POL	81	66			66.4 a 100	**72.7 a** **109.5**	**72.6 a** **109.4**	72.2 a 108.8		69.1 a 104.2
	POL	84	54			76.5 a 100	**77.6 a** **101.4**	**77.9 a** **101.8**	77.0 a 100.6		75.7 a 99.0
Mean				*12*	*Mean* Min Max	*77.5* 66.4 88.2	***101.8*** **99.4** **109.5**	***102.3*** **100.1** **109.4**	*101.6* 99.3 108.8		
Mean				6	*Mean* Min Max	*79.1* 72.9 88.2	***100.1*** **99.4** **100.7**	***100.9*** **100.1** **101.7**	*100.2* 99.3 101.7	*100.4* 99.9 101.1	

Part Rated	**Coun-try**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC 65 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
Mean				*6*	*Mean*	*76.0*	***103.4***	***103.6***	*103.0*		*101.3*
					Min	66.4	**99.9**	**101.0**	100.1		98.6
					Max	80.7	**109.5**	**109.4**	108.8		104.2

Regarding moisture content, no significant increase compared to the untreated plot was observed following treatment with CA3642 at both rates except in 1 trial out of 12 where significant increase was detected. There were no significant differences in moisture content between plots treated with CA3642 and those treated with the reference standards.

Table 3.2-434: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter wheat – North-East EPPO zone

Part Rated	Coun-try	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
GRAIN	POL	108	55			12.3 a 100	**12.6 a** **102.9**	**12.8 a** **104.3**	12.7 a 103.3		12.5 a 102.3
	LVA	109	79			16.3 a 100	**16.9 a** **103.4**	**16.6 a** **102.0**	17.1 a 104.6	16.4 a 100.7	
	POL	112	59			10.6 b 100	**11.7 a** **110.1**	**11.9 a** **112.5**	11.9 a 112.0		11.5 a 108.5
	POL	112	60			10.5 a 100	**11.2 a** **106.9**	**10.9 a** **103.8**	10.8 a 102.6		10.6 a 101.4
	LTU	65	48			14.8 a 100	**14.9 a** **100.7**	**14.9 a** **100.3**	14.8 a 100.0	14.9 a 100.1	
	LTU	66	50			13.6 a 100	**13.6 a** **100.0**	**13.6 a** **100.6**	13.6 a 100.2	13.6 a 100.2	
	POL	73	51			11.5 a 100	**11.7 a** **102.0**	**11.4 a** **98.7**	11.5 a 99.8		11.4 a 99.1
	LVA	75	50			17.0 a 100	**18.8 a** **110.7**	**18.4 a** **108.4**	18.2 a 107.4	18.1 a 106.6	
	LVA	76	48			11.9 a 100	**12.1 a** **101.8**	**11.7 a** **99.0**	11.8 a 99.5	11.9 a 100.5	
	LVA	81	56			12.5 a 100	**12.7 a** **101.9**	**12.7 a** **101.2**	12.9 a 103.3	12.5 a 100.0	
	POL	81	66			12.1 a 100	**10.8 a** **89.4**	**11.3 a** **93.5**	11.1 a 92.1		11.7 a 96.4

Part Rated	Coun-try	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
	POL	84	54			13.5 a 100	**13.5 a** **100.4**	**13.6 a** **100.9**	13.3 a 98.9		13.5 a 100.1
Mean				*12*	*Mean* Min Max	*13.0* 10.5 17.0	***102.5*** **89.4** **110.7**	***102.1*** **93.5** **112.5**	*102.0* 92.1 112.0		
Mean				*6*	*Mean* Min *Max*	*14.3* 11.9 17.0	***103.1*** **100.0** **110.7**	***101.9*** **99.0** **108.4**	*102.5* 99.5 107.4	*101.4* 100.0 106.6	
Mean				*6*	*Mean* Min Max	*11.7* 10.5 13.5	***101.9*** **89.4** **110.1**	***102.3*** **93.5** **112.5**	*101.4* 92.1 112.0		101.3 96.4 108.5

For thousand grain weight (TGW), significant increase compared to the untreated plot was observed in 4 out of 12 trials following treatment with CA3642 at both rates. No significant differences in thousand grain weight were detected between plots treated with CA3642 and those treated with the reference standards.

Table 3.2-435: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter wheat – North-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC 65 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**2 l/ha 37.5 g/L EPC + 27.5 g/L MTC**
GRAIN	LVA	101	76			55.8 a 100	**58.6 a 105.1**	**58.7 a 105.2**	57.9 a 103.8	58.3 a 104.6	
	LVA	102	77			58.8 a 100	**58.5 a 99.5**	**59.5 a 101.2**	58.5 a 99.5	58.5 a 99.5	
	POL	108	55			42.0 b 100	**46.9 a 111.8**	**46.8 a 111.6**	46.4 a 110.6		46.1 a 109.9
	POL	114	99			30.1 a 100	**31.0 a 102.7**	**33.1 a 109.8**	32.1 a 106.7		33.8 a 112.2
	POL	122	69			36.9 b 100	**42.1 a 114.1**	**41.3 a 111.9**	41.0 a 110.9		40.7 a 110.1
	POL	122	70			38.4 b 100	**40.4 a 105.3**	**40.5 a 105.5**	40.1 a 104.5		39.7 ab 103.4
	LVA	122	92			32.8 a 100	**33.0 a 100.8**	**35.0 a 106.8**	36.3 a 110.8	35.0 a 106.6	
	POL	90	60			32.2 a 100	**36.6 a 113.8**	**34.4 a 107.0**	33.5 a 104.1		34.8 a 108.2
	LTU	94	78			39.3 ab 100	**39.5 ab 100.4**	**41.0 a 104.2**	39.0 b 99.0	40.4 ab 102.8	
	POL	96	74			29.1 a 100	**28.8 a 98.8**	**30.2 a 103.5**	30.1 a 103.3		30.4 a 104.4
	LTU	97	80			40.8 c 100	**42.7 a 104.7**	**42.8 a 104.9**	41.7 abc 102.2	41.7 abc 102.1	
	LVA	98	70			36.2 a 100	**36.3 a 100.2**	**37.5 a 103.6**	36.5 a 100.9	36.5 a 100.8	
Mean				*7*	*Mean* Min Max	*41.7* 28.1 58.8		***104.3*** **101.2** **106.8**		*102.9* 99.5 106.6	
Mean				*12*	*Mean* Min Max	*39.4* 29.1 58.8	***104.8*** **98.8** **114.1**	***106.3*** **101.2** **111.9**	*104.7* 99.0 110.9		
Mean				*6*	*Mean* Min Max	*34.8* 29.1 42.0	***107.8*** **98.8** **114.1**	***108.2*** **103.5** **111.9**	*106.7* 103.3 110.9		*108.0* 103.4 112.2

In the South-East EPPO zone, yield quality parameters (hectolitre weight, moisture content and thousand grain weight) were assessed in 8 trials on winter wheat.

In terms of hectolitre weight (HLW), in 4 trials out of 8, significantly higher HLW was observed following treatment with CA3642 at 1.2 or 1.4 L/ha compared to the untreated plot. There were no significant differences in HLW between plots treated with CA3642 and those treated with the reference standards in most of the trials. In one trial carried out in Romania however, plots treated with CA3642 at 1.2 or 1.4 L/ha showed significantly higher HLW compared to plots treated with the reference products CA2702 or CA2445.

Table 3.2-436: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter wheat – South-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	Priaxor PCS + FLX 225 g/L EC	Riza 20 EC TBZ 200 g/L EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.25 l/ha 250 g TBZ /ha**	**1.25 l/ha 250 g ai/ha**
GRAIN	BGR	103	86			69.0 a 100	**70.6 a 102.3**	**70.5 a 102.1**	70.0 a 101.4			70.1 a 101.6
	ROU	71	50			69.1 f 100	**72.3 abc 104.7**	**71.4 de 103.4**	71.0 e 102.8	72.4 ab 104.9		
	HUN	78	61			75.4 a 100	**76.9 a 102.0**	**75.0 a 99.5**	75.9 a 100.6		76.4 a 101.3	
	ROU	79	51			69.8 e 100	**72.4 bc 103.6**	**73.4 a 105.0**	71.2 d 102.0	72.7 b 104.0		
	ROU	85	57			72.4 b 100	**72.9 a 100.6**	**72.9 a 100.7**	72.7 ab 100.3	72.8 a 100.6		
	ROU	91	63			70.4 d 100	**73.0 a 103.6**	**73.0 a 103.7**	71.9 bc 102.1	72.4 b 102.8		
	HUN	97	80			80.6 a 100	**80.5 a 99.9**	**81.2 a 100.8**	80.0 a 99.3		81.2 a 100.8	
	HUN	98	81			80.4 a 100	**80.3 a 99.9**	**80.2 a 99.7**	80.7 a 100.3		80.8 a 100.5	
Mean				*8*	*Mean* Min Max	*73.4* 69.0 80.6	***102.1*** **99.9** **104.7**	*101.8* 99.5 105.0	*101.1* 99.3 102.8			
Mean				*4*	*Mean* Min Max	*70.4* 69.1 72.4	***103.1*** **100.6** **104.7**	***103.2*** **100.7** **105.0**	*101.8* 100.3 102.8	*103.1* 100.6 104.9		
Mean				*3*	*Mean* Min Max	*80.0* 75.4 83.7	***100.6*** **99.9** **102.0**	***99.9*** **99.5** **100.8**	*100.2* 99.3 100.6		*100.8* 100.5 101.3	
Mean				1		69.0	**102.3**	**102.1**	101.4			101.6

Regarding moisture content, significant increase compared to the untreated plot was observed in 4 out of 8 trials following treatment with CA3642 at 1.2 or 1.4 L/ha. There were no significant differences in moisture content between plots treated with CA3642 and those treated with the reference standards in most of the trials. In three trials carried out in Romania however, plots treated with CA6242 at 1.2 or 1.4 L/ha showed significantly higher moisture content compared to plots treated with the reference product CA2702 and in two trials, plots treated with CA3642 at both rates showed significantly higher moisture content compared to plots treated with the reference product CA2445.

Table 3.2-437: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter wheat – South-East EPPO zone

Part Rat-ed	**Coun-try**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Riza 20 EC TBZ 200 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.25 l/ha 250 g TBZ/ha**	**1.25 l/ha 250 g ai/ha**
GRAIN	ROU	71	50			13.9 d 100	**14.3 b** **102.7**	**14.3 b** **102.7**	14.0 d 100.4	14.3 b 102.5		
	BGR	75	58			12.6 a 100	**12.6 a** **99.8**	**12.6 a** **100.2**	12.6 a 99.8			12.6 a 100.0
	HUN	78	61			5.1 a 100	**5.6 a** **109.8**	**5.2 a** **102.0**	5.1 a 100.6		5.3 a 103.5	
	ROU	79	51			14.0 f 100	**14.4 ab** **103.0**	**14.5 a** **103.7**	14.0 ef 100.4	14.3 cd 101.9		
	HUN	80	63			13.1 a 100	**13.8 a** **105.4**	**13.4 a** **102.7**	13.6 a 104.4		13.5 a 103.3	
	ROU	85	57			14.2 c 100	**15.1 a** **106.4**	**15.0 a** **106.2**	14.4 b 101.8	14.6 b 102.8		
	HUN	85	68			12.3 a 100	**12.3 a** **99.8**	**12.3 a** **99.8**	12.5 a 101.0		12.5 a 101.0	
	ROU	91	63			13.6 d 100	**14.3 a** **104.9**	**14.0 bc** **102.9**	13.7 cd 100.9	14.0 bc 102.9		
Mean				*8*	*Mean* Min Max	*12.3* 5.1 14.2	***104.0*** **99.8** **109.8**	***102.5*** **99.8** **106.2**	*101.2* 99.8 104.4			
Mean				*4*	*Mean* Min Max	*13.9* 13.6 14.2	***104.2*** **102.7** **106.4**	***103.9*** **102.7** **106.2**	*100.8* 100.4 101.8	*102.6* 101.9 102.9		
Mean				*3*	*Mean* Min Max	*10.2* 5.1 13.1	***105.0*** **99.8** **109.8**	***101.5*** **99.8** **102.7**	*102.0* 100.6 104.4		*102.6* 101.0 103.5	
Mean				1		*12.6*	***99.8***	***100.2***	*99.8*			*100.0*

For thousand grain weight (TGW), significant increase compared to the untreated plot was observed in 4 trials out of 8 following treatment with CA3642 at 1.2 or 1.4 L/ha. No significant differences in thousand grain weight were detected between plots treated with CA3642 and those treated with the reference standards in most of the trials.

Table 3.2-438: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter wheat – South-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**Priaxor PCS + FLX 225 g/L EC**	**Riza 20 EC TBZ 200 g/L EC**
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**	**1.25 l/ha 250 g TBZ /ha**	**1.25 l/ha 250 g ai/ha**
GRAIN	BGR	103	86			41.6 a 100	**42.9 a 102.9**	**42.2 a 101.3**	41.8 a 100.4			41.6 a 99.9
	ROU	71	50			41.1 g 100	**45.1 cd 109.8**	**44.9 de 109.3**	45.2 cd 110.0	45.7 b 111.2		
	HUN	78	61			44.9 a 100	**44.5 a 99.2**	**46.1 a 102.7**	46.1 a 102.7		45.2 a 100.8	
	ROU	79	51			41.2 e 100	**46.5 b 112.9**	**47.1 a 114.2**	44.6 d 108.2	46.4 b 112.7		
	ROU	85	57			39.7 b 100	**43.0 a 108.4**	**42.7 a 107.6**	43.1 a 108.7	42.9 a 108.2		
	ROU	91	63			41.6 c 100	**45.8 ab 110.0**	**45.8 ab 110.2**	45.7 ab 109.9	45.8 ab 110.2		
	HUN	97	80			38.1 a 100	**38.8 a 101.8**	**39.4 a 103.4**	37.3 a 97.8		39.6 a 104.0	
	HUN	98	81			41.0 a 100	**40.8 a 99.6**	**40.8 a 99.5**	39.4 a 96.2		41.7 a 101.8	
Mean				8	Mean Min Max	*41.1* 38.1 44.9	***105.6*** **99.2** **112.9**	***106.0*** **99.5** **114.2**	*104.2* 96.2 110.0			
Mean				4	Mean Min Max	*40.9* 39.7 41.6	***110.3*** **108.4** **112.9**	***110.3*** **107.6** **114.2**	*109.2* 108.2 110.0	*110.6* 108.2 112.7		
Mean				3	Mean Min Max	*41.3* 38.1 44.9	***100.2*** **99.2** **101.8**	***101.9*** **99.5** **103.4**	*98.9* 96.2 102.7		*102.2* 100.8 104.0	
Mean				1		*41.6*	***102.9***	***101.3***	*100.4*			*99.9*

Comments of zRMS:

The increase of the quality parameters of wheat yield has been noted after 2 applications of CA3642. In the Maritime EPPO climatic zone, the increase was 2,8% at 1,4 l/ha and 2,9% at 1,2 l/ha in case of HLW, 0,8% at 1,4 l/ha and 1,2% at 1,2 l/ha in case of moisture content, 8,3% at 1,4 l/ha and 6,7% at 1,2 l/ha in case of TGW. In the North-East EPPO zone, the increase was 1,8% at 1,4 l/ha and 2,3% at 1,2 l/ha in case of HLW, 2,5% at 1,4 l/ha and 2,1% at 1,2 l/ha in case of moisture content, 4,8% at 1,4 l/ha and 6,3% at 1,2 l/ha in case of TGW. In the South-East EPPO zone, CA3642 achieved results of 2,1% at 1,4 l/ha and 1,8% at 1,2 l/ha in case of HLW, 4% at 1,4 l/ha and 2,5% at 1,2 l/ha in case of moisture content, 5,6% at 1,4 l/ha and 6% at 1,2 l/ha in case of TGW. Taking into account all trials, slight positive impact on the quality parameters of wheat yield was visible.

Mycotoxin analyses

In ~~3~~ 6 trials from the Maritime and North-East EPPO zone each, the effect of CA3642 applied up to two times at dose rates of 1.2 and 1.4 L/ha was assessed in terms of effect on mycotoxin content. The trials were carried out in Germany (2), Great Britain (1) and Poland (3) in 2019. The first application took place at crop stage BBCH 37 - 39 and the second application was done 14 – 29 days later, at BBCH 61 - 69.

Results from Maritime EPPO zone:
For one trial, the mycotoxin analysis has shown the presence of Deoxynivalenol. However, levels were low, and there were no significant differences between any of the treatments. Levels of Nivalenol, T-2 toxin and HT-2 toxin were below the limit of determination (150 ppb).
For the second trial, the test items at all rates showed significant efficacy in reducing DON level (12293 – 14897 ppb) when compared to untreated (28425 ppb) and was higher than efficacy of the reference item (11882 ppb), although without statistical difference between test products and reference item. For NIV, HT-2 and T-2 no differences between treatment could be determined, all values were under 150 ppb, which corresponds with the below reporting limit.
For the third trial, lab analysis failed to show any difference in NIV, HT2 and T2 results with all plots returning <150ppb which is too low to give definitive figures but high enough to test presence. DON testing did highlight some plots noteably the untreated that registered real figures with the untreated plot in one replicate but not enough plots returned real values to show clear treatment differences.

Results from North-east EPPO zone:
For all three trials, mycotoxin analysis confirmed presence of mycotoxins produced by Fusarium, the results of analysis of DON and NIV show that mycotoxin ranged from 0 to 150 ppb, which were below the limit of determination.

Comments of zRMS:

6 trials have been submitted to determine an effect on mycotoxin content. CA3642 reduced level of mycotoxin to acceptable level in total of 6 trials. Levels of nivalenol, T-2 toxin, HT-2 toxin and deoxynivalenol were below the limit of determination (150 ppb). No results from the South-East zone were available for mycotoxin analyses.

Spelt (TRZSP)

As demonstrated for Spelt, application of CA3642 applied at 1.2-1.4 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.

In a total of one efficacy trial, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight was evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease.

Yield quantity and quality was assessed in a total of one efficacy trial carried out in the North-East (1 trial) EPPO zones in 2021.

The trial from the North-East EPPO zone was carried out in Poland (1 trial).

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Yield quantity (t/ha)

Yield quantity (t/ha) of spelt was evaluated in 1 efficacy trial, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases, in the North-East EPPO zone.

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield of spelt in the presence of disease. In fact, there was an increase in yield over the untreated plots in both trials from both dose rates. A statistically significant increase was observed in one trial for the 1.4 L/ha rate. No statistically significant differences were observed compared to the used reference standards.

Table 3.2-439: Yield (t/ha) effect of CA3642 in efficacy trials on Spelt – North-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**		**PRIAXOR PYR + FLU* 225 g/L EC**	**CA2702 AZX 250 g/L SC**
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.5 L/ha 225 g PYR/ha + 112.5 g FLU/ha**	**0.8 L/ha 200 g AZX/ha**
POL	Wirtas	77	59	t/ha cf UTC	2.02 b 100.0	**2.74 a** **135.6**	**2.47 ab** **121.9**	2.47 ab 122.0	2.33 ab 115.2
				Mean	*2.02*	***135.6***	***121.9***	*122.0*	*115.2*

UTC: % yield in untreated control at assessment date
* PCS + FLX: 150 g/L Pyraclostrobin + 75 g/L Fluxapyroxad

Comments of zRMS:

The mean yield of spelt increased after 2 applications of CA3642. In the North-East EPPO zone, the increase was 35,6% at 1,4 l/ha and 21,9% at 1,2 l/ha in 1 trial. Similar effect was visible for Priaxor (22%) and significant lower result for CA2702 (15,2%). In conclusion, positive impact on the spelt yield was observed after 2 application of CA3642.

Yield quality

Yield quantity in terms of hectolitre weight, moisture content and thousand grain weight were evaluated in 1 efficacy trial on spelt in the North-East EPPO zone, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases.

There were no significant differences in hectolitre weight or moisture content among plots treated with CA3642 or the untreated plots or those treated with the reference standards in either of the trials. Regarding thousand grain weight there no significant differences between plots treated with CA3642 or the untreated plots or plots treated with the reference standards in either trial.

Therefore, no adverse effects are expected from applications of CA3642 at the proposed dose rates.

Table 3.2-440: Yield quality (HLW [kg]) effect of CA3642 in efficacy trials on Spelt – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc. Type	UTC	CA3642 150g/L AZX + 150g/L PTZ 300 g/L SC		PRIAXOR PYR + FLU* 225 g/L EC	CA2702 AZX 250 g/L SC
					Rate		**1.4 L/ha 210g AZX/ha + 210g PTZ/ha**	**1.2 L/ha 180g AZX/ha + 180g PTZ/ha**	**1.5 L/ha 225g PYR/ha + 112.5g FLU/ha**	**0.8 L/ha 200g AZX/ha**
POL	Wirtas	82	64		HLW	43.35 a	**46.68 a**	**44.45 a**	45.08 a	45.60 a
					cf UTC	100.0	**107.7**	**102.5**	104.0	105.2
				1	*Mean*	*43.35*	***107.7***	***102.5***	*104.0*	*105.2*

UTC: untreated control at assessment date
** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Table 3.2-441: Yield quality (Moisture [%]) effect of CA3642 in efficacy trials on Spelt – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc. Type	UTC	CA3642 150g/L AZX + 150g/L PTZ 300 g/L SC		PRIAXOR PYR + FLU* 225 g/L EC	CA2702 AZX 250 g/L SC
					Rate		**1.4 L/ha 210g AZX/ha + 210g PTZ/ha**	**1.2 L/ha 180g AZX/ha + 180g PTZ/ha**	**1.5 L/ha 225g PYR/ha + 112.5g FLU/ha**	**0.8 L/ha 200g AZX/ha**
POL	Wirtas	77	59		MOICON	12.83 a	**13.20 a**	**12.90 a**	13.08 a	12.75 a
					cf UTC	100.0	**102.9**	**100.5**	101.9	99.4
				1	*Mean*	*12.83*	***102.9***	***100.5***	*101.9*	*99.4*

UTC: untreated control at assessment date
** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Table 3.2-442: Yield quality (TKW [%]) effect of CA3642 in efficacy trials on Spelt – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc. Type	UTC	CA3642 150g/L AZX + 150g/L PTZ 300 g/L SC		PRIAXOR PYR + FLU* 225 g/L EC	CA2702 AZX 250 g/L SC
					Rate		**1.4 L/ha 210g AZX/ha + 210g PTZ/ha**	**1.2 L/ha 180g AZX/ha + 180g PTZ/ha**	**1.5 L/ha 225g PYR/ha + 112.5g FLU/ha**	**0.8 L/ha 200g AZX/ha**
POL	Wirtas	82	64		TKW	39.720 b	**42.838 ab**	**42.563 ab**	43.443 a	40.058 ab
					cf UTC	100.0	**107.8**	**107.2**	109.4	100.8
				2	*Mean*	39.720	***107.8***	***107.2***	*109.4*	*100.8*

UTC: untreated control at assessment date
** PCS + FLX: 150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Comments of zRMS:

The increase of the quality parameters of spelt yield has been noted after 2 applications of CA3642. In the North-East EPPO zone, the increase was 7,7% at 1,4 l/ha and 2,5% at 1,2 l/ha in case of HLW, 2,9% at 1,4 l/ha and 0,5% at 1,2 l/ha in case of moisture content, 7,8% at 1,4 l/ha and 7,2% at 1,2 l/ha in case of TGW. In conclusion, slight positive impact on the quality parameters of spelt yield was visible.

Wheat Durum (TRZDU)

As demonstrated for durum wheat, application of CA3642 applied at 1.2-1.4 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In five efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease.

Yield quantity and quality was assessed a total of nine efficacy trials carried out in the Maritime (2 trials), and South-East (3 trials) EPPO zones between 2019 and 2021.

Trials from the Maritime EPPO zone were carried out in Germany (1 trial) and France (1 trial).
Trials from the South-East EPPO zone were carried out in Romania (1 trial) and Hungary (2 trials).

In addition, one trial with spring sown wheat durum TRZDU was available and respective yield and relevant quality indicators were assessed.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-13.

Yield quantity (t/ha)

Yield quantity (t/ha) was evaluated in nine efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases. CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield of durum wheat in the presence of disease. In fact, there was an increase in yield over the untreated control in some trials, with a statistically significant difference in three out of nine trials for both dose rates of CA3642. In a couple of trials, significant higher yield was observed compared to the used reference standards.

In the Maritime EPPO zone yield (t/ha) was assessed in 2 efficacy trials on wheat durum in the presence of diseases. Applications of CA3642 at both dose rates were comparable with the untreated control and the reference standards in 2 trials – varieties Voilur and Wintergold % (Table 3.2-34).

Table 3.2-443: Yield (t/ha) effect of CA3642 in efficacy trials on durum wheat – Maritime EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC			CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
						Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
GRAIN	FRA	Voilur	80	60		Yield cf UTC	9.4 a 100.0	**9.6 a** **102.0**	**9.4 a** **100.1**	9.4 a 100.4	9.6 a 101.8	9.5 a 100.6
	DEU	Winter-gold	87	53		Yield cf UTC	5.5 a 100.0	**6.2 a** **112.4**	**5.9 a** **106.4**	6.2 a 111.0	5.8 a 104.7	5.9 a 105.7
Mean Efficacy					*2*	*Mean* Min Max	*7.5* 5.5 9.4	***107.2*** **102.0** **112.4**	***103.3*** **100.1** **106.4**	*105.7* 100.4 111.0	*103.2* 101.8 104.7	*103.1* 100.6 105.7

UTC: % compared to untreated control at assessment date
* Just one disease present

In one trial conducted in the Maritime zone on variety Duramonte, yield was increased by 4 % from CA3642 applied at 1.4 L/ha or 1.2 L/ha respectively. This increase was non-significant, similarly yield was comparable to the reference formulations tested.

Table 3.2-444: Yield (t/ha) effect of CA3642 in an efficacy trial on durum wheat-spring sown – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTC 250 g/L EC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
DEU	Duramonte	68	51	Yield cf UTC	5.4 a 100	5.6 a 104	5.6 a 104	5.8 a 107	5.8 a 107
				Mean	*5.4*	*104*	*104*	*107*	*107*

In three trials in the South-East zone (varieties Atoudur, Wintergold(2)) were assessed (Table 3.2 443). In the three trials, both rates significantly increased yield compared to the untreated control. In two trials, yield was significantly higher for CA3642 compared to some of the reference standards: One trial, CA3642 applied at 1.2 L/ha and 1.4 L/ha significantly increased yield compared to CA2445 and one trial both intended dose rates of CA3642 significantly increased yield compared to CA2702. The mean increase in yield across the three trials was 17-19 %.

Table 3.2-445: Yield (t/ha) effect of CA3642 in efficacy trials on durum wheat – South-East EPPO zone

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**PRIAXOR 225 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g/L PCS + 75 g/L FLX**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
GRAIN	ROU	Atoudur	83	55		Yield cf UTC	4.2 c 100.0	**4.8 a 113.5**	4.9 a 115.3		4.9 a 115.0	4.6 b 108.4
	HUN	Winter-gold	84	60		Yield cf UTC	4.4 b 100.0	**5.5 a 126.0**	5.3 a 121.0	5.6 a 127.6	4.3 b 99.5	
	HUN	Winter-gold	84	60		Yield cf UTC	4.3 b 100.0	**5.2 a 119.4**	5.0 a 116.6	5.2 a 119.3	4.7 ab 107.7	
Mean Efficacy					*3*	*Mean* Min Max	*4.3* 4.2 4.4	***119.6*** **113.5** **126.0**	*117.6* 115.3 121.0		*107.4* 99.5 115.0	
Orthogonal comparison					*2*	*Mean* Min Max	*4.3* 4.3 4.4	***122.7*** **119.4** **126.0**	*118.8* 116.6 121.0	*123.4* 119.3 127.6	*103.6* 99.5 107.7	
					1		*4.2*	***113.5***	*115.3*		*115.0*	*108.4*

UTC: % compared to untreated control at assessment date
* Just one disease present

Comments of zRMS:

The mean yield of durum wheat increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 7,2% at 1,4 l/ha and 3,3% at 1,2 l/ha in 2 trials. Also good effect was observed in durum wheat spring sown. In the South-East EPPO zone, the increase was 19,6% at 1,4 l/ha and 17,6% at 1,2 l/ha in 3 trials. In conclusion, positive impact on the durum wheat yield was observed after 2 applications of CA3642.

Yield quality

Yield quality in terms of hectolitre weight, moisture content and thousand grain weight was evaluated in nine efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases.

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield quality parameters of wheat durum in the presence of disease. In fact, there was an increase in quality over the untreated for some trials. In one trial a significant difference was observed comparing CA3642 with CA2702. The values of yield quality (HLW, Table 3.2 444) obtained for both doses of CA3642 were significantly higher than for CA2702

In the Maritime EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 2 trials on durum wheat. There were no significant differences in HLW between CA3642 or the reference products or the untreated control in any of the trials. The mean values were the same for treated plots compared to untreated plots (Table 3.2 444). The moisture content and TGW in the two trials was comparable between CA3642, the untreated control and the reference standards (Table 3.2 445 and Table 3.2 446).

Table 3.2-446: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on durum wheat – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
GRAIN	FRA	85	65		HLW	83.5 a	**82.9 a**	83.9 a	83.8 a	83.5 a
					cf UTC	83.5	**99.2**	100.5	100.4	99.9
	DEU	87	53		HLW	71.3 a	**73.5 a**	70.4 a	71.1 a	70.7 a
					cf UTC	71.3	**103.2**	98.8	99.8	99.2
Mean Efficacy				*2*	*Mean*	*77.4*	***101.2***	*99.7*	*100.1*	*99.6*
					Min	71.3	**99.2**	98.8	99.8	99.2
					Max	83.5	**103.2**	100.5	100.4	99.9

UTC: % compared to untreated control at assessment date
* Just one disease present

Table 3.2-447: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on durum wheat – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 l/ha 200 g AZX/ha**	**0.8 l/ha 200 g PTZ/ha**
GRAIN	FRA	85	65		MOICON	10.3 a	**10.5 a**	10.5 a	10.5 a	10.4 a
					cf UTC	100.0	**101.7**	101.7	102.2	101.2
	DEU	87	53		MOICON	11.7 a	**11.8 a**	11.7 a	11.7 a	11.7 a
					cf UTC	100.0	**100.9**	100.3	100.7	100.3
Mean Efficacy				*2*	*Mean*	*11.0*	***101.3***	*101.0*	*101.4*	*100.7*
					Min	10.3	**100.9**	100.3	100.7	100.3
					Max	11.7	**101.7**	101.7	102.2	101.2

UTC: % compared to untreated control at assessment date

Table 3.2-448: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on durum wheat – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4l/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2l/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8l/ha 200 g AZX/ha**	**0.8l/ha 200 g PTZ/ha**

GRAIN	DEU	87	53		TKW cf UTC	27.6 a 100.0	**30.4 a** **110.1**	30.1 a 109.1	30.4 a 110.0	29.5 a 106.9
	FRA	97	77		TKW cf UTC	50.4 a 100.0	**51.8 a** **102.8**	52.8 a 104.7	51.1 a 101.3	51.5 a 102.3
Mean Efficacy				*2*	*Mean* Min Max	*39.0* 27.6 50.4	***106.5*** **102.8** **110.1**	*106.9* 104.7 109.1	*105.6* 101.3 110.0	*104.6* 102.3 106.9

UTC: % compared to untreated control at assessment date

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield quality parameters of durum wheat-spring sown in the presence of disease. No statistically significant differences were observed compared to the used reference standards.

There were no significant differences in HLW between CA3642 or the reference products or the untreated control in any of the trials. The mean values were the same for treated plots compared to untreated plots (Table 3.2 447). The moisture content in the trial was comparable between CA3642 and the reference standards. There were no significant differences between CA3642 and the reference products when assessing TGW.

Table 3.2-449: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on durum wheat - spring – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
DEU	Duramonte	68	51	HLW cf UTC	71.0 a 100	70.8 a 99.7	70.8 a 99.7	71.1 a 100.1	73.1 a 103.0
				Mean	*71.0*	*99.7*	*99.7*	*100.1*	*103.0*

Table 3.2-450: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on durum wheat - spring – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
DEU	Duramonte	68	51	MOICON cf UTC	16.1 a 100	16.1 a 100.0	15.3 a 95.3	15.9 a 98.8	16.1 a 100.0
				Mean	*16.1*	*100.0*	*95.3*	*98.8*	*100.0*

Table 3.2-451: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on durum wheat - spring – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
DEU	Duramonte	68	51	TKW cf UTC	44.9 a 100	44.8 a 99.7	44.9 a 100.0	45.3 a 100.9	46.3 a 103.1
				Mean	*44.9*	*99.7*	*100.0*	*100.9*	*103.1*

In the South-East EPPO zone yield quality in terms of HLW (Table 3.2 450), moisture content (Table 3.2 451) and TGW (Table 3.2 452) was assessed in 3 trials on durum wheat, varieties Wintergold (2) and Atoudur. For each of the quality parameters CA3642 were statistically comparable and with higher values that untreated plots and to the reference standards. For HLW (HLW, Table 3.2-43) values for one trial were significantly higher for both intended doses of CA3642 compared to the untreated control. For the same parameter, in another trial (HLW, Table 3.2-43), the value obtained for the highest dose of CA3642 resulted to be statistically higher than for the untreated control and for the reference CA2702. For moisture content (Table 3.2-44) in one trial and for TGW (Table 3.2-45) in two trials, statistically higher values were obtained for CA3642 (1.4 L ha and 1.2 L/ha) when compared to the untreated control. There were no significant differences between CA3642 and the reference standard for these parameters.

Table 3.2-452: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on durum wheat – South-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		PRIAXOR PCS + FLX 225 g/L EC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g/L PCS + 75 g/L FLX**	**0.8 L/ha 200 g AZX /ha**	**0.8 L/ha 200 g PTZ /ha**
GRAIN	ROU	83	55		HLW cf UTC	81.1 b 100.0	**81.8 a 100.8**	81.9 a 100.9		81.6 a 100.6	81.6 a 100.6
	HUN	98	74		HLW cf UTC	80.0 b 100.0	**81.6 a 102.0**	80.9 ab 101.1	81.5 a 101.9	80.1 b 100.0	
	HUN	98	74		HLW cf UTC	81.1 a 100.0	**81.4 a 100.4**	80.9 a 99.8	81.1 a 100.1	81.0 a 99.9	
Mean Efficacy				*3*	*Mean* Min Max	*80.8* 80.0 81.1	***101.1*** **100.4** **102.0**	*100.6* 99.8 101.1		*100.2* 99.9 100.6	
Orthogonal comparison				*2*	*Mean* Min Max	*80.6* 80.0 81.1	***101.2*** **100.4** **102.0**	*100.4* 99.8 101.1	*101.0* 100.1 101.9	*100.0* 99.9 100.0	
				1		*81.1*	***100.8***	*100.9*		*100.6*	*100.6*

UTC: % compared to untreated control at assessment date

Table 3.2-453: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on durum wheat – South-East EPPO zone

Part Rated	Country	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		PRIAXOR PCS + FLX 225 g/L EC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g/L PCS + 75 g/L FLX**	**0.8 L/ha 200 g AZX /ha**	**0.8 L/ha 200 g PTZ /ha**
GRAIN	ROU	83	55		MOICON cf UTC	13.3 c 100.0	13.6 ab 102.5	13.8 ab 104.0		13.8 ab 104.0	13.6 abc 101.9
	HUN	84	60		MOICON cf UTC	13.0 a 13.0	13.0 a 100.0	12.9 a 99.8	13.0 a 100.2	13.0 a 100.0	
	HUN	84	60		MOICON cf UTC	13.2 a 100.0	13.3 a 100.4	13.3 a 100.8	13.4 a 100.9	13.3 a 100.5	
Mean Efficacy				*3*	*Mean* Min Max	*13.2* 13.0 13.3	*101.0* 100.0 102.5	*101.5* 99.8 104.0		*101.5* 100.0 104.0	
Orthogonal comparison				*2*	*Mean*	*13.1*	*100.2*	*100.3*	*100.6*	*100.3*	

		Min Max	13.0 13.2	100.0 100.4	99.8 100.8	100.2 100.9	100.0 100.5	
	1		*13.3*	*102.5*	*104.0*		*104.0*	*101.9*

UTC: % compared to untreated control at assessment date

Table 3.2-454: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on durum wheat – South-East EPPO zone

Part Rated	**Country**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**PRIAXOR PCS + FLX 225 g/L EC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.0 L/ha 150 g/L PCS + 75 g/L FLX**	**0.8 L/ha 200 g AZX /ha**	**0.8 L/ha 200 g PTZ /ha**
GRAIN	ROU	83	55		TKW cf UTC	47.0 c 100.0	**49.2 ab 104.7**	49.7 a 105.7		49.5 a 105.3	49.1 ab 104.5
	HUN	98	74		TKW cf UTC	46.2 b 100.0	**49.9 a 107.9**	47.8 ab 103.4	50.3 a 108.9	46.7 ab 101.1	
	HUN	98	74		TKW cf UTC	46.3 a 100.0	**46.7 a 100.9**	46.9 a 101.3	48.3 a 104.3	48.0 a 103.7	
Mean Efficacy				*3*	*Mean* Min Max	*46.5* 46.2 47.0	***104.5*** **100.9** **107.9**	*103.4* 101.3 105.7		*103.4* 101.1 105.3	
Orthogonal comparison				*2*	*Mean* Min Max	*46.2* 46.2 46.3	***104.4*** **100.9** **107.9**	*102.3* 101.3 103.4	*106.6* 104.3 108.9	*102.4* 101.1 103.7	
				1		*47.0*	***104.7***	*105.7*		*105.3*	*104.5*

UTC: % compared to untreated control at assessment date
* Just one disease present

Comments of zRMS:

The increase of the quality parameters of durum wheat yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 1,2% at 1,4 l/ha and 0% at 1,2 l/ha in case of HLW, 1,3% at 1,4 l/ha and 1% at 1,2 l/ha in case of moisture content, 6,5% at 1,4 l/ha and 6,9% at 1,2 l/ha in case of TGW. In the South-East EPPO zone, CA3642 achieved results of 1,1% at 1,4 l/ha and 0,6% at 1,2 l/ha in case of HLW, 1% at 1,4 l/ha and 1,5% at 1,2 l/ha in case of moisture content, 4,5% at 1,4 l/ha and 3,4% at 1,2 l/ha in case of TGW. In conclusion, slight positive impact on the quality parameters of durum wheat yield was visible.

Triticale (TTLWI)

As demonstrated for winter triticale, application of CA3642 applied at 1.2-1.4 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In a total of 12 efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease.

Yield quantity and quality was assessed a total of 12 efficacy trials carried out in the Maritime (5 trials), North-East (2 trials) and South-East (5 trials) EPPO zones between 2019 and 2020.

Trials from the Maritime EPPO zone were carried out in France (2 trials) and Germany (3 trials).
Trials from the North-East EPPO zone were carried out in Poland (2 trials).
Trials from the South-East EPPO zone were carried out in Hungary (2 trials) and Romania (2 trials).

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Yield quantity (t/ha)

Yield quantity (t/ha) was evaluated in 12 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases.

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield of winter triticale in the presence of disease. In fact, there was an increase in yield over the untreated in the majority of trials, with a statistically significant difference in 7 out of 12 trials for both dose rates, and 8 of 12 trials for the higher dose rate.
Compared to the reference standards, CA3642 gave statistically equivalent yield except in 2 instances where yield was significantly higher compared to some of the reference standards (CA2702 in one trial and CA2445 in one trial).
In the Maritime EPPO zone yield (t/ha) was assessed in 5 trials on winter triticale. Applications of CA3642 at both dose rates significantly increased yield compared to the untreated control in 4 of the 5 trials – varieties Lombardo, Talentro, Temuco and Triskell. In the other trial on variety Brehat, the yield was increased but the difference was not statistically significant. The mean increase in yield across the 5 trials was 14-15% (Table 3.2-455). Compared to the reference standards, CA3642 was statistically equivalent except on variety Triskell where the 1.4 l/ha rate gave significantly higher yield compared to CA2702.

Table 3.2-455: Yield (t/ha) effect of CA3642 in efficacy trials on winter triticale – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445/JOAO PTZ 250 g/L EC	CA2702 AZX 250 g/L SC
				Rate		1.4 L/ha	1.2 L/ha	0.8 L/ha	0.8 L/ha
						210 g AZX/ha + 210 g PTZ/ha	180 g AZX/ha + 180 g PTZ/ha	200 g PTZ/ha	200 g AZX/ha

DEU	Talentro	100	70	t/ha cf UTC	9.61 b 100.0	**11.36 a** **118.3**	**11.27 a** **117.3**	10.71 a 111.4	10.37 a 108.0
FRA	Triskell	96	80	t/ha cf UTC	5.87 c 100.0	**7.17 a** **122.1**	**6.83 ab** **116.4**	6.84 ab 116.5	6.37 b 108.4
DEU	Temuco	119	88	t/ha cf UTC	8.64 b 100.0	**10.06 a** **116.4**	**9.59 a** **111.0**	9.36 ab 108.4	9.48 a 109.7
DEU	Lombardo	96	76	t/ha cf UTC	9.12 b 100.0	**9.98 a** **109.3**	**10.40 a** **114.0**	9.82 ab 107.6	9.83 ab 107.7
FRA	Brehat	100	85	t/ha cf UTC	6.07 a 100.0	**6.57 a** **108.2**	**6.88 a** **113.3**	6.11a 100.7	6.56 a 108.0
			5	*Mean* Min Max	*7.9* 5.9 9.6	***114.9*** **108.2** **122.1**	***114.4*** **111.0** **117.3**	*108.9* 100.7 116.5	*108.4* 107.7 109.7
			2	*Mean* Min Max	*7.7* 5.9 9.6	***120.2*** **118.3** **122.1**	***116.9*** **116.4** **117.3**	*113.9* 111.4 116.5	*108.2* 108.0 108.4

UTC: untreated control at assessment date

The mean increase in yield across the two trials in the North-East EPPO zone was 8% and 12% from CA3642 applied at 1.4 L/ha or 1.2 L/ha respectively. In one trial (variety Rotondo) the yield from CA3642 was statistically equivalent to the untreated plots, in the other trial on variety Orinoko the yield increase from CA3642 applied at 1.4 l/ha was significantly higher compared to the untreated plots. There were no significant differences among yield from plots treated with CA3642 or with the reference standards (Table 3.2-456).
Due to the low number of trials, a statistically conclusive evaluation of the performance is difficult and single results could be considered as biological variability.

Table 3.2-456: Yield (t/ha) effect of CA3642 in efficacy trials on winter triticale – North-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**OSIRIS 65 EC EPC +MTC* 65 g/L EC**	**CA2702 AZX 250 g/L SC**
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**2 L/ha 75 g EPC/ha + 55g MTC/ha**	**0.8 L/ha 200 g AZX/ha**
POL	Rotondo	91	57	t/ha cf UTC	6.43 a 100.0	**6.40 a** **99.4**	**7.36 a** **114.4**	6.04 a 93.9	7.08 a 110.1
POL	Orinoko	119	72	t/ha cf UTC	6.62c 100.0	**7.68 ab** **116.1**	**7.23 abc** **109.3**	7.04 bc 106.3	7.02 bc 106.0
			n=2	*Mean* Min Max	*6.5* 6.4 6.6	***107.8*** **99.4** **116.1**	***111.8*** **109.3** **114.4**	*100.1* 93.9 106.3	*108.1* 106.0 110.1

UTC: untreated control at assessment date
* EPC + MTC: Epoxiconazole + Metconazole

In the South-East EPPO zone yield was assessed in 5 trials on winter triticale. (Table 3.2-457). The mean increase in yield across the 5 trials was 15.5-17% for CA3642 applied at 1.4 L/ha or 1.2 L/ha respectively compared to untreated check. In three out of five trials, the increase was statistically significant. The performance of all reference standards in the five trials was comparable, except in 1 trial where CA2445 gave significantly lower yield compared to CA3642 at both dose rates.

Table 3.2-457: Yield (t/ha) effect of CA3642 in efficacy trials on winter triticale – South-East EPPO zone

Coun try	**Variety**	**DA -A**	**DA -B**	**Na-me Con c Ty-pe**	**UT C**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**PRIA-XOR PCS + FLX* 225 g/L EC**	**CA2702 AZX 250 g/L SC**	**NATIVO PRO 325 PTZ+TFS** 325 g/L SC**	**CA2445 PTZ 250 g/L EC**
				Rate		**1.4 L/ha 210 g AZX/ha +**	**1.2 L/ha 180 g AZX/ha +**	**1.5 L/ha 225 g PCS/ha +**	**0.8 L/ha 200 g AZX/ha**	**1.0 L/ha 175 g PTZ + 150 g TFS/ha**	**0.8 L/ha 200 g PTZ/ha**

						210 g PTZ/ha	180 g PTZ/ha	112.5 g FLX/ha			
ROU	Gorun	70	52	t/ha	3.945 c	**4.964 a**	**4.951 a**		4.835 ab	4.872ab	
				cf UTC	100.0	**125.8**	**125.5**		122.6	123.5	
ROU	Haiduc	71	53	t/ha	4.346 b	**4.856 a**	**4.784 a**		4.776 a	4.828 a	
				cf UTC	100.0	**111.7**	**110.1**		109.9	111.1	
ROU	Haiduc	81	53	t/ha	4.956 e	**5.615 ab**	**5.574 ab**		5.528 abc	5.659 a	5.409 cd
				cf UTC	100.0	**113.3**	**112.5**		111.5	114.2	109.1
HUN	*Farmer's source (unknown)*	98	81	t/ha	3.382 a	**4.240 a**	**4.316 a**	4.200 a	4.022 a		
				cf UTC	100.0	**125.4**	**127.6**	124.2	118.9		
HUN	GK Szemes	128	104	t/ha	8.003 a	**8.677 a**	**8.160 a**	8.303 a	8.044 a		8.650 a
				cf UTC	100.0	**108.4**	**102.0**	103.7	100.5		108.1
Orthogonal comparisons			*n=5*	*Mean*	*4.9*	***116.9***	***115.5***		*112.7*		
				Min	3.4	**108.4**	**102.0**		100.5		
				Max	8.0	**125.8**	**127.6**		122.6		
			n=3	*Mean*	*4.4*	***117.0***	***116.0***		*114.7*	*116.3*	
				Min	3.4	**111.7**	**110.1**		109.9	111.1	
				Max	5.0	**125.8**	**125.5**		122.6	123.5	
			n=2	*Mean*	*5.7*	***116.9***	***114.8***	*114.0*	*109.7*		
				Min	3.4	**108.4**	**102.0**	103.7	100.5		
				Max	8.0	**125.4**	**127.6**	124.2	118.9		
			n=1	*Mean*	*4.956*	***113.3***	***112.5***		*111.5*	*114.2*	*109.1*
			n=1	*Mean*	*8.003*	***108.4***	***102.0***	*103.7*	*100.5*		*108.1*

UTC: untreated control at assessment date
* PCS + FLX: Pyraclostrobin + Fluxapyroxad
** TFS – Trifloxistrobin

Comments of zRMS:

The mean yield of winter triticale wheat increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 14,9% at 1,4 l/ha and 14,4% at 1,2 l/ha in 5 trials. Significant lower results were observed for the reference products of CA2445 (8,9%) and CA2702 (8,4%). In the North-East EPPO zone, the increase was 7,8% at 1,4 l/ha and 11,8% at 1,2 l/ha in 2 trials. Significant lower results were observed for the reference products of CA2445 (0,1%) and CA2702 (8,1%). In the South-East EPPO zone, the increase was 16,9% at 1,4 l/ha and 15,5% at 1,2 l/ha in 5 trials. Comparable results was visible for CA2702 (12,7%). In conclusion, positive impact on the winter triticale yield was observed after 2 applications of CA3642.

Yield quality

Yield quality in terms of hectolitre weight, moisture content and thousand grain weight was evaluated in 12 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases.

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield quality parameters of winter triticale in the presence of disease. In fact, there was an increase in quality over the untreated in the majority of trials.

In the Maritime EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 5 trials on winter triticale.

There were no significant differences in HLW between CA3642 or the reference products or the untreated control in any of the trials. The mean values showed a slight increase compared to untreated plots, comparable to the reference standards (Table 3.2-457).

The moisture content in all 5 trials (Table 3.2-459) was comparable between CA3642 and the reference standards and the untreated. No statistically significant differences were assessed.

In 1 trial (Table 3.2-460), on variety Talentro, the TGW was significantly higher in plots treated with CA3642 (and the reference standards) compared to untreated plots, and in the other trials the values were comparable to the untreated control. There were no significant differences between CA3642 and the reference products in any of the trials.

Table 3.2-458: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter triticale – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445/JOAO PTZ 250 g/L EC	CA2702 AZX 250 g/L SC
				Rate		**1.4 L/ha**	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**
DEU	Talentro	100	70	HLW cf UTC	73.35 a 100.0	**74.30 a** **101.3**	**73.90 a** **100.7**	74.33 a 101.3	74.33 a 101.3
FRA	Triskell	96	80	HLW cf UTC	67.93 a 100.0	**69.53 a** **102.4**	**70.60 a** **103.9**	69.68 a 102.6	69.75 a 102.7
DEU	Temuco	119	88	HLW cf UTC	69.58 a 100.0	**69.81 a** **100.3**	**69.59 a** **100.0**	70.11 a 100.8	70.71 a 101.6
DEU	Lombardo	96	76	HLW cf UTC	73.53 a 100.0	**73.28 a** **99.7**	**74.43 a** **101.2**	74.20 a 100.9	73.63 a 100.1
FRA	Brehat	100	85	HLW cf UTC	71.75 a 100.0	**72.48 a** **101.0**	**72.43 a** **100.9**	71.55 a 99.7	71.60 a 99.8
			5	*Mean* Min Max	*71.2* 67.9 73.5	***100.9*** **99.7** **102.4**	***101.4*** **100.0** **103.9**	*101.1* 99.7 102.6	*101.1* 99.8 102.7
			2	*Mean* Min Max	*70.6* 67.9 73.4	***101.8*** **101.3** **102.4**	***102.3*** **100.7** **103.9**	*102.0* 101.3 102.6	*102.0* 101.3 102.7

UTC: untreated control at assessment date

Table 3.2-459: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter triticale – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445/JOAO PTZ 250 g/L EC	CA2702 AZX 250 g/L SC
				Rate		**1.4 L/ha**	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**
DEU	Talentro	100	70	MOICON cf UTC	9.18 a 100.0	**9.32 a** **101.5**	**9.32 a** **101.6**	9.32 a 101.6	9.31 a 101.5
FRA	Triskell	96	80	MOICON cf UTC	9.48 a 100.0	**9.73 a** **102.6**	**9.63 a** **101.6**	9.55 a 100.7	9.63 a 101.6
DEU	Temuco	119	88	MOICON cf UTC	15.96 a 100.0	**16.17 a** **101.4**	**15.95 a** **99.9**	16.10 a 100.9	16.07 a 100.7
DEU	Lom-	96	76	MOICO	12.35	**12.53 a**	**12.60 a**	12.63 a	12.55 a

	bardo			N cf UTC	a 100.0	**101.5**	**102.0**	102.3	101.6
FRA	Brehat	100	85	MOICON cf UTC	12.35 a 100.0	**12.53 a** **100.3**	**12.60 a** **99.3**	12.63 a 99.3	12.55 a 99.3
			5	*Mean* Min Max	11.4 9.2 16.0	***101.5*** **100.3** **102.6**	***100.9*** **99.3** **102.0**	*101.0* 99.3 102.3	*100.9* 99.3 101.6
			2	*Mean* Min Max	9.3 9.2 9.5	***102.1*** **101.5** **102.6**	***101.6*** **101.6** **101.6**	*101.2* 100.7 101.6	*101.5* 101.5 101.6

UTC: untreated control at assessment date

Table 3.2-460: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter triticale – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445/Joao PTZ 250 g/L EC	CA2702 AZX 250 g/L SC
				Rate		**1.4 L/ha**	**1.2 L/ha**	**0.8 L/ha**	**0.8 L/ha**
						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**200 g PTZ/ha**	**200 g AZX/ha**
DEU	Talentro	100	70	TKW cf UTC	43.45 b 100.0	**46.68 a** **107.4**	**46.70 a** **107.5**	45.98 a 105.8	47.03 a 108.2
FRA	Triskell	96	80	TKW cf UTC	32.08 a 100.0	**34.35 a** **107.1**	**31.43 a** **98.0**	31.98 a 99.7	30.80 a 96.0
DEU	Temuco	119	88	TKW cf UTC	53.41 a 100.0	**53.83 a** **100.8**	**53.92 a** **101.0**	55.20 a 103.3	54.72 a 102.4
DEU	Lombardo	96	76	TKW cf UTC	49.10 a 100.0	**50.65 a** **103.2**	**52.40 a** **106.7**	52.65 a 107.2	53.05 a 108.0
FRA	Brehat	100	85	TKW cf UTC	37.69 a 100.0	**35.62 a** **94.5**	**34.18 a** **90.7**	33.71 a 89.5	34.43 a 91.3
			5	*Mean* Min Max	43.1 32.1 53.4	***102.6*** **94.5** **107.4**	***100.8*** **90.7** **107.5**	*101.1* 89.5 107.2	*101.2* 91.3 108.2
			2	*Mean* Min Max	37.8 32.1 43.5	***107.3*** **107.1** **107.4**	***102.7*** **98.0** **107.5**	*102.8* 99.7 105.8	*102.1* 96.0 108.2

UTC: untreated control at assessment date

In the North-East EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 2 trials on winter triticale (Table 3.2-461 -
Table 3.2-463). In both trials CA3642 was statistically comparable to untreated plots and to the reference standards in assessments for HLW.
CA3642 did not significantly affect moisture content compared to the untreated control, and there were no statistically significant differences compared to the reference standards except for the 1.4 l/ha rate compared to OSIRIS 65 EC, where moisture content was significantly lower in the latter on variety Rotondo.
In 1 trial there were no statistically significant differences in TGW among CA3642 or untreated plots or those treated with the reference standards. In the other trial on variety Orinoko, applications of CA3642 at 1.4 l/ha significantly increased TGW compared to the untreated control, whilst for the other treatments there were no significant differences compared to the untreated or compared to the other treatments.

Table 3.2-461: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter triticale – North-East EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		OSIRIS 65 EC EPC + MTC* 65 g/L EC	CA2702 AZX 250 g/L SC
				Rate		**1.4 L/ha**	**1.2 L/ha**	**2.0 L/ha**	**0.8 L/ha**

						210 g AZX/ha + 210 g PTZ/ha	**180 g AZX/ha + 180 g PTZ/ha**	**75 g EPC/ha + 55g MTC/ha**	**200 g AZX/ha**
POL	Roton-do	91	57	HLW	74.6 ab	**72.5 b**	**75.1 ab**	74.7 ab	74.8 ab
				cf UTC	100.0	**97.2**	**100.6**	100.1	100.2
POL	Orinoko	119	72	HLW	75.4 a	**76.0 a**	**76.2 a**	75.5 a	75.9 a
				cf UTC	100.0	**100.7**	**101.0**	100.1	100.6
			n=2	*Mean*	*75.0*	***99.0***	***100.8***	*100.1*	*100.4*
				Min	74.6	**97.2**	**100.6**	100.1	100.2
				Max	75.4	**100.7**	**101.0**	100.1	100.6

UTC: untreated control at assessment date
*EPC + MTC: Epoxiconazole + Metconazole

Table 3.2-462: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter triticale – North-East EPPO zone

Count-ry	**Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**OSIRIS 65 EC EPC + MTC* 65 g/L EC**	**CA2702 AZX 250 g/L SC**
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55g MTC/ha**	**0.8 L/ha 200 g AZX/ha**
POL	Roton-do	91	57	MOICON	10.9 ab	**11.2 a**	**10.6 ab**	9.8 b	10.8 ab
				cf UTC	100.0	**103.0**	**97.5**	89.4	99.4
POL	Orinoko	119	72	MOICON	10.2 a	**10.6 a**	**10.5 a**	10.3 a	10.3 a
				cf UTC	100.0	**103.6**	**102.7**	101.5	101.5
			n=2	*Mean*	*10.5*	***103.3***	***100.1***	*95.5*	*100.4*
				Min	10.2	**103.0**	**97.5**	89.4	99.4
				Max	10.9	**103.6**	**102.7**	101.5	101.5

Table 3.2-463: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter triticale – North-East EPPO zone

Count-ry	**Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**OSIRIS 65 EC EPC + MTC* 65 g/L EC**	**CA2702 AZX 250 g/L SC**
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**2.0 L/ha 75 g EPC/ha + 55g MTC/ha**	**0.8 L/ha 200 g AZX/ha**
POL	Roton-do	91	57	TGW	30.4 ab	**30.9 ab**	**36.6 a**	29.2 b	31.6 ab
				cf UTC	100.0	**101.9**	**120.5**	96.1	103.9
POL	Orinoko	119	72	TGW	50.8 b	**54.2 a**	**52.6 ab**	51.8 ab	51.9 ab
				cf UTC	100.0	**106.6**	**103.5**	101.9	102.2
			n=2	*Mean*	*40.6*	***104.3***	***112.0***	*99.0*	*103.1*
				Min	*30.4*	**101.9**	**103.5**	96.1	102.2
				Max	*50.8*	**106.6**	**120.5**	101.9	103.9

UTC: untreated control at assessment date
*EPC + MTC: Epoxiconazole + Metconazole

In the South-East EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 5 trials on winter triticale (Table 3.2-464 – Błąd! Nie można odnaleźć źródła odwołania.).

Of the 5 trials assessed for HLW, applications of CA3642 at both dose rates significantly increased HLW in 3 trials compared to the untreated (variety Gorun and both trials on variety Haiduc). This was also observed for the reference standards in these trials, with no significant differences among CA3642 and other treatments except in 1 trial where CA2445 gave significantly lower HLW. In the other 2 trials there were no statistically significant differences among CA3642, untreated plots and the reference standards. Mean values from all trials showed an overall increase in HLW from applications of CA3642.

In assessments for moisture content, CA3642 significantly increased moisture content compared to untreated plots on variety Gorun, this was also observed for the reference standards CA2702 and NATIVO PRO, as well as CA3642 in both trials on variety Haiduc. This was not observed for CA2445 which was present in one of these trials, although the values were not significantly different to the other treated plot. In 2 of these 3 trials CA3642 applied at 1.4 l/h significantly increased moisture content compared to CA2702 and NATIVO PRO. In the other 2 trials there were no statistically significant differences among CA3642, untreated plots and the reference standards.

In assessments for TKW, applications of CA3642 at both dose rates and the reference standards significantly increased HLW in 3 trials compared to the untreated (variety Gorun and both trials on variety Haiduc). In 2 of these trials there were no statistically significant differences among CA3642 and the reference standards. In 1 of these 3 trials, both rates of CA3642 gave significantly higher TKW compared to CA2445, and the rate of 1.2 l/ha was significantly lower compared to NATIVO PRO. In the other 2 trials there were no statistically significant differences in TKW among CA3642, untreated plots and the reference standards.

Table 3.2-464: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter triticale – South-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**PRIAXOR PCS + FLX* 225 g/L EC**	**CA2702 AZX 250 g/L SC**	**NATIVO PRO 325 PTZ+TFS** 325 g/L SC**	**CA2445 PTZ 250 g/L EC**
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**0.8 L/ha 200 g AZX/ha**	**1.0 L/ha 175 g PTZ + 150 g TFS/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	Gorun	70	52	HLW cf UTC	69.4 c 100.0	**70.15 a** **101.1**	**70.15 a** **101.1**		70.00 ab 100.9	70.08 ab 101.0	
ROU	Haiduc	71	53	HLW cf UTC	71.6 b 100.0	**71.98 a** **100.6**	**72.05 a** **100.7**		72.00 a 100.6	71.93 a 100.5	
ROU	Haiduc	81	53	HLW cf UTC	74.9 c 100.0	**75.50 a** **100.8**	**75.45 a** **100.8**		75.45 a 100.8	75.53 a 100.9	75.23 b 100.5
HUN	*Farmer's source (unknown)*	98	81	HLW cf UTC	66.9 a 100.0	**67.55 a** **101.0**	**67.68 a** **101.2**	68.48 a 102.4	68.17 a 102.0		
HUN	GK Szemes	128	104	HLW cf UTC	73.6 a 100.0	**72.70 a** **98.8**	**73.80 a** **100.3**	72.50 a 98.5	72.60 a 98.6		73.50 a 99.9
Mean			*n=5*	*Mean* Min Max	*71.3* 66.9 74.9	***100.5*** **98.8** **101.1**	***100.8*** **100.3** **101.2**		*100.6* 98.6 102.0		
Orthogonal compa-			*n=3*	*Mea*	*71.9*	***100.8***	***100.8***		*100.8*	*100.8*	

rison			*n* Min Max	 66.9 74.9	 **100.6** **101.1**	 **100.7** **101.1**		 100.6 100.9	 100.5 101.0	
		n=2	*Mean* Min Max	*70.2* 66.9 73.6	***99.9*** **98.8** **101.0**	***100.8*** **100.3** **101.2**	*100.5* 98.5 102.4	*100.3* 98.6 102.0		
		n=2	*Mean* Min Max	*74.3* 73.6 74.9	***99.8*** **98.8** **100.8**	***100.6*** **100.3** **100.8**		*99.7* 98.6 100.8		*100.2* 99.9 100.5

UTC: untreated control at assessment date
* PCS + FLX: Pyraclostrobin + Fluxapyroxad
** TFS – Trifloxistrobin

Table 3.2-465: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter triticale – South-East EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		PRIA-XOR PCS + FLX* 225 g/L EC	CA2702 AZX 250 g/L SC	NATIVO PRO 325 PTZ+TFS** 325 g/L SC	CA2445 PTZ 250 g/L EC
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**0.8 L/ha 200 g AZX/ha**	**1.0 L/ha 175 g PTZ + 150 g TFS/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	Gorun	70	52	MOICON cf UTC	13.7 d 100.0	**14.28 a** **104.4**	**14.25 ab** **104.2**		13.93 bcd 101.8	13.93 bcd 101.8	
ROU	Haiduc	71	53	MOICON cf UTC	14.0 d 100.0	**14.78 a** **105.7**	**14.65 ab** **104.8**		14.20 c 101.6	14.48 bc 103.6	
ROU	Haiduc	81	53	MOICON cf UTC	13.3 b 100.0	**13.73 a** **103.0**	**13.65 a** **102.4**		13.58 a 101.9	13.68 a 102.6	13.50 ab 101.3
HUN	*Farmer's source (unknown)*	98	81	MOICON cf UTC	10.8 a 100.0	**10.95 a** **101.1**	**10.88 a** **100.5**	10.80 a 99.7	10.95 a 101.1		
HUN	GK Sze-mes	128	104	MOICON cf UTC	13.0 a 100.0	**12.93 a** **99.8**	**13.08 a** **101.0**	13.08 a 101.0	13.03 a 100.6		12.70 a 98.1
Mean			*n=5*	*Mean* Min Max	*13.0* 10.8 14.0	***102.8*** **99.8** **105.7**	***102.6*** **100.5** **104.8**		*101.4* 100.6 101.9		
Orthogonal comparison			*n=3*	*Mean* Min Max	*13.7* 10.8 14.0	***104.4*** **103.0** **105.7**	***103.8*** **102.4** **104.8**		*101.8* 101.6 101.9	*102.7* 101.8 103.6	
			n=2	*Mean* Min Max	*11.9* 10.8 13.0	***100.5*** **99.8** **101.1**	***100.7*** **100.5** **101.0**	*100.4* 99.7 101.0	*100.9* 100.6 101.1		
			n=2	*Mean* Min Max	*13.2* 13.0 13.3	***101.4*** **99.8** **103.0**	***101.7*** **101.0** **102.4**		*101.3* 101.9 100.6		*99.7* 98.1 101.3

UTC: untreated control at assessment date
* PCS + FLX: Pyraclostrobin + Fluxapyroxad
** TFS - Trifloxistrobin

Table 3.2-466: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on winter triticale – South-East EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		PRIAXOR PCS + FLX 225 g/L EC	CA2702 AZX 250 g/L SC	NATIVO PRO 325 PTZ+TFS 325 g/L SC	CA2445 PTZ 250 g/L EC
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**	**0.8 L/ha 200 g AZX/ha**	**1.0 L/ha 175 g PTZ + 150 g TFS/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	Gorun	70	52	TKW	38.56 b	**42.28 a**	**41.83 a**		41.59 a	41.84 a	
				cf UTC	100.0	**109.6**	**108.5**		107.9	108.5	
ROU	Haiduc	71	53	TKW	47.61 e	**49.72 ab**	**49.53 bc**		49.51 bc	49.87 a	49.14 d
				cf UTC	100.0	**104.4**	**104.0**		104.0	104.8	103.2
ROU	Haiduc	81	53	TKW	40.00 b	**45.04 a**	**45.04 a**		44.97 a	44.87 a	
				cf UTC	100.0	**112.6**	**112.6**		112.4	112.2	
HUN	*Farmer's source (unknown)*	98	81	TKW	37.40 a	**37.89 a**	**38.15 a**	37.21 a	37.54 a		
				cf UTC	100.0	**101.3**	**102.0**	99.5	100.4		
HUN	GK Szemes	128	104	TKW	43.85 a	**43.85 a**	**44.60 a**	44.35 a	44.60 a		43.30 a
				cf UTC	100.0	**100.0**	**101.7**	101.1	101.7		98.7
Mean			*n=5*	*Mean*	*41.5*	***105.6***	***105.8***		*105.3*		
				Min	37.4	**100.0**	**101.7**		100.4		
				Max	47.6	**112.6**	**112.6**		112.4		
Orthogonal comparison			*n=3*	*Mean*	*42.1*	***108.9***	***108.4***		*108.1*	*108.5*	
				Min	37.4	**104.4**	**104.0**		104.0	104.8	
				Max	47.6	**112.6**	**112.6**		112.4	112.2	
			n=2	*Mean*	*40.6*	***100.7***	***101.9***	*100.3*	*101.0*		
				Min	37.4	**100.0**	**101.7**	99.5	100.4		
				Max	43.9	**101.3**	**102.0**	101.1	101.7		
			n=2	*Mean*	*45.8*	***102.2***	***102.9***		*102.7*		*101.0*
				Min	47.6	**100.0**	**101.7**		101.7		103.2
				Max	43.9	**104.4**	**104.0**		104.0		98.7

UTC: untreated control at assessment date
* PCS + FLX: Pyraclostrobin + Fluxapyroxad
** TFS – Trifloxistrobin

Comments of zRMS:

The increase of the quality parameters of winter triticale yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 0,9% at 1,4 l/ha and 1,4% at 1,2 l/ha in case of HLW, 1,5% at 1,4 l/ha and 0,9% at 1,2 l/ha in case of moisture content, 2,6% at 1,4 l/ha and 0,8% at 1,2 l/ha in case of TGW. In the North-East EPPO zone, the increase was 0% at 1,4 l/ha and 0,8% at 1,2 l/ha in case of HLW, 3,3% at 1,4 l/ha and 0,1% at 1,2 l/ha in case of moisture content, 4,3% at 1,4 l/ha and 12% at 1,2 l/ha in case of TGW. In the South-East EPPO zone, CA3642 achieved results of 0,5% at 1,4 l/ha and 0,8% at 1,2 l/ha in case of HLW, 2,8%

at 1,4 l/ha and 2,6% at 1,2 l/ha in case of moisture content, 5,6% at 1,4 l/ha and 5,8% at 1,2 l/ha in case of TGW. In conclusion, slight positive impact on the quality parameters of winter triticale yield was visible.

Rye (SECCW)

As demonstrated for winter rye, application of CA3642 applied at 1.2-1.4 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In 10 efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease. One of these trials were excluded from efficacy evaluation due to very low, and during the trial completely vanishing, disease pressure.

Yield quantity and quality was assessed a total of 10 efficacy trials carried out in the Maritime (5 trials), North-East (3 trials) and South-East (2 trials) EPPO zones between 2019 and 2021.

Trials from the Maritime EPPO zone were carried out in Germany (2 trials), France (1 trial) and Great Britain (2 trials).

The trial from the North-East EPPO zone was carried out in Latvia (1 trial) and Poland (2 trials)
Trials from the South-East EPPO zone were carried out in Hungary (1 trial) and Romania (1 trial)

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Yield quantity (t/ha)

Yield quantity (t/ha) was evaluated in 10 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases. One of those trials was excluded from efficacy evaluation since RHYNSE was only observed on leaf level 4 at application date but completely vanished throughout the trial period.

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield of winter rye in the presence of disease. In fact, there was an increase in yield over the untreated in the majority of trials, with a statistically significant difference in five out of 10 trials for both dose rates, and 6 of 10 trials for the higher dose rate. No statistically significant differences were observed compared to the used reference standards.

In the Maritime EPPO zone yield (t/ha) was assessed in 4 efficacy trials on winter rye in the presence of diseases. Applications of CA3642 at both dose rates significantly increased yield compared to the untreated control in 3 trials – varieties Ducato, Danielo and Binntto. The mean increase in yield across the 4 trials was 21-22% (Table 3.2-467).

Table 3.2-467: Yield (t/ha) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	Summarized PTZ products EC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	200 g PTZ/ha
GBR	Ducato	112	96		5.7 b 100	**7.2 a** **126.3**	**7.3 a** **128.1**	6.5 a 114.0	7.0 a 122.8
DEU	Danielo	111	92		11.1 b 100	**12.7 a** **114.4**	**12.6 a** **113.5**	12.4 a 111.7	12.5 a 112.6
DEU	Binntto	117	97		6.5 b	**9.3 a**	**9.0 a**	9.7 a	8.6 a

					100	**143.1**	**138.5**	149.2	132.3
GBR	Mephisto	132	97		6.5 a 100	**6.5 a** **100.0**	**7.1 a** **109.2**	6.6 a 101.5	6.5 a 100.0
			4	*Mean* Min Max	*7.5* *5.7* *11.1*	***121.0*** **100.0** **143.1**	***122.3*** **109.2** **138.5**	*119.1* 101.5 149.2	*116.9* 100.0 132.3

UTC: untreated control at assessment date

In 3 trials in the North-East zone with varieties TUR F1, Dańkowskie Rubin and KWS Serafino yield was assessed (Table 3.2-468). On TUR F1, both rates significantly increased yield compared to the untreated control. On Dańkowskie Rubin, CA3642 applied at 1.4 L/ha significantly increased yield compared to the untreated control, and in the last trial yield was comparable to untreated plots. The mean increase in yield across the 3 trials was 13-16 %.

Table 3.2-468: Yield (t/ha) effect of CA3642 in efficacy trials on winter rye – North-East EPPO zone

Coun-try	**Variety**	**DA-A**	**DA-B**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**		**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**OSIRIS 65 EC EPC + MTC** 65 g/L EC**
				Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 L/ha 75 g EPC/ha + 55 g MTC/ha**
POL	TUR F1	100	70		4.4 b 100	**5.1 a** **115.9**	**5.6 a** **127.3**	4.9 a 111.4		5.1 a 115.9
POL	Dańkowskie Rubin	85	70		3.3 b 100	**4.1 a** **124.2**	**3.7 ab** **112.1**	3.8 ab 115.2	4.1 a 124.2	4.2 a 127.3
LVA	KWS Serafino	112	82		5.5 a 100	**5.5 a** **100.0**	**5.9 a** **107.3**	6.2 a 112.7	6.1 a 110.9	
			3	Mean Min Max	4.4 3.3 5.5	***113.4*** **100.0** **124.2**	***115.6*** **107.3** **127.3**	*113.1* 111.4 115.2		
			2	Mean Min Max	4.4 3.3 5.5	***112.1*** **100.0** **124.2**	***109.7*** **107.3** **112.1**	*113.9* 112.7 115.2	*117.6* 110.9 124.2	
			2	Mean Min Max	3.9 3.3 4.4	***120.1*** **115.9** **124.2**	***119.7*** **112.1** **127.3**	*113.3* 111.4 115.2		*121.6* 115.9 127.3

UTC: untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

In the South-East EPPO zone yield was assessed in 2 trials on winter rye, varieties Dankowskie Diament and SUCEVEANA (Table 3.2-469). On variety SUCEVEANA both rates significantly increased yield compared to the untreated control. In the other trial differences were not significant. The mean increase in yield across the 2 trials was 9-23 %.

Table 3.2-469: Yield (t/ha) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha
HUN	Dankowskie Diament	104	82		4.6 a 100	**4.6 a** **100.0**	**5.9 a** **128.3**	5.6 a 121.7		5.2 a 113.0
ROU	SUCEVEANA	66	47		3.5 b 100	**4.1 a** **117.1**	**4.1 a** **117.1**	4.1 a 117.1	4.1 a 117.1	
			2	Mean Min Max	4.1 3.5 4.6	***108.6*** **100.0** **117.1**	***122.7*** **117.1** **128.3**	*119.4* 117.1 121.7		
			1		3.5	***117.1***	***117.1***	*117.1*	*117.1*	
			1		4.6	***100.0***	***128.3***	*121.7*		*113.0*

UTC: untreated control at assessment date

In the Maritime EPPO zone on 1 trial without disease (Table 3.2-470) on variety BENDIX, a slight but not significant increase in yield of 6-11 % was observed.

Table 3.2-470: Yield (t/ha) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

Country	Variety	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2445 PTZ 250 g/L EC	CA2702 AZX 250 g/L SC
				Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g PTZ/ha	0.8 L/ha 200 g AZX/ha
FRA	BENDIX	101	79		6.5 a 100	**7.2 a** **110.8**	**6.9 a** **106.2**	6.7 a 103.1	6.5 a 100.0
			1		6.5	***110.8***	***106.2***	*103.1*	*100.0*

UTC: untreated control at assessment date

Comments of zRMS:

The mean yield of winter rye increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 21% at 1,4 l/ha and 22,3% at 1,2 l/ha in 4 trials. Similar effect was observed for CA2702 (19,1%) and slight lower for the products containing prothioconazole solo (16,9%). In the North-East EPPO zone, the increase was 13,4% at 1,4 l/ha and 15,6% at 1,2 l/ha in 3 trials and was comparable to CA2702 (13,1%). In the South-East EPPO zone, the increase was 8,6% at 1,4 l/ha and 22,7% at 1,2 l/ha in 2 trials. In conclusion, positive impact on the winter rye yield was observed after 2 applications of CA3642.

Yield quality

Yield quantity in terms of hectolitre weight, moisture content and thousand grain weight was evaluated in 10 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.2-1.4 L/ha against foliar diseases. One of those trials was excluded from efficacy evaluation since RHYNSE was only observed on leaf level 4 at application date but completely vanished throughout the trial period.

CA3642 at the proposed label rate of 1.2-1.4 L/ha had no negative effect on the yield quality parameters of winter rye in the presence of disease. In fact, there was an increase in quality over the untreated in the majority of trials. No statistically significant differences were observed compared to the used reference standards.

In the Maritime EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 4 trials on winter rye. There were no significant differences in HLW between CA3642 or the reference products or the untreated control in any of the trials. The mean values were the same for treated plots compared to untreated plots (Table 3.2-484). The moisture content in all 4 trials was comparable between CA3642 and the reference standards. In one trial on Danielo the 1.2 L/ha rate of CA3642 resulted in significantly higher moisture content compared to the untreated control, however the numerical difference was only 0.5% (Table 3.2-450). In 2 trials, on varieties Danielo and Mephisto, the TGW was significantly higher in plots treated with CA3642 compared to untreated plots, and in the other trials the values were comparable to the untreated control. There were no significant differences between CA3642 and the reference products (Table 3.2-451).

Table 3.2-482: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
						Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	200 g PTZ/ha
EU19-067-25	GBR	Ducato	HLW	112	96		69.4 a 100	**69.2 a 99.7**	**69.2 a 99.7**	69.7 a 100.4		68.6 a 98.8	68.6 a 98.8
EU20-035-28	DEU	Danielo	HLW	111	92		74.0 a 100	**74.6 a 100.8**	**74.5 a 100.7**	74.5 a 100.7	74.5 a 100.7		74.5 a 100.7
EU20-035-29	DEU	Binntto	HLW	117	97		73.4 a 100	**74.0 a 100.8**	**73.6 a 100.3**	74.7 a 101.8	73.5 a 100.1		73.5 a 100.1
EU21-019-11	GBR	Mephisto	HLW	132	97		69.1 a 100	**68.3 a 98.8**	**68.4 a 99.0**	69.0 a 99.9		68.3 a 98.8	68.3 a 98.8
					4	Mean Min Max	71.5 69.1 74.0	***100.0*** **98.8 100.8**	***99.9*** **99.0 100.7**	*100.7* 99.9 101.8			*99.6* 98.8 100.7
					2	Mean Min Max	73.7 73.4 74.0	***100.8*** **100.8 100.8**	***100.5*** **100.3 100.7**	*101.2* 100.7 101.8	*100.4* 100.1 100.7		
					3	Mean Min Max	72.3 69.4 74.0	***100.4*** **99.7 100.8**	***100.2*** **99.7 100.7**	*101.0* 100.4 101.8			
					2	Mean Min Max	69.3 69.1 69.4	***99.3*** **98.8 99.7**	***99.3*** **99.0 99.7**	*100.1* 99.9 100.4		*98.8* 98.8 98.8	

Table 3.2-483: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
						Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	200 g PTZ/ha
EU19-067-25	GBR	Ducato	MOICON	112	96		13.4 a 100	**13.1 a 97.8**	**13.3 a 99.3**	12.8 a 95.5		13.4 a 100.0	13.4 a 100.0
EU20-035-28	DEU	Danielo	MOICON	111	92		13.6 b	**14.0 ab**	**14.1 a**	13.8 ab	13.8 ab		13.8 ab

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**200 g PTZ/ha**
							100	**102.9**	**103.7**	101.5	101.5		101.5
EU20-035-29	DEU	Binntto	MOICON	117	97		11.3 a	**11.8 a**	**11.9 a**	11.5 a	11.8 a		11.8 a
							100	**104.4**	**105.3**	101.8	104.4		104.4
EU21-019-11	GBR	Mephisto	MOICON	132	97		14.7 a	**15.1 a**	**14.8 a**	14.8 a		14.6 a	14.6 a
							100	**102.7**	**100.7**	100.7		99.3	99.3
					4	Mean	13.3	***102.0***	***102.2***	*99.9*			*101.3*
						Min	11.3	**97.8**	**99.3**	95.5			99.3
						Max	14.7	**104.4**	**105.3**	101.8			104.4
					2	Mean	12.5	***103.7***	***104.5***	*101.6*	*102.9*		*102.9*
						Min	11.3	**102.9**	**103.7**	101.5	101.5		101.5
						Max	13.6	**104.4**	**105.3**	101.8	104.4		104.4
					2	Mean	14.1	***100.2***	***100.0***	*98.1*		*99.7*	*99.7*
						Min	13.4	**97.8**	**99.3**	95.5		99.3	99.3
						Max	14.7	**102.7**	**100.7**	100.7		100.0	100.0

Table 3.2-484: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**200 g PTZ/ha**
EU19-067-25	GBR	Ducato	TKW	122	106		39.4 a	**40.8 a**	**41.5 a**	40.9 a		40.6 a	40.6 a
							100	**103.6**	**105.3**	103.8		103.0	103.0
EU20-035-28	DEU	Danielo	TKW	111	92		29.2 b	**31.7 a**	**31.3 a**	30.7 ab	30.2 ab		30.2 ab
							100	**108.6**	**107.2**	105.1	103.4		103.4
EU20-035-29	DEU	Binntto	TKW	117	97		34.8 a	**37.8 a**	**35.4 a**	38.4 a	35.5 a		35.5 a
							100	**108.6**	**101.7**	110.3	102.0		102.0
EU21-019-	GBR	Mephist	TKW	139	104		27.5	**29.9 a**	**30.4 a**	28.7 ab		28.9 ab	28.9 ab

ID	Coun-try	Variety	Rat-ing Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.72 L/ha 198 g PTZ/ha**	**200 g PTZ/ha**
11		o					b 100	**108.7**	**110.5**	104.4		105.1	105.1
					4	*Mean* Min Max	32.7 27.5 39.4	***107.4*** **103.6** **108.7**	***106.2*** **101.7** **110.5**	*105.9* 103.8 110.3			*103.4* 102.0 105.1
					2	*Mean* Min Max	32.0 29.2 34.8	***108.6*** **108.6** **108.6**	***104.5*** **101.7** **107.2**	*107.7* 105.1 110.3	*102.7* 102.0 103.4		*102.7* 102.0 103.4
					2	*Mean* Min Max	33.5 27.5 39.4	***106.1*** **103.6** **108.7**	***107.9*** **105.3** **110.5**	*104.1* 103.8 104.4		*104.1* 103.0 105.1	*104.1* 103.0 105.1

In the North-East EPPO zone yield quality in terms of moisture content (Table 3.2-488) and TGW (Table 3.2-489) was assessed in 3 trials on winter rye, varieties TUR F1, Dańkowskie Rubin and KWS Serafino. For each of the quality parameters CA3642 was statistically comparable to untreated plots and to the reference standards.

Table 3.2-485: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – North-East EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 L/ha 75 g EPC/ha + 55 g MTC/ha**
EU19-067-63	POL	TUR F1	MOICON	100	70		12.1 a 100	**12.2 a** **100.8**	**12.5 a** **103.3**	12.6 a 104.1		12.1 a 100.0
EU20-035-68	POL	Dańkowskie Rubin	MOICON	85	70		12.0 a 100	**12.1 a** **100.8**	**12.1 a** **100.8**	12.0 a 100.0	11.9 a 99.2	11.9 a 99.2
EU20-035-69	LVA	KWS Serafino	MOICON	112	82		14.1 a 100	**14.7 a** **104.3**	**14.6 a** **103.5**	14.6 a 103.5	15.0 a 106.4	
					3	*Mean* Min	12.7 12.0	***102.0*** **100.8**	***102.6*** **100.8**	*102.6* 100.0		

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 L/ha 75 g EPC/ha + 55 g MTC/ha**
						Max	14.1	**104.3**	**103.5**	104.1		
					2	*Mean* Min Max	13.1 12.0 14.1	***102.5*** **100.8** **104.3**	***102.2*** **100.8** **103.5**	*101.8* 100.0 103.5	*102.8* 99.2 106.4	
					2	*Mean* Min Max	12.1 12.0 12.1	***100.8*** **100.8** **100.8**	***102.1*** **100.8** **103.3**	*102.1* 100.0 104.1		*99.6* 99.2 100.0

** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

Table 3.2-486: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter rye – North-East EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 L/ha 75 g EPC/ha + 55 g MTC/ha**
EU19-067-63	POL	TUR F1	TKW	132	102		24.4 a 100	**25.6 a** **104.9**	**24.8 a** **101.6**	25.2 a 103.3		22.0 a 90.2
EU20-035-68	POL	Dańkowskie Rubin	TKW	87	72		30.8 a 100	**32.4 a** **105.2**	**32.5 a** **105.5**	31.8 a 103.2	31.7 a 102.9	32.1 a 104.2
EU20-035-69	LVA	KWS Serafino	TKW	127	97		27.3 a 100	**26.6 a** **97.4**	**26.2 a** **96.0**	27.8 a 101.8	26.4 a 96.7	
					3	*Mean* Min Max	27.5 24.4 30.8	***102.5*** ***97.4*** ***105.2***	***101.0*** ***96.0*** ***105.5***	*102.8* *101.8* *103.3*		
					2	*Mean* Min Max	29.1 27.3 30.8	***101.3*** ***97.4*** ***105.2***	***100.7*** ***96.0*** ***105.5***	*102.5* *101.8* *103.2*	*99.8* *96.7* *102.9*	
					2	*Mean* Min Max	27.6 24.4 30.8	***105.1*** ***104.9*** ***105.2***	***103.6*** ***101.6*** ***105.5***	*103.3* *103.2* *103.3*		*97.2* *90.2* *104.2*

** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

In the South-East EPPO zone yield quality in terms of HLW (Table 3.2-490), moisture content (Table 3.2-491) and TGW (Table 3.2-492) was assessed in 2 trials on winter rye, varieties Dankowskie Diament and SUCEVEANA. For each of the quality parameters CA3642 was statistically comparable to the reference standards.

On variety SUCEVEANA, CA3642 at both rates significantly increased HLW, moisture content and TGW compared to the untreated control. In the other trial the quality parameters were comparable to the untreated control, although a notable increase in TGW was observed on variety Dankowskie Diament of 10 % and 6 % for the rates of 1.4 L/ha and 1.2 L/ha respectively.

Table 3.2-487: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**
EU19-067-83	HUN	Dankowskie Diament	HLW	111	89		72.4 a 100	**72.3 a 99.9**	**71.9 a 99.3**	71.9 a 99.3		72.3 a 99.9
EU19-067-84	ROU	SUCEVEANA	HLW	66	47		70.8 b 100	**72.0 a 101.7**	**71.8 a 101.4**	71.9 a 101.6	72.0 a 101.7	
					2	*Mean* Min Max	71.6 70.8 72.4	***100.8*** **99.9** **101.7**	***100.4*** **99.3** **101.4**	*100.4* 99.3 101.6		
					1	*Mean*	70.8	***101.7***	***101.4***	*101.6*	*101.7*	
					1	*Mean*	72.4	***99.9***	***99.3***	*99.3*		*99.9*

- **150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Table 3.2-488: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**
EU19-067-83	HUN	Dankowskie Diament	MOICON	104	82		12.6 a 100	**12.9 a 102.4**	**12.8 a 101.6**	12.6 a 100.0		12.7 a 100.8
EU19-067-84	ROU	SUCEVEANA	MOICON	66	47		13.5 c 100	**14.2 a 105.2**	**14.3 a 105.9**	14.1 ab 104.4	13.9 ab 103.0	

					2	*Mean* Min Max	13.1 12.6 13.5	***103.8*** ***102.4*** ***105.2***	***103.8*** ***101.6*** ***105.9***	*102.2* *100.0* *104.4*		
					1	*Mean*	13.5	***105.2***	***105.9***	*104.4*	*103.0*	
					1	*Mean*	12.6	***102.4***	***101.6***	*100.0*		*100.8*

- **150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Table 3.2-489: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**
EU19-067-83	HUN	Dankowskie Diament	TKW	111	89		26.1 a 100	**28.8 a 110.3**	**27.7 a 106.1**	27.7 a 106.1		28.4 a 108.8
EU19-067-84	ROU	SUCEVEANA	TKW	66	47		29.3 b 100	**32.3 a 110.2**	**32.2 a 109.9**	31.8 a 108.5	31.7 a 108.2	
					2	*Mean* Min Max	27.7 26.1 29.3	***110.3*** **110.2** **110.3**	***108.0*** **106.1** **109.9**	*107.3* 106.1 108.5		
					1	*Mean*	29.3	***110.2***	***109.9***	*108.5*	*108.2*	
					1	*Mean*	26.1	***110.3***	***106.1***	*106.1*		*108.8*

- **150g/l Pyraclostrobin, 75g/l Fluxapyroxad

In the Maritime EPPO zone on 1 trial without disease on variety BENDIX, HLW (Table 3.2-493), moisture content (Table 3.2-494) and TGW (Table 3.2-495) was assessed. For all quality parameters CA3642 was statistically comparable to the reference standards and to the untreated control, with no notable increase in values. Hence it can be surmised that in the absence of disease applications of CA3642 will not adversely affect the yield quality of winter rye.

Table 3.2-490: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
						Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
EU21-019-12	FRA	BENDIX	HLW	111	89		66.2 a	**66.3 a**	**66.2 a**	66.4 a	66.4 a

							100	**100.2**	**100.0**	100.3	100.3
					1	*Mean*	66.2	***100.2***	***100.0***	*100.3*	*100.3*

Table 3.2-491: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
						Rate		1.4 L/ha	1.2 L/ha	0.8 L/ha	0.8 L/ha
								210 g AZX/ha + 210 g PTZ/ha	180 g AZX/ha + 180 g PTZ/ha	200 g AZX/ha	200 g PTZ/ha
EU21-019-12	FRA	BENDIX	MOICON	111	89		14.0 a	**14.3 a**	**14.1 a**	14.3 a	14.3 a
							100	**102.1**	**100.7**	102.1	102.1
					1	*Mean*	14.0	***102.1***	***100.7***	*102.1*	*102.1*

Table 3.2-492: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

ID	Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
						Rate		1.4 L/ha	1.2 L/ha	0.8 L/ha	0.8 L/ha
								210 g AZX/ha + 210 g PTZ/ha	180 g AZX/ha + 180 g PTZ/ha	200 g AZX/ha	200 g PTZ/ha
EU21-019-12	FRA	BENDIX	TKW	164	142		26.5 a 100	**27.5 a** **103.8**	**27.2 a** **102.6**	27.1 a 102.3	27.2 a 102.6
					1	*Mean*	26.5	***103.8***	***102.6***	*102.3*	*102.6*

Comments of zRMS:

The increase of the quality parameters of winter rye yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 2% at 1,4 l/ha and 2,2% at 1,2 l/ha in case of moisture content, 7,4% at 1,4 l/ha and 6,2% at 1,2 l/ha in case of TGW. In the North-East EPPO zone, the increase was 2% at 1,4 l/ha and 2,6% at 1,2 l/ha in case of moisture content, 2,5% at 1,4 l/ha and 1% at 1,2 l/ha in case of TGW. In the South-East EPPO zone, CA3642 achieved results of 0,8% at 1,4 l/ha and 0,4% at 1,2 l/ha in case of HLW, 3,8% at 1,4 l/ha and 3,8% at 1,2 l/ha in case of moisture content, 10,3% at 1,4 l/ha and 8% at 1,2 l/ha in case of TGW. In conclusion, slight positive impact on the quality parameters of winter rye yield was visible.

Oat (AVESS)

As demonstrated for oat, application of CA3642 applied at 1.0 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In ten efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease. One of these trials were excluded from efficacy evaluation due to very low, and during the trial completely vanishing, disease pressure.

Yield quantity and quality was assessed a total of ten efficacy trials carried out in the Maritime (4 trials), North-East (5 trials) and South-East (1 trial) EPPO zones between 2019 and 2021.

Trials from the Maritime EPPO zone were carried out in Germany (4 trials).
Trials from the North-East EPPO zone were carried out in Poland (3 trials) and Latvia (2 trials).
Trials from the South-East EPPO zone were carried out in Romania (1 trial).

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Oats (AVESS)
Table 3.2-260.

Yield quantity (t/ha)

Yield quantity (t/ha) was evaluated in 10 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.0 L/ha against foliar diseases.

CA3642 at the proposed label rate of 1.0 L/ha had no negative effect on the yield of oat in the presence of disease. In fact, there was an increase in yield over the untreated in the majority of trials, with a statistically significant difference in one out of 10 trials. No statistically significant differences were observed compared to the used reference standards.

In the Maritime EPPO zone yield (t/ha) was assessed in four trials on oat. Applications of CA3642 significantly increased yield compared to the untreated control in one trial in variety Prokop. The mean increase in yield across the 4 trials was 3.8 – 13.0 % seen in Table 3.2-471.

Table 3.2-471: Yield (t/ha) effect of CA3642 in efficacy trials on oat – Maritime EPPO zone

Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	TORERO AZX 250 g/L EC
					Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.0 L/ha 250 g AZX/ha

DEU	MAX	72	48.0		YIELD %	4.0 a 100	**4.5 a** **111.4**	4.3 a 106.6		4.5 a 111.9
DEU	Pro-kop	71	48.0		YIELD %	5.2 b 100	**5.6 ab** **107.5**	5.4 ab 104.0	5.9 ab 113.3	
DEU	Troll	80	51.0		YIELD %	5.0 a 100	**5.2 a** **103.8**	5.2 a 104.0		5.1 a 102.8
DEU	Pro-kop	76	52.0		YIELD %	7.4 b 100	**8.3 a** **113.0**	9.0 a 121.3	8.3 a 112.9	
Mean efficacy				*4*	*Mean* Min Max	*5.4* 4.0 7.4	***108.9*** **103.8** **113.0**	*109.0* 104.0 121.3		
Orthogonal comparisons				*2*	*Mean* Min Max	*6.3* 5.2 7.4	***110.2*** **107.5** **113.0**	*112.7* 104.0 121.3	*113.1* 112.9 113.3	
				2	*Mean* Min Max	*4.5* 4.0 5.0	***107.6*** **103.8** **111.4**	*105.3* 104.0 106.6		*107.4* 102.8 111.9

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

In the North-east EPPO zone yield (t/ha) was assessed in five trials on oat. The mean increase in yield across the four trials was 0 – 23.1 %, seen in Table 3.2-472.

Table 3.2-472: Yield (t/ha) effect of CA3642 in efficacy trials on oat – North-East EPPO zone

Coun-try	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROSARO (125 g/L PTZ + 125 g/L TBC)** 250 g/L EW**	**DELARO (175 g/L PTZ + 150 g/L TFS)**** 325 g/L SC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha**	**1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha**
LVA	GA-LANT	63	47		YIELD %	3.5 a 100	**3.5 a 98.3**	4.1 a 115.2	3.3 a 93.5	3.2 a 90.3	
POL	Kozak	64	48		YIELD %	3.7 b 100	**3.9 ab 105.3**	4.5 a 121.1	4.5 ab 119.3		
POL	KOZAK	71	57		YIELD %	6.3 a 100	**7.8 a 123.1**	6.9 a 108.4	8.2 a 129.2		
LVA	Edvins	72	58		YIELD %	5.9 a 100	**5.1 a 86.3**	5.0 a 84.8		5.7 a 96.6	
POL	Bingo	78	59		YIELD %	4.5 c 100	**5.1 abc 114.7**				5.3 abc 118.5
Mean efficacy				*5*	*Mean* Min Max	*4.8* 3.5 6.3	***105.5*** **86.3** **123.1**				
Orthogonal comparisons				*4*	*Mean* Min Max	*4.9* 3.5 6.3	***103.2*** **86.3** **123.1**	*107.4* 84.8 121.1			
				3	*Mean* Min Max	*4.5* 3.5 6.3	***108.9*** **98.3** **123.1**	*114.9* 108.4 121.1	*114.0* 93.5 129.2		
				2	*Mean* Min Max	*4.7* 3.5 5.9	***92.3*** **86.3** **98.3**	*100.0* 84.8 115.2		*93.4* 90.3 96.6	
				1	Mean	*4.5*	***114.7***				*118.5*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC
** PTZ + TBC: 125 g/L Prothioconazole, 125 g/L Tebuconazole
****PTZ + TFS: 175g/L Prothioconazole, 150g/L Trifloxystrobin

In a single trial in the South-east zone one variety EXPRESO, yield was increased numerically by 11.1 % at dose rate 1.0 L/ha, see Table 3.2-473.

Table 3.2-473: Yield (t/ha) effect of CA3642 in efficacy trials on oat – South-East EPPO zone

Coun-try	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	EXPRE-SO	65	45		YIELD %	3.7 a 100	**4.2 a 111.1**	4.2 a 111.2	4.1 a 110.6
Mean efficacy				*1*			***111.1***	*111.2*	*110.6*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

Comments of zRMS:

The mean yield of oat increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 8,9% at 1 l/ha in 4 trials. Similar effect was observed for CA2702 (9%). In the North-East EPPO zone, the increase was 5,5% at 1 l/ha in 5 trials. In the South-East EPPO zone, the increase was 11,1% at 1 l/ha in 1 trial. Comparable results have been noted for CA2702 (11,2%) and CA2445 (10,6%). In conclusion, positive impact on the oat yield was observed after 2 applications of CA3642.

Yield quality

Yield quality in terms of hectolitre weight, moisture content and thousand grain weight was evaluated in ten efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.0 L/ha against foliar diseases.

CA3642 at the proposed label rate of 1.0 L/ha had no negative effect on the yield quality parameters of oat in the presence of disease. In fact, there were some instances of an increase in quality over the untreated in some of the trials. No statistically significant differences were observed compared to the used reference standards.

In the Maritime EPPO zone yield quality (HLW, moisture content and TKW) was assessed in four trials on oat. There were no significant differences in HLW (Table 3.2-474), moisture content (Table 3.2-475) or TKW (Table 3.2-475) between CA3642, the reference products or the untreated control in any of the trials.

Table 3.2-474: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on oat – Maritime EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**TORERO AZX 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**
DEU	MAX	72	48		HLW %	36.1 a 100	**33.7 a 93.4**	35.7 a 98.8		34.0 a 94.2
DEU	Prokop	71	48		HLW %	44.1 a 100	**46.5 a 105.4**	47.0 a 106.6	44.2 a 100.2	
DEU	Troll	80	51		HLW %	34.7 a 100	**35.1 a 101.0**	35.2 a 101.4		35.5 a 102.2

DEU	Prokop	76	52		HLW %	49.2 a 100	**48.6 a** **98.7**	48.0 a 97.5	49.2 a 100.1	
Mean efficacy				*4*	*Mean* Min Max	*41.0* 34.7 49.2	***99.6*** **93.4** **105.4**	*101.1* 97.5 106.6		
Orthogonal comparisons				*2*	*Mean* Min Max	*46.7* 44.1 49.2	***102.0*** **98.7** **105.4**	*102.1* 97.5 106.6	*100.1* 100.1 100.2	
				2	Mean Min Max	*35.4* 34.7 36.1	*97.2* 93.4 101.0	*100.1* 98.8 101.4		*98.2* 94.2 102.2

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

Table 3.2-475: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on oat – Maritime EPPO zone

Coun-try	**Varie-ty**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**TORERO AZX 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**
DEU	MAX	72	48		MOI-CON %	16.1 a 100	**16.4 a** **101.9**	16.2 a 100.6		16.3 a 101.1
DEU	Prokop	71	48		MOI-CON %	13.5 a 100	**16.7 a** **123.7**	14.6 a 108.2	14.1 a 104.2	
DEU	Troll	80	51		MOI-CON %	11.43 a 100	**11.3 a** **99.1**	11.1 a 97.4		11.1 a 97.4
DEU	Prokop	76	52		MOI-CON %	11.28 a 100	**11.6 a** **102.4**	11.4 a 100.6	11.4 a 101.3	
Mean efficacy				*4*	*Mean* Min Max	*13.1* 11.3 16.1	***106.8*** **99.1** **123.7**	*101.7* 97.4 108.2		
Orthogonal comparisons				*2*	*Mean* Min Max	*12.4* 11.3 13.5	***113.1*** **102.4** **123.7**	*104.4* 100.6 108.2	*102.8* 101.3 104.2	
				2	*Mean* Min Max	*13.8* 11.4 16.1	***100.5*** **99.1** **101.9**	*99.0* 97.4 100.6		*99.3* 97.4 101.1

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

Table 3.2-476: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on oat – Mari-time EPPO zone

Coun-try	**Varie-ty**	**DA-A**	**DA-B**	**No of trials**	**Nam e Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**TORERO AZX 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**
DEU	MAX	72	48		TKW %	26.7 a 100	**24.1 a** **90.1**	27.0 a 100.9		26.4 a 98.7

DEU	Prokop	71	48		TKW %	31.2 a 100	**31.2 a** **99.9**	31.1 a 99.6	31.1 a 99.6	
DEU	Troll	80	51		TKW %	22.58 a 100	**22.5 a** **99.4**	23.5 a 104.2		23.9 a 106.0
DEU	Prokop	76	52		TKW %	30.55 a 100	**30.9 a** **101.1**	31.0 a 101.3	30.8 a 100.7	
Mean efficacy				*4*	*Mean* Min Max	*27.8* 22.6 31.2	***97.6*** **90.1** **101.1**	*101.5* 99.6 104.2		
Orthogonal comparisons				*2*	*Mean* Min Max	*30.9* 30.6 31.2	***100.5*** **99.9** **101.1**	*100.4* 99.6 101.3	*100.1* 99.6 100.7	
				2	*Mean* Min Max	*24.7* 22.6 26.7	***94.8*** **90.1** **99.4**	*102.6* 100.9 104.2		*102.3* 98.7 106.0

UTC: % green leaf area in untreated control at assessment date

All assessments are a percent reTable 3.2-477lative to the UTC

In the North-East EPPO zone yield quality (HLW, moisture content and TKW) was assessed in five trials on oat. There were no significant differences in HLW (Table 3.2 476), moisture content (Table 3.2 477) or TKW (Table 3.2 478) between CA3642, the reference products or the untreated control in any of the trials.

Table 3.2-478: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on oat – North-East EPPO zone

Coun-try	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROSARO (125 g/L PTZ + 125 g/L TBC)[**] 250 g/L EW**	**DELARO (175 g/L PTZ + 150 g/L TFS)[****] 325 g/L SC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**1 L/ha 125 g PTZ/ha + 125 g TBC/ha**	**1 L/ha 175 g PTZ/ha + 150 g TFS/ha**
LVA	GA-LANT	64	48		HLW %	59.1 a 100	**59.7 a 101.0**	59.3 a 100.2	59.3 a 100.2	59.0 a 99.8	
POL	KOZAK	64	48		HLW %	54.5 a 100	**55.3 a 101.4**	56.6 a 103.7	56.3 a 103.2		
POL	KOZAK	71	57		HLW %	36.5 a 100	**35.4 a 97.0**	35.5 a 97.4	31.4 a 86.1		
LVA	Edvins	72	58		HLW %	55.7 a 100	**55.9 a 100.4**	54.2 a 97.4		55.5 a 99.7	
POL	Bingo	83	64		HLW %	38.0 c 100	**40.5 abc 106.7**				40.4 abc 106.4
Mean efficacy				*5*	Mean Min Max	*48.8* 36.5 59.1	***101.3*** **97.0** **106.7**				
Orthogonal comparisons				*4*	Mean Min Max	*51.5* 36.5 59.1	***100.0*** **97.0** **101.4**	*99.7* 97.4 103.7			
				3	Mean Min Max	*50.0* 36.5 59.1	***99.8*** **97.0** **101.4**	*100.4* 97.4 103.7	*96.5* 86.1 103.2		
				2	Mean Min Max	*57.4* 55.7 59.1	***100.7*** **100.4** **101.0**	*98.8* 97.4 100.2		*99.8* 99.7 99.8	
				1		*38.0*	***106.7***				*106.4*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC
** PTZ + TBC: 125 g/L Prothioconazole, 125 g/L Tebuconazole
****PTZ + TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

Table 3.2-479: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on oat – North-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**	**PROSARO (125 g/L PTZ + 125 g/L TBC)[**] 250 g/L EW**	**DELARO (175 g/L PTZ + 150 g/L TFS)[****] 325 g/L SC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha**	**1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha**
LVA	GA-LANT	63	47		MOI-CON %	12.6 a 100	**13.1 a 104.0**	12.2 a 97.5	13.6 a 108.2	12.8 a 98.6	
POL	KOZAK	64	48		MOI-CON %	13.2 a 100	**13.0 a 98.3**	13.5 a 102.7	13.0 a 98.7		
POL	KOZAK	71	57		MOI-CON %	10.8 a 100	**11.9 a 110.5**	10.8 a 100.7	12.4 a 115.3		
LVA	Edvins	72	58		MOI-CON %	18.6 a 100	**18.9 a 101.3**	19.9 a 106.8		17.3 a 92.8	
POL	Bingo	78	59		MOI-CON %	13.1 a 100	**13.0 a 98.8**				15.0 a 114.3
Mean efficacy				*5*	Mean Min Max	*13.7* 10.8 18.6	***102.6*** **98.3** **110.5**				
Orthogonal comparisons				*4*	Mean Min Max	*13.8* 10.8 18.6	***103.5*** **98.3** **110.5**	*101.9* 97.5 106.8			
				3	Mean Min Max	*12.2* 10.8 13.2	***104.3*** **98.3** **110.5**	*100.3* 97.5 102.7	*107.4* 98.7 115.3		
				2	Mean Min Max	*15.6* 12.6 18.6	***102.6*** **101.3** **104.0**	*102.1* 97.5 106.8		*95.7* 92.8 98.6	
				1		*13.1*	***98.8***				*114.3*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC
** PTZ + TBC: 125 g/L Prothioconazole, 125 g/L Tebuconazole
****PTZ + TFS: 175g/l Prothioconazole, 150g/l Trifloxystrobin

Table 3.2-480: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on oat – North-East EPPO zone

Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROSARO (125 g/L PTZ + 125 g/L TBC)** 250 g/L EW	DELARO (175 g/L PTZ + 150 g/L TFS)**** 325 g/L SC
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.0 L/ha 125 g PTZ/ha + 125 g TBC/ha**	**1.0 L/ha 175 g PTZ/ha + 150 g TFS/ha**
LVA	Edvins	111	97		TKW %	41.2 a 100	**40.1 a 97.4**	37.7 a 91.6		36.6 a 88.9	
POL	KOZAK	65	49		TKW %	39.3 b 100	**40.8 ab 103.9**	41.8 ab 106.3	43.0 a 109.4		
LVA	GA-LANT	65	49		TKW %	39.1 a 100	**37.3 a 95.3**	35.7 a 91.4	37.2 a 95.1	38.2 a 97.7	
POL	Bingo	83	64		TKW %	39.4 c 100	**40.4 bc 102.6**				42.8 ab 108.6
POL	KOZAK	86	72		TKW %	44.9 a 100	**41.6 a 92.7**	42.9 a 95.6	40.2 a 89.6		
Mean efficacy				*5*	Mean Min Max	*40.8* 39.1 44.9	***98.4*** **92.7** **103.9**				
Orthogonal comparisons				*4*	Mean Min Max	*41.1* 39.1 44.9	***97.3*** **92.7** **103.9**	*96.2* 91.4 106.3			
				3	Mean Min Max	*41.1* 39.1 44.9	***97.3*** **92.7** **103.9**	*97.8* 91.4 106.3	*98.0* 89.6 109.4		
				2	Mean Min Max	*40.2* 39.1 41.2	***96.4*** **95.3** **97.4**	*91.5* 91.4 91.6		*93.3* 88.9 97.7	
				1		*44.9*	***92.7***	*95.6*	*89.6*		
				1		*39.4*	***102.6***				*108.6*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

** PTZ + TBC: 125 g/L Prothioconazole, 125 g/L Tebuconazole
****PTZ + TFS: 175g/L Prothioconazole, 150g/L Trifloxystrobin

In the South-East EPPO zone yield quality (HLW, moisture content and TKW) was assessed in one trial on oat, on variety EXPRESO. With regards to TKW CA3642 had a significantly higher performance when compared to the untreated. Where there was an observed increase compared to the untreated for TKW by 4.8 %. Though there were no significant differences in HLW or moisture content between CA3642 and the untreated control as well as no significant differences in HLW (Table 3.2-481), moisture content (Table 3.2-482) or TKW (Table 3.2-483) between CA3642 and the reference products in any of the trials.

Table 3.2-481: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on oat – South-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	EXPRESO	65	45		HLW %	47.75 a 100 a	**48.1 a 100.6 a**	48.4 a 101.4 a	48.3 a 101.2 a
Mean efficacy				*1*		*47.8*	***100.6***	*101.4*	*101.2*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

Table 3.2-482: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on oat – South-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	EXPRESO	65	45		MOICON %	8.70 b 100 b	**9.9 ab 113.2 ab**	9.2 b 106.1 b	9.4 b 107.5 b
Mean efficacy				*1*		*8.7*	***113.2***	*106.1*	*107.5*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

Table 3.2-483: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on oat – South-East EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250 g/L SC**	**CA2445 PTZ 250 g/L EC**
					Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	EXPRESO	65	45		TKW %	31.9 b 100 b	33.5 a 104.8 a	33.7 a 105.7 a	33.8 a 105.8 a
Mean efficacy				*1*		*31.9*	*104.8*	*105.7*	*105.8*

UTC: % green leaf area in untreated control at assessment date
All assessments are a percent relative to the UTC

~~**Table 3.2-484: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone**~~

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	200 g PTZ/ha
GBR	Ducato	HLW	112	96		69.4 a 100	69.2 a 99.7	69.2 a 99.7	69.7 a 100.4		68.6 a 98.8	68.6 a 98.8
DEU	Danielo	HLW	111	92		74.0 a 100	74.6 a 100.8	74.5 a 100.7	74.5 a 100.7	74.5 a 100.7		74.5 a 100.7
DEU	Binntto	HLW	117	97		73.4 a 100	74.0 a 100.8	73.6 a 100.3	74.7 a 101.8	73.5 a 100.1		73.5 a 100.1
GBR	Mephisto	HLW	132	97		69.1 a 100	68.3 a 98.8	68.4 a 99.0	69.0 a 99.9		68.3 a 98.8	68.3 a 98.8
				4	Mean Min Max	71.5 69.1 74.0	*100.0* 98.8 100.8	*99.9* 99.0 100.7	*100.7* 99.9 101.8			*99.6* 98.8 100.7
				2	Mean Min Max	73.7 73.4 74.0	*100.8* 100.8 100.8	*100.5* 100.3 100.7	*101.2* 100.7 101.8	*100.4* 100.1 100.7		
				3	Mean Min Max	72.3 69.4 74.0	*100.4* 99.7 100.8	*100.2* 99.7 100.7	*101.0* 100.4 101.8			
				2	Mean Min Max	69.3 69.1 69.4	*99.3* 98.8 99.7	*99.3* 99.0 99.7	*100.1* 99.9 100.4		*98.8* 98.8 98.8	

~~UTC: untreated control at assessment date~~

~~**Table 3.2-485: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone**~~

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	200 g PTZ/ha
GBR	Ducato	MOICON	112	96		13.4 a 100	13.1 a 97.8	13.3 a 99.3	12.8 a 95.5		13.4 a 100.0	13.4 a 100.0
DEU	Danielo	MOICON	111	92		13.6 b 100	14.0 ab 102.9	14.1 a 103.7	13.8 ab 101.5	13.8 ab 101.5		13.8 ab 101.5
DEU	Binntto	MOICON	117	97		11.3 a 100	11.8 a 104.4	11.9 a 105.3	11.5 a 101.8	11.8 a 104.4		11.8 a 104.4

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	200 g PTZ/ha
GBR	Mephisto	MOICON	132	97		14.7 a 100	15.1 a 102.7	14.8 a 100.7	14.8 a 100.7		14.6 a 99.3	14.6 a 99.3
				4	Mean Min Max	13.3 11.3 14.7	*102.0* 97.8 104.4	*102.2* 99.3 105.3	*99.9* 95.5 101.8			*101.3* 99.3 104.4
				2	Mean Min Max	12.5 11.3 13.6	*103.7* 102.9 104.4	*104.5* 103.7 105.3	*101.6* 101.5 101.8	*102.9* 101.5 104.4		*102.9* 101.5 104.4
				2	Mean Min Max	14.1 13.4 14.7	*100.2* 97.8 102.7	*100.0* 99.3 100.7	*98.1* 95.5 100.7		*99.7* 99.3 100.0	*99.7* 99.3 100.0

UTC: untreated control at assessment date

Table 3.2-486: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PROLINE 275 PTZ 275 g/L EC	Summarized PTZ products EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.72 L/ha 198 g PTZ/ha	200 g PTZ/ha
GBR	Ducato	TKW	122	106		39.4 a 100	40.8 a 103.6	41.5 a 105.3	40.9 a 103.8		40.6 a 103.0	40.6 a 103.0
DEU	Danielo	TKW	111	92		29.2 b 100	31.7 a 108.6	31.3 a 107.2	30.7 ab 105.1	30.2 ab 103.4		30.2 ab 103.4
DEU	Binntto	TKW	117	97		34.8 a 100	37.8 a 108.6	35.4 a 101.7	38.4 a 110.3	35.5 a 102.0		35.5 a 102.0
GBR	Mephisto	TKW	139	104		27.5 b 100	29.9 a 108.7	30.4 a 110.5	28.7 ab 104.4		28.9 ab 105.1	28.9 ab 105.1
				4	*Mean* Min Max	32.7 27.5 39.4	*107.4* 103.6 108.7	*106.2* 101.7 110.5	*105.9* 103.8 110.3			*103.4* 102.0 105.1
				2	*Mean* Min Max	32.0 29.2 34.8	*108.6* 108.6 108.6	*104.5* 101.7 107.2	*107.7* 105.1 110.3	*102.7* 102.0 103.4		*102.7* 102.0 103.4
				2	*Mean* Min Max	33.5 27.5 39.4	*106.1* 103.6 108.7	*107.9* 105.3 110.5	*104.1* 103.8 104.4		*104.1* 103.0 105.1	*104.1* 103.0 105.1

UTC: untreated control at assessment date

In the North-East EPPO zone yield quality in terms of HLW (Table 3.2-487), moisture content (Table 3.2-488) and TGW (Table 3.2-489) was assessed in 3 trials on winter rye, varieties TUR F1, Dańkowskie Rubin and KWS Serafino. For each of the quality parameters CA3642 was statistically comparable to untreated plots and to the reference standards.

Table 3.2-487: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – North-East EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2 L/ha 75 g EPC/ha + 55 g MTC/ha
POL	TUR F1	HLW	100	70		73.7 a 100	73.2 a 99.3	71.4 a 96.9	71.9 a 97.6		72.7 a 98.6
POL	Dańkowskie Rubin	HLW	85	70		80.3 a 100	80.4 a 100.1	79.0 a 98.4	79.4 a 98.9	78.6 a 97.9	78.3 a 97.5
LVA	KWS Serafino	HLW	117	87		79.1 a 100	79.3 a 100.3	79.2 a 100.1	79.7 a 100.8	79.4 a 100.4	
				3	*Mean* Min Max	77.7 73.7 80.3	*99.9* 99.3 100.3	*98.5* 96.9 100.1	*99.1* 97.6 100.8		
				2	*Mean* Min Max	79.7 79.1 80.3	*100.2* 100.1 100.3	*99.3* 98.4 100.1	*99.8* 98.9 100.8	*99.1* 97.9 100.4	
				2	*Mean* Min Max	77.0 73.7 80.3	*99.7* 99.3 100.1	*97.6* 96.9 98.4	*98.2* 97.6 98.9		*98.1* 97.5 98.6

UTC: untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

Table 3.2-488: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – North-East EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2 L/ha 75 g EPC/ha + 55 g MTC/ha
POL	TUR F1	MOICON	100	70		12.1 a 100	12.2 a 100.8	12.5 a 103.3	12.6 a 104.1		12.1 a 100.0
POL	Dańkowskie Rubin	MOICON	85	70		12.0 a 100	12.1 a 100.8	12.1 a 100.8	12.0 a 100.0	11.9 a 99.2	11.9 a 99.2
LVA	KWS Serafino	MOIC	112	82		14.1	14.7 a	14.6 a	14.6 a	15.0 a	

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2 L/ha 75 g EPC/ha + 55 g MTC/ha
		ON				a 100	104.3	103.5	103.5	106.4	
				3	*Mean* Min Max	12.7 12.0 14.1	*102.0* 100.8 104.3	*102.6* 100.8 103.5	*102.6* 100.0 104.1		
				2	*Mean* Min Max	13.1 12.0 14.1	*102.5* 100.8 104.3	*102.2* 100.8 103.5	*101.8* 100.0 103.5	*102.8* 99.2 106.4	
				2	*Mean* Min Max	12.1 12.0 12.1	*100.8* 100.8 100.8	*102.1* 100.8 103.3	*102.1* 100.0 104.1		*99.6* 99.2 100.0

UTC: untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

Table 3.2-489: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter rye – North-East EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC EPC + MTC** 65 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2 L/ha 75 g EPC/ha + 55 g MTC/ha
POL	TUR F1	TKW	132	102		24.4 a 100	25.6 a 104.9	24.8 a 101.6	25.2 a 103.3		22.0 a 90.2
POL	Dańkowskie Rubin	TKW	87	72		30.8 a 100	32.4 a 105.2	32.5 a 105.5	31.8 a 103.2	31.7 a 102.9	32.1 a 104.2
LVA	KWS Serafino	TKW	127	97		27.3 a 100	26.6 a 97.4	26.2 a 96.0	27.8 a 101.8	26.4 a 96.7	
				3	*Mean* Min Max	27.5 24.4 30.8	*102.5* *97.4* *105.2*	*101.0* *96.0* *105.5*	*102.8* *101.8* *103.3*		
				2	*Mean* Min Max	29.1 27.3 30.8	*101.3* *97.4* *105.2*	*100.7* *96.0* *105.5*	*102.5* *101.8* *103.2*	*99.8* *96.7* *102.9*	
				2	*Mean* Min Max	27.6 24.4 30.8	*105.1* *104.9* *105.2*	*103.6* *101.6* *105.5*	*103.3* *103.2* *103.3*		*97.2* *90.2* *104.2*

UTC: untreated control at assessment date
** EPC + MTC: Epoxiconazole 37.5g/L + Metconazole 27.5g/L

In the South-East EPPO zone yield quality in terms of HLW (Table 3.2-490), moisture content (Table 3.2-491) and TGW (Table 3.2-492) was assessed in 2 trials on winter rye, varieties Dankowskie Diament and SUCEVEANA. For each of the quality parameters CA3642 was statistically comparable to the reference standards.

On variety SUCEVEANA, CA3642 at both rates significantly increased HLW, moisture content and TGW compared to the untreated control. In the other trial the quality parameters were comparable to the untreated control, although a notable increase in TGW was observed on variety Dankowskie Diament of 10 % and 6 % for the rates of 1.4 L/ha and 1.2 L/ha respectively.

Table 3.2-490: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha
HUN	Dankowskie Diament	HLW	111	89		72.4 a 100	72.3 a 99.9	71.9 a 99.3	71.9 a 99.3		72.3 a 99.9
ROU	SUCEVEANA	HLW	66	47		70.8 b 100	72.0 a 101.7	71.8 a 101.4	71.9 a 101.6	72.0 a 101.7	
				2	*Mean* Min Max	71.6 70.8 72.4	*100.8* 99.9 101.7	*100.4* 99.3 101.4	*100.4* 99.3 101.6		
				1	*Mean*	70.8	*101.7*	*101.4*	*101.6*	*101.7*	
				1	*Mean*	72.4	*99.9*	*99.3*	*99.3*		*99.9*

UTC: untreated control at assessment date
**150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Table 3.2-491: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha
HUN	Dankowskie Diament	MOICON	104	82		12.6 a 100	12.9 a 102.4	12.8 a 101.6	12.6 a 100.0		12.7 a 100.8
ROU	SUCEVEANA	MOICON	66	47		13.5 c 100	14.2 a 105.2	14.3 a 105.9	14.1 ab 104.4	13.9 ab 103.0	
				2	*Mean*	13.1	*103.8*	*103.8*	*102.2*		

					Min Max	12.6 13.5	*102.4* *105.2*	*101.6* *105.9*	*100.0* *104.4*		
				1	*Mean*	13.5	*105.2*	*105.9*	*104.4*	*103.0*	
				1	*Mean*	12.6	*102.4*	*101.6*	*100.0*		*100.8*

UTC: untreated control at assessment date
**150g/l Pyraclostrobin, 75g/l Fluxapyroxad

Table 3.2-492: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on winter rye – South-East EPPO zone

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC	PRIAXOR PCS + FLX** 225 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**1.5 L/ha 225 g PCS/ha + 112.5 g FLX/ha**
HUN	Dankowskie Diament	TKW	111	89		26.1 a 100	**28.8 a** **110.3**	**27.7 a** **106.1**	27.7 a 106.1		28.4 a 108.8
ROU	SUCEVEANA	TKW	66	47		29.3 b 100	**32.3 a** **110.2**	**32.2 a** **109.9**	31.8 a 108.5	31.7 a 108.2	
				2	*Mean* Min Max	27.7 26.1 29.3	***110.3*** **110.2** **110.3**	***108.0*** **106.1** **109.9**	*107.3* 106.1 108.5		
				1	*Mean*	29.3	***110.2***	***109.9***	*108.5*	*108.2*	
				1	*Mean*	26.1	***110.3***	***106.1***	*106.1*		*108.8*

UTC: untreated control at assessment date
**150g/l Pyraclostrobin, 75g/l Fluxapyroxad

In the Maritime EPPO zone on 1 trial without disease on variety BENDIX, HLW (Table 3.2-493), moisture content (Table 3.2-494) and TGW (Table 3.2-495) was assessed. For all quality parameters CA3642 was statistically comparable to the reference standards and to the untreated control, with no notable increase in values. Hence it can be surmised that in the absence of disease applications of CA3642 will not adversely affect the yield quality of winter rye.

Table 3.2-493: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

Country	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		**1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha**	**1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
FRA	BENDIX	HLW	111	89		66.2 a	**66.3 a**	**66.2 a**	66.4 a	66.4 a

						100	100.2	100.0	100.3	100.3
				1	Mean	66.2	100.2	100.0	100.3	100.3

UTC: untreated control at assessment date

Table 3.2-494: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

Coun-try	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
FRA	BENDIX	MOICON	111	89		14.0 a 100	14.3 a 102.1	14.1 a 100.7	14.3 a 102.1	14.3 a 102.1
				1	Mean	14.0	102.1	100.7	102.1	102.1

UTC: untreated control at assessment date

Table 3.2-495: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter rye – Maritime EPPO zone – without disease

Coun-try	Variety	Rating Type	DA-A	DA-B	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC		CA2702 AZX 250 g/L SC	CA2445 PTZ 250 g/L EC
					Rate		1.4 L/ha 210 g AZX/ha + 210 g PTZ/ha	1.2 L/ha 180 g AZX/ha + 180 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
FRA	BENDIX	TKW	164	142		26.5 a 100	27.5 a 103.8	27.2 a 102.6	27.1 a 102.3	27.2 a 102.6
				1	Mean	26.5	103.8	102.6	102.3	102.6

UTC: untreated control at assessment date

Comments of zRMS:

The increase of the quality parameters of oat yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 6,8% at 1 l/ha in case of moisture content. No significant differences were detected in HLW and TGW. In the North-East EPPO zone, the increase was 1,3% at 1 l/ha in case of HLW and 2,6% at 1 l/ha in case of moisture content. No increase in TGW was detected. In the South-East EPPO zone, CA3642 achieved results of 0,6% at 1 l/ha in case of HLW, 13,2% at 1 l/ha in case of moisture content and 4,8% at 1 l/ha in case of TGW. In conclusion, slight positive impact on the quality parameters of oat yield was visible.

Winter barley (HORVW)

As demonstrated for winter barley, application of CA3642 applied at 1.0 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In 42 efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease. One of these trials were excluded from efficacy evaluation due to very low, and during the trial completely vanishing, disease pressure.

Yield quantity and quality was assessed a total of 42 efficacy trials carried out in the Maritime (18 trials), North-East (12 trials) and South-East (12 trials) EPPO zones between 2019 and 2021.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology

is available in
Winter barley (HORVW)

Table 3.2-263.

Yield quantity (t/ha)

Yield quantity (t/ha) was evaluated in 42 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.0 L/ha against foliar diseases.

In the Maritime EPPO Zone, applications of CA3642 at the proposed dose rate significantly increased yield compared to the untreated in 12 of the 18 trials. In the other 6 trials the yield was also increased but not at a statistically significant level. CA3642 gave statistically comparable yield to CA2445 in 15 of 16 trials where that was applied, and in 1 trial yield was significantly lower. Compared to CA2702 yield was comparable from CA3642 in 13 of 16 trials and significantly higher than CA2702 in 3 trials.

There was no negative effect of CA3642 on yield (t/ha) of winter barley in trials conducted in the North-East EPPO zone. In 9 out of 12 trials, the values of yield (t/ha) were comparable between treated and untreated crops. In three trials, CA3642 gave significantly higher yield compared to the untreated. CA3642 was comparable to the reference standards except in 1 trial where yield was significantly higher compared to CA2445.

In the South-East EPPO Zone, applications of CA3642 at the proposed dose rate significantly increased yield compared to the untreated in 6 of the 12 trials. In the other 6 trials the yield was also increased but not at a statistically significant level. CA3642 gave statistically comparable yield to CA2445 in 12 of 12 trials where that was applied, Compared to CA2702 yield was comparable from CA3642 in 12 of 12 trials.

Table 3.2-496: Yield (t/ha) effect of CA3642 in efficacy trials on winter barley – Maritime EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
DEU	Meridian	79	60		Yield cf UTC	7.8b 100	**8.6a 110**	8.4a 108	8.7a 112
FRA	Etincelle	80	66		Yield cf UTC	7.2a 100	**7.8a 108**	7.6a 106	8.6a 119
DEU	SU Ellen	84	70		Yield cf UTC	8.9c 100	**10.4a 117**	9.7b 109	10.4a 117
DEU	Kosmos	84	63		Yield cf UTC	7.5d 100	**10.4abc 139**	9.9bc 132	10.3abc 137
GBR	Carat	80	49		Yield cf UTC	7.3a 100	**7.7a 105**	7.5a 103	7.5a 103
DEU	Lomerit	78	54		Yield cf UTC	6.1b 100	**7.6a 125**	6.5ab 107	7.3ab 120
DEU	Sandra	82	62		Yield cf UTC	8.5a 100	**9a 106**	8.3a 98	8.9a 105
FRA	Rafaela	71	56		Yield cf UTC	7.5b 100	**8.2a 109**	8a 107	8a 107
FRA	Etincel	71	57		Yield cf UTC	6.9a 100	**7.4a 107**	7.4a 107	6.9a 100
CZE	Triunf	78	59		Yield cf UTC	7.9a 100	**9.1a 115**	8.7a 110	9.2a 116
FRA	Etincel	77	63		Yield cf UTC	8.4d 100	**9.5bc 113**	9.3c 111	10.1a 120
DEU	Lomerit	79	65		Yield cf UTC	6.1c 100	**7ab 115**	7ab 115	6.7b 110
DEU	Meridian	89	70		Yield cf UTC	7.7b 100	**8.7a 113**	8.3a 108	8.7a 113
FRA	Etincel	99	76		Yield cf UTC	6.2a 100	**7.2a 117**		
GBR	KWS Cassia	112	81		Yield cf UTC	9b 100	**11.1a 123**	9.7b 108	11.1a 123
GBR	KWS Orwell	112	83		Yield cf UTC	7.6b 100	**9.3a 122**	8.9a 117	9.3a 122
GBR	Orwell	102	84		Yield cf UTC	11.4b 100	**12.4a 109**	11.7b 103	12.7a 111
GBR	KWS Orwell	106	84		Yield	6b	**7.7a**		

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha** **150 g/L AZX + 150 g/L**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**
					cf UTC	100	**128**		
				18	*Mean* Min Max	7.7 6 11.4	***116*** **105** **139**		
				16	*Mean* Min Max	7.8 6.1 11.4	***115*** **105** **139**	*109* 98 132	*115* 100 137

Table 3.2-497: Yield (t/ha) effect of CA3642 in efficacy trials on winter barley – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha** **150 g/L AZX + 150 g/L**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**
POL	Ordinale	75	36		Yield cf UTC	7.38a 100	**7.58a** **103**	8.566a 116	8.9 a 121
POL	Gloria	76	37		Yield cf UTC	6.05c 100	**7.54a** **125**	6.801ab 112	6.565 b 108
POL	Titus	85	37		Yield cf UTC	6.17b 100	**7.455ab** **121**	7.264ab 118	6.735 ab 109
POL	Meridian	87	38		Yield cf UTC	6.018b 100	**7.184a** **119**	6.911ab 115	7.227a 120
LVA	Meridian	63	38		Yield cf UTC	3.32a 100	**3.37a** **102**	3.119a 94	3.79a 114
POL	ZENEK	70	40		Yield cf UTC	6.66a 100	**6.77a** **102**	6.402 a 96	6.59a 99
POL	-	86	40		Yield cf UTC	5.66c 100	**7.44ab** **131**	7.256 ab 128	7.59ab 134
LTU	Meridian	65	50		Yield cf UTC	3.02b 100	**3.303ab** **109**	3.381 ab 112	3.493ab 115
LVA	KWS Tenor	72	52		Yield cf UTC	5.548a 100	**6.002 a** **108**	5.616a 101	5.977a 108
LVA	Meridian	67	52		Yield	6.65a	**6.863 a**	6.29a	6.817a

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
					cf UTC	100	**103**	95	103
LTU	Mercurioo	68	53		Yield cf UTC	4.67a 100	**4.834 a 103**	4.99a 107	4.98a 107
POL	KOBUZ	89	60		Yield cf UTC	6.03a 100	**5.877 a 97**	6.492a 108	5.956a 99
				12	*Mean* Min Max	5.6 3.0 7.4	***110*** **97** **131**	*108* 94 128	*111* 99 134

Table 3.2-498: Yield (t/ha) effect of CA3642 in efficacy trials on winter barley – South-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	CAROLINA	80	58		Yield cf UTC	6.452c 100	7.825a 121	7.685ab 119	7.770 ab 120
SVK	LG Triumph	62	42		Yield cf UTC	3.958c 100	4.084ab 103	4.038b 102	4.105a 104
BGR	Obzor	70	49		Yield cf UTC	3.553b 100	4.38a 123	4.170 ab 117	4.371a 123
BGR	Obzor	65	50		Yield cf UTC	3.704a 100	4.66a 126	4.191a 113	4.60a 124
BGR	Calypso	71	53		Yield cf UTC	3.427a 100	3.981a 116	3.521a 103	3.837a 112
ROU	GERHART	77	54		Yield cf UTC	5.272b 100	6.161a 117	6.159a 117	6.162a 117
BGR	Kasanova	73	55		Yield cf UTC	3.313 b 100	4.157a 125	3.724a 112	4.060a 122
BGR	Kasanova	75	57		Yield cf UTC	3.442 b 100	4.094a 119	3.625ab 105	3.948ab 115
BGR	Obzor	76	59		Yield	3.472 a	4.183a	4.054a	4.030a

					cf UTC	100	120	117	116
HUN	SY TEPEE	90	61		Yield cf UTC	6.011 b 100	6.675ab 111	6.971a 116	7.017a 117
BGR	Obzor	83	65		Yield cf UTC	3.150a 100	3.686a 117	3.426a 109	3.606a 114
HUN	CAROLINA	82	66		Yield cf UTC	6.976a 100	7.618a 109	7.243a 104	7.678a 110
				12	*Mean* Min Max	*4.4* 3.2 6.98	***117*** **103** **126**	*111* 102 119	*116* 104 124

Comments of zRMS:

The mean yield of winter barley increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 16% at 1 l/ha in 18 trials. In the North-East EPPO zone, the increase was 10% at 1 l/ha in 12 trials. Similar level was detected for CA2702 (8%) and CA2445 (11%). In the South-East EPPO zone, the increase was 17% at 1 l/ha in 12 trials. No significant differences between test and reference products were visible. In conclusion, slight positive impact on the winter barley yield was observed after 2 applications of CA3642.

Yield quality

Yield quality in terms of hectolitre weight, moisture content and thousand grain weight was evaluated in 42 efficacy trials, implemented to evaluate the effectiveness of CA3642 at 1.0 L/ha against foliar diseases.

CA3642 at the proposed label rate of 1.0 L/ha had no negative effect on the yield quality parameters of winter barley in the presence of disease. In all but a few exceptions no statistically significant differences were observed compared to the used reference standards.

Maritime EPPO Zone

In the Maritime EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 18 trials on winter barley.

In terms of hectolitre weight (HLW-kg), treated and untreated crop plants were similar. In 15 trials out of 18 there were not significant differences among treated or untreated crop plants. In three trials out of 18, plants treated with either CA3642, CA2702 or CA2445 showed significantly higher HLW than the untreated control. There were no significant differences in HLW between plants treated with CA3642 and those treated with the reference standards in any of the trials.

Regarding moisture content, in 16 of 18 trials there were no significant differences among treated or untreated plants. In one trial on variety Kosmos, plants treated with CA3642, CA2702 or CA2445 significantly increased moisture content, and in one trial on variety Orwell CA3642 and CA2445 significantly increased moisture content. There were no significant differences in moisture content between CA3642 or the reference standards.

For thousand grain weight, values for treated or untreated crop plants did not differ significantly in most of the trials (14 out of 18). In the remaining four trials, yield (thousand grain weight) was significantly higher for crops treated with CA3642. This was also the case for plants treated with CA2702 in one of the trials and CA2445 in two of the four trials. There were no significant differences in HLW between plants treated with CA3642 and those treated with the reference standards in any of the trials.

Table 3.2-499: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter barley – Maritime EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		1.0 L/ha 150 g/L AZX + 150 g/L	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
DEU	Meridian	79	60		HLW cf UTC	60.5a 100	**60.9a** **101**	60.3a 100	61.7a 102
DEU	SU Ellen	84	70		HLW cf UTC	63.0a 100	**63.6a** **101**	63.4a 101	62.9a 100
DEU	Kosmos	84	63		HLW cf UTC	54.8b 100	**61.9a** **113**	60.9a 111	60.8a 111
FRA	ETINCELLE	81	67		HLW cf UTC	62.2b 100	**63.4ab** **102**	63.3ab 102	64.7a 104
GBR	CARAT	80	49		HLW cf UTC	67.7a 100	**66.7a** **99**	67.0a 99	66.9a 99
DEU	Lomerit	78	54		HLW cf UTC	61.9ab 100	**64.8ab** **105**	64.6a 104	63.4ab 102
DEU	Sandra	82	62		HLW cf UTC	63.5a 100	**63.7a** **100**	63.4a 100	63.6a 100
FRA	ETINCEL	71	57		HLW cf UTC	68.1a 100	**69.3a** **102**	68.9a 101	68.7a 101
CZE	Triumf	78	59		HLW cf UTC	56.8a 100	**57.3a** **101**	57.0a 100	56.0a 99
FRA	Rafaela	74	59		HLW cf UTC	64.3a 100	**63.3a** **98**	63.3a 98	63.8a 99
DEU	Lomerit	79	65		HLW cf UTC	68.6a 100	**68.4a** **100**	69.3a 101	69.1a 101
DEU	Meridian	89	70		HLW cf UTC	58.9a 100	**58.5a** **99**	57.5a 98	58.9a 100
FRA	Etincel	103	80		HLW cf UTC	54.8a 100	**54.8a** **100**		
GBR	KWS Cassia	112	81		HLW cf UTC	59.1a 100	**61.4a** **104**	60.0a 101	62.0a 105
GBR	KWS Orwell	112	83		HLW cf UTC	55.6a 100	**57.7a** **104**	56.8a 102	57.2a 103
GBR	Orwell	102	84		HLW cf UTC	62.2d 100	**63.5abc** **102**	62.9c 101	64.1a 103

FRA	Etincel	98	84		HLW cf UTC	61.0b 100	**64.0a** **105**	64.0a 105	64.7a 103
GBR	KWS Orwell	106	84		HLW cf UTC	62.1a 100	**64.0a** **103**		61.7a 106
				18	*Mean* Min Max	61.4 54.8 68.6	***102*** **98** **113**		
				16	*Mean* Min Max	61.8 54.8 68.6	***102*** ***98*** ***113***	*102* 98 111	*102* *99* *111*
				17	*Mean* Min Max	61.8 54.8 68.6	***102*** ***98*** ***113***		*102* 99 111

Table 3.2-500: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter barley – Maritime EPPO zone

Country	**Variety**	**DA-A**	**DA-B**	**No. of trials**	**Name** **Conc** **Type**	**UTC**	**CA3642** **150 g/L AZX + 150 g/L PTZ** **300 g/L** **SC**	**CA2702** **250 g/L** **AZX** **SC**	**CA2445** **250 g/L** **PTZ** **EC**
					Rate		**1.0 L/ha** **150 g/L AZX + 150 g/L**	**0.8 L/ha** **200 g AZX/ha**	**0.8 L/ha** **200 g PTZ/ha**
DEU	Meridian	79	60		MOICON cf UTC	10.9a 100	**11.0a** **101**	11.0a 101	10.9a 100
FRA	ETINCELLE	81	67		MOICON cf UTC	10.8a 100	**10.9a** **101**	10.7a 99	10.7a 99
DEU	SU Ellen	84	70		MOICON cf UTC	13.1a 100	**14.1a** **108**	13.5a 108	13.7a 105
DEU	Kosmos	84	63		MOICON cf UTC	9.5c 100	**11.7ab** **123**	11.3b 123	11.7ab 123
GBR	CARAT	80	49		MOICON cf UTC	13.3a 100	**13.4a** **101**	13.2a 99	13.3a 100
DEU	Lomerit	78	54		MOICON cf UTC	12.2a 100	**12.3a** **101**	12.1a 99	12.2a 100
DEU	Sandra	82	62		MOICON cf UTC	13.9a 100	**13.8a** **99**	13.8a 99	14.0a 101
FRA	ETINCEL	71	57		MOICON cf UTC	10.5a 100	**10.5a** **100**	10.5a 100	10.7a 102
CZE	Triumf	78	59		MOICON cf UTC	9.75a 100	**10.0a** **102**	10.1a 103	10.0a 102
FRA	Rafaela	74	59		MOICON cf UTC	9.9a 100	**10.0a** **101**	9.9a 100	9.9a 100

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
DEU	Lomerit	79	65		MOICON cf UTC	13.2a 100	**13.2a 100**	13.1a 99	13.2a 100
DEU	Meridian	89	70		MOICON cf UTC	14.5a 100	**14.5a 100**	14.5a 100	14.4a 99
FRA	Etincel	103	80		MOICON cf UTC	13.6a 100	**13.6a 100**		
GBR	KWS Cassia	112	81		MOICON cf UTC	14.1a 100	**14.2a 101**	14.1a 100	14.3a 101
GBR	KWS Orwell	112	83		MOICON cf UTC	13.9a 100	**14.2a 103**	14.0a 103	14.0a 101
GBR	Orwell	102	84		MOICON cf UTC	13.0b 100	**13.2a 101**	13.1ab 101	13.2a 101
FRA	Etincel	98	84		MOICON cf UTC	9.9a 100	**10.0a 101**	9.8a 99	10.3a 104
GBR	KWS Orwell	106	84		MOICON cf UTC	11.2a 100	**11.2a 100**		
				18	*Mean* Min Max	12.1 9.5 14.5	***102*** **99** **123**		
				16	*Mean* Min Max	12.0 9.5 14.5	***103*** **99** **123**	*103* 99 123	*102* 99 123

Table 3.2-501:**Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on winter barley – Maritime EPPO zone**

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
DEU	Meridian	79	60		TGW cf UTC	44.9a 100	**46.2a 103**	45.5a 101	46.4a 103
FRA	ETINCELLE	89	75		TGW cf UTC	35.2b 100	**38.0ab 108**	36.2ab 103	38.5a 109
DEU	SU Ellen	84	70		TGW	49.4a	**50.4a**	49.4a	49.8a

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
					cf UTC	100	**102**	100	101
DEU	Kosmos	84	63		TGW cf UTC	31.0b 100	**40.7a 131**	38.6a 125	38.1a 123
FRA	Etincel				TGW cf UTC	34.8b 100	**36.5ab 105**		
DEU	Lomerit	78	54		TGW cf UTC	41.0b 100	**46.1a 113**	43.9ab 107	44.8ab 109
DEU	Sandra	82	62		TGW cf UTC	56.3a 100	**56.5a 100**	56.3a 100	57.6a 102
CZE	Triumf	78	59		TGW cf UTC	44.9a 100	**48.1a 107**	47.15a 105	49.9a 111
FRA	Rafaela	77	62		TGW cf UTC	41.7a 100	**44.5a 107**	43.5a 104	44.6a 107
DEU	Lomerit	79	65		TGW cf UTC	45.4a 100	**46.4a 102**	47.1a 104	46.6a 103
DEU	Meridian	89	70		TGW cf UTC	47.7b 100	**50.2a 105**	49.6ab 104	48.8ab 102
FRA	ETINCEL	90	76		TGW cf UTC	42.2a 100	**43.3a 103**	43.0a 102	43.2a 102
GBR	KWS Cassia	112	81		TGW cf UTC	45.9a 100	**49.3a 107**	47.0a 103	48.3a 105
GBR	CARAT	114	83		TGW cf UTC	46.3a 100	**47.1a 102**	42.7a 92	47.6a 103
GBR	KWS Orwell	112	83		TGW cf UTC	43.8a 100	**46.1a 105**	45.3a 104	48.6a 111
GBR	Orwell	102	84		TGW cf UTC	48.5c 100	**50.8ab 105**	49.0bc 101	51.6a 106
FRA	Etincel	105	91		TGW cf UTC	33.2a 100	**37.1a 112**	34.4a 103	37.5a 113
GBR	KWS Orwell	115	93		TGW cf UTC	47.0a 100	**49.6a 106**		
				18	*Mean* Min Max	*43.3* 31 56.3	***107*** **100** **131**		
				16	*Mean* Min	*43.6* 31	***107*** **100**	*104* 92	*107* 101

Country	**Variety**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC**	**CA2702 250 g/L AZX SC**	**CA2445 250 g/L PTZ EC**
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
					Max	56.3	**131**	125	123

North-East EPPO Zone

In the North-East EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 12 trials on winter barley.

In 11 out of 12 trials, values of yield quality (HLW-kg) were similar for treated or untreated crops. In one trial, the values for this parameter were higher for plants sprayed with CA3642 and also for the reference products. There were no significant differences in HLW among CA3642 and the reference products in any of the trials.

Moisture content values are comparable between plants sprayed with CA3642 or the reference products. This was the case for 10 out of 12 trials. In two trials, higher values for moisture content were obtained for plants sprayed with CA3642. There were no significant differences in moisture content among CA3642 and the reference products in any of the trials.

In 1 of 12 trials applications of CA3642 at 1.0 L/a significantly increased thousand grain weight compared to the untreated controls, In the other 11 trials TGW was statistically comparable between CA3642 and the untreated. TGW from plants treated with CA3642 was comparable to CA2445 in 9 out of 10 trials and comparable to CA2702 in all except 1 trial, whereCA2702 had significantly lower TGW.

Table 3.2-502: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter barley – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
LVA	Meridian	67	52		HLW cf UTC	71.889a 100	70.177 a 98	72.942 a 101	74.852 a 104
LVA	Meridian	63	38		HLW cf UTC	72.185a 100	72.194 a 100	69.448a 96	50.137a 69
POL	ZENEK	70	40		HLW cf UTC	54.45a 100	55.93a 103	53.7a 99	54.1a 99
POL	Titus	90	42		HLW cf UTC	66.065ab 100	66.733ab 101	65.85ab 100	66.503ab 101
POL	Meridian	92	43		HLW cf UTC	68.765a 100	68.568a 100	67.855a 99	68.05a 99
POL	-	91	45		HLW cf UTC	67.235b 100	70.275a 105	69.16a 103	69.388a 103
LVA	KWS Tenor	72	52		HLW cf UTC	68.228a 100	68.238a 100	65.786a 96	65.492a 96
POL	KOBUZ	89	60		HLW cf UTC	51.45a 100	53.55a 104	54.63a 106	52.5a 102
LTU	Mercurioo	96	81		HLW cf UTC	63.08a 100	63.45a 101	62.3a 99	63.03a 100
LTU	Meridian	103	88		HLW cf UTC	62.6 a 100	62.1a 99	62.9a 100	62.93a 101
POL	Gloria	134	95		HLW cf UTC	55.895d 100	59.22abc 106	58.505abc 105	59.255abc 106
POL	Ordinale	134	95		HLW cf UTC	61.86ad 100	63.38ab 102	60.675cd 98	62.245ad 101
				12	*Mean* Min Max	*63.4* 51.5 72.2	***101*** **98** **106**	*100* 96 106	*98* 69 106

Table 3.2-503: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter barley – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
POL	Ordinale	75	36		MOICON cf UTC	7.48 a 100	**7.75 a 104**	7.83a 105	7.7a 103
POL	Gloria	76	37		MOICON cf UTC	7.63 a 100	**7.9a 103**	7.73a 101	7.68a 101
POL	Titus	85	37		MOICON cf UTC	9.55 a 100	**10.78a 113**	11.8a 124	10.3a 108
POL	Meridian	87	38		MOICON cf UTC	8.43 b 100	**8.8a 104**	8.7ab 103	8.5ab 101
LVA	Meridian	63	38		MOICON cf UTC	20.93a 100	**22.88a 109**		22.48a 107
POL	ZENEK	70	40		MOICON cf UTC	9.48 a 100	**9.53a 100**	9.63a 102	9.6a 101
POL	-	86	40		MOICON cf UTC	8.4 a 100	**9.03 a 107**	8.83a 105	8.93a 106
LTU	Meridian	65	50		MOICON cf UTC	15.9 a 100	**16.53a 104**		16.4a 103
LVA	KWS Tenor	72	52		MOICON cf UTC	15.89b 100	**16.98a 107**		16.31ab 103
LVA	Meridian	67	52		MOICON cf UTC	20.17a 100	**19.47a 96**		21.07a 104
LTU	Mercurioo	68	53		MOICON cf UTC	16.08a 100	**16.23a 101**		16.43a 102
POL	KOBUZ	89	60		MOICON cf UTC	10.35a 100	**10.3a 99**	10.4a 100	10.5a 101
				12	*Mean* Min Max	*12.5* 7.5 20.9	***104*** **96** **113**		*103* 101 108
				7	*Mean* Min Max	*8.8* 7.5 10.4	***104*** ***99*** ***113***	*106* 100 124	*103* *101* *108*

Table 3.2-504: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on winter barley – North-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
POL	Titus	90	42		TGW cf UTC	42.87 a 100	**45.9 a 107**	43.76 a 102	
POL	Meridian	92	43		TGW cf UTC	44.623 a 100	**46.1 a 103**	44.295 a 99	45.22 a 101
POL	-	91	45		TGW cf UTC	43.98 a 100	**44.5 a 101**	44.023 a 100	44.23 a 101
POL	ZENEK	89	59		TGW cf UTC	43.08 a 100	**43.3 a 100**	45.1 a 104	47.4 a 110
LVA	Meridian	97	72		TGW cf UTC	50.985 a 100	**51.3 a 101**	52.875 a 104	52.18 a 102
LTU	Mercurioo	96	81		TGW cf UTC	48.3 ab 100	**48.3 ab 100**	47.81 b 99	48.41 ab 100
LVA	KWS Tenor	105	85		TGW cf UTC	45.365 a 100	**46.8 a 103**	45.33 a 100	45.19 a 100
LVA	Meridian	103	88		TGW cf UTC	45.31 a 100	**42.5 a 94**	41.42 a 91	44.47 a 98
LTU	Meridian	104	89		TGW cf UTC	50.488 a 100	**51.1 a 101**	50.93 a 101	50.94 a 101
POL	KOBUZ	121	92		TGW cf UTC	41.5 a 100	**41.8 a 101**	45.15 a 109	37.95 a 91
POL	Gloria	134	95		TGW cf UTC	31.498 f 100	**35.9 bc 114**	32.853 ef 104	34.98 cd 111
POL	Ordinale	134	95		TGW cf UTC	36.385 a 100	**39.6 a 109**	39.795 a 109	39.32 a 108
				12	*Mean* Min max	*43.7* 31.5 51	***103*** **94** **114**	*102* 91 109	*102* 91 111

South-East EPPO Zone

In terms of HLW (HLW-kg), treated and untreated crop plants were similar. In 11 trials out of 12 there were not significant differences among treated or untreated crop plants. In one trial out of 12, plant treated with either CA3642, CA2702 or CA2445 showed higher HLW than the untreated control. There were no significant differences in HLW between plants treated with CA3642 and those treated with the reference standards besides that trial whereby the reference standards gave significantly higher HLW compared to CA3642.

Regarding moisture content, in 11 of 12 trials there were no significant differences among treated or untreated plants. In one trial on variety CAROLINA, plants treated with CA3642, CA2702 or CA2445 significantly increased moisture content. There were no significant differences in moisture content between CA3642 or the reference standards in any of the trials.

For thousand grain weight, values for treated or untreated crop plants did not differ significantly in most of the trials (9 out of 12). In the remaining trial, yield (thousand grain weight) was significantly higher for crops treated with CA3642. This was also the case for plants treated with CA2702 and CA2445. There were no significant differences in TGW between CA3642 or the reference standards in any of the trials.

Table 3.2-505: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter barley – South-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		1.0 L/ha 150 g/L AZX + 150 g/L	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha
ROU	CAROLINA	80	58		HLW cf UTC	58.13 c 100	58.8 b 101	59.23 a 102	59.1 ab 101
SVK	LG Triumph	62	42		HLW cf UTC	80.35 a 100	80.4 a 100	80.35 a 100	80.4 a 100
ROU	GERHART	77	54		HLW cf UTC	53.95 b 100	54.6 ab 101	55.5 ab 103	54.1 ab 97
HUN	SY Tepee	100	71		HLW cf UTC	60.34 a 100	59.2 a 98	59.6 a 99	60.4 a 101
BGR	Obzor	100	79		HLW cf UTC	58.68 a 100	60.3 a 103	59.68 a 102	60.2 a 101
BGR	Calypso	100	82		HLW cf UTC	63.48 a 100	64 a 101	64 a 101	64.1 a 100
BGR	Obzor	101	83		HLW cf UTC	63.30 a 100	64.1 a 101	64 a 101	64.2 a 100
BGR	Kasanova	102	84		HLW cf UTC	61.60 a 100	62.9 a 102	62.18 a 101	62.6 a 101
BGR	Kasanova	102	84		HLW cf UTC	61.70 a 100	63.1 a 102	61.7 a 100	62.5 a 101
BGR	Obzor	99	84		HLW cf UTC	56.90 a 100	58.1 a 102	57.7 a 101	58 a 100
HUN	KH TAS	105	89		HLW cf UTC	61.9 a 100	62.8 a 101	62.89 a 102	62.8 a 100
BGR	Obzor	108	91		HLW cf UTC	57.30 a 100	58.9 a 103	58.28 a 102	58.7 a 101
				12	*Mean* Min Max	*61.5* 54 80.4	***101*** **98** **103**	*101* 99 103	*100* 97 101

Table 3.2-506: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter barley – South-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	CAROLINA	80	58		MOICON cf UTC	11.68 b 100	**12.35 a 106**	12.25 a 105	12.23 a 105
SVK	LG Triumph	62	42		MOICON cf UTC	12.38 a 100	**12.43 a 100**	12.4 a 100	12.43 a 100
BGR	Obzor	70	49		MOICON cf UTC	12.75 a 100	**12.65 a 99**	12.68 a 99	12.83 a 101
BGR	Obzor	65	50		MOICON cf UTC	3.335 a 100	**4.228 a 127**	3.78 a 113	4.175 a 125
BGR	Calypso	71	53		MOICON cf UTC	12.78 ab 100	**12.83ab 100**	12.85 ab 101	12.95 a 101
ROU	GERHART	77	54		MOICON cf UTC	14.98 b 100	**15.53 a 104**	15.53 a 104	15.55 a 104
BGR	Kasanova	73	55		MOICON cf UTC	12.90 a 100	**12.68 a 98**	12.85 a 100	12.6 a 98
BGR	Kasanova	75	57		MOICON cf UTC	12.50 a 100	**12.5 a 100**	12.83 a 103	12.55 a 100
BGR	Obzor	76	59		MOICON cf UTC	12.70 a 100	**12.7 a 100**	12.78 a 101	12.98 a 102
HUN	SY TEPEE	90	61		MOICON cf UTC	10.28 a 100	**10.38 a 101**	10.4 a 101	10.43 a 101
BGR	Obzor	83	65		MOICON cf UTC	11.93 a 100	**12.25 a 103**	12.08 a 101	12.15 a 102
HUN	CAROLINA	82	66		MOICON cf UTC	9.68 ab 100	**9.78 ab 101**	9.78 ab 101	9.65 b 100
				12	*Mean* Min Max	*11.5* 3.3 15	*103* **98** **127**	*102* 99 113	*103* 98 125

Table 3.2-507: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on winter barley – South-East EPPO zone

Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 150 g/L AZX + 150 g/L PTZ 300 g/L SC	CA2702 250 g/L AZX SC	CA2445 250 g/L PTZ EC
					Rate		**1.0 L/ha 150 g/L AZX + 150 g/L**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**
ROU	CAROLINA	80	58		TGW cf UTC	46.109b 100	**50.32 a 109**	49.62 a 108	50.12 a 109
SVK	LG Triumph	62	42		TGW cf UTC	46.955a 100	**47.09 a 100**	47.02 a 100	47.08 a 100
ROU	GERHART	77	54		TGW cf UTC	46.948b 100	**49.76 a 106**	49.9 a 106	50.46 a 107
HUN	SY TEPEE	100	71		TGW cf UTC	49.99a 100	**51.35 a 103**	48.59 a 97	51.27 a 102
BGR	Obzor	100	79		TGW cf UTC	40.15a 100	**41.5 a 103**	41.13 a 102	41.48 a 103
BGR	Calypso	100	82		TGW cf UTC	40.28a 100	**41.1 a 102**	40.83 a 101	41.6 a 103
BGR	Obzor	101	83		TGW cf UTC	41.75a 100	**43 a 103**	42.13 a 101	42.48 a 102
BGR	Kasanova	102	84		TGW cf UTC	40.95a 100	**41.85 a 102**	41.45 a 101	41.65 a 102
BGR	Kasanova	102	84		TGW cf UTC	40.65a 100	**41.55 a 102**	41.08 a 101	42.93 a 106
BGR	Obzor	99	84		TGW cf UTC	44 a 100	**45.18 a 103**	44.78 a 102	44.85 a 102
HUN	KH TAS	105	89		TGW cf UTC	39.41a 100	**39.81 a 101**	40.8 a 103	38.09 a 97
BGR	Obzor	108	91		TGW cf UTC	42.13c 100	**43.85 ab 104**	43.18 b 102	43.9 ab 104
				12	*Mean* Min Max	*43.3* 39.4 50	***103*** **100** **109**	*102* 97 108	*103* 97 109

Comments of zRMS:

The increase of the quality parameters of winter barley yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 2% at 1 l/ha for HLW and moisture content and 7% at 1 l/ha for TGW. In the North-East EPPO zone, the increase was 1% at 1 l/ha in case of HLW, 4% at 1 l/ha in case of moisture content, 3% at 1 l/ha in case of TGW. In the South-East EPPO zone, CA3642 achieved results of 1% at 1 l/ha for HLW and 3% at 1 l/ha for moisture content and TGW. In conclusion, slight positive impact on the quality parameters of winter barley yield was visible.

Spring barley (HORVS)

As demonstrated for spring barley, application of CA3642 applied at 1.0 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In 32 efficacy trials, yield quantity (t/ha), hectolitre weight, moisture content and thousand grain weight were evaluated. The objective was to confirm the yield response of CA3642 in the presence of disease.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Yield quantity (t/ha)

Data on crop yield in the presence of disease(s) are presented in Table 3.2-467 (Maritime EPPO zone), Table 3.2-509 (North-East EPPO zone) and
Table 3.2-510 (South-East EPPO zone).

Yield quantity (t/ha) was evaluated in a total of 32 efficacy trials implemented to evaluate the effectiveness of CA3642 at 1.0 L/ha against foliar diseases in spring barley.

CA3642 applied twice at the proposed label rate of 1.0 L/ha resulted in an overall increase in yield ranging between 5-20% compared to the untreated across trials in all EPPO climatic zones, with a statistically significant difference in 18 out of 32 trials.

Crop yield following two applications of CA3642 was statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.

Maritime EPPO zone

In the Maritime EPPO zone, yield (t/ha) was assessed in 13 efficacy trials on spring barley in the presence of disease(s).

CA3642 significantly increased yield compared to the untreated control in 5 of the trials. Overall across all 13 trials, two applications of CA3642 resulted in an increase of 10 % compared to the mean yield in the untreated control.

There were no significant differences between the yield following two applications of CA3642 at 1.0 L/ha and the yield achieved by the standard reference products in all trials.

North-East EPPO zone

In the North-East EPPO zone yield (t/ha) was assessed in seven efficacy trials on spring barley in the presence of disease(s).

CA3642 significantly increased yield compared to the untreated control in three of the trials. Overall across all seven trials, two applications of CA3642 resulted in an increase of 20 % compared to the mean yield in the untreated control.

There were no significant differences between the yield following two applications of CA3642 at 1.0 L/ha and the yield achieved by the standard reference products in all trials, with one exception: in one Polish trial, CA3642 achieved a significantly higher yield compared to OSIRIS.

South-East EPPO zone

In the South-East EPPO zone yield (t/ha) was assessed in 12 efficacy trials on spring barley in the presence of disease(s).

CA3642 significantly increased yield compared to the untreated control in 10 of the trials. Overall across all 12 trials, two applications of CA3642 resulted in an increase of 5 % compared to the mean yield in the untreated control.

Compared to CA3642, CA2445 gave a significantly higher yield where applied in five trials and was comparable in one trial. CA2702 gave a significantly lower yield compared to CA3642 in 7 out of the 12 trials and was statistically comparable in the remaining 5 data sets. CA3642 was statistically comparable to the PRIAXOR standard in three of four trials where applied, and significantly lower in one trial. Compared to Bumper, CA3642 gave significantly higher yield in 3 trials and was comparable in 1 trial.

Table 3.2-508: Yield (t/ha) effect of CA3642 in efficacy trials on spring barley – Maritime EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	Summarized PTZ Products EC
						Rate		**1 l/ha 300 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.72 l/ha 198 g ai/ha**	**200 g ai/ha and 198 g PTZ /ha**
GRAIN	DEU	Planet	52	44			6.0 d 6.0	**6.5 bc 107.9**	6.4 c 105.5	6.8 ab 112.5		6.8 ab 112.5
	CZE	Grace	53	34			2.5 a 2.5	**2.7 a 106.6**	2.5 a 99.8	2.9 a 115.3		2.9 a 115.3
	DEU	Avalon	53	41			7.0 b 7.0	**7.6 a 108.1**	7.3 ab 103.6	7.7 a 109.7		7.7 a 109.7
	DEU	Planet	62	48			2.1 b 2.1	**2.7 a 127.9**	2.2 ab 102.4	2.3 ab 107.2		2.3 ab 107.2
	CZE	Kampa	69	54			5.5 a 5.5	**5.2 a 95.5**	5.7 a 105.0	5.6 a 101.7		5.6 a 101.7
	DEU	Marthe	75	57			4.1 c 4.1	**4.3 abc 107.1**	4.2 bc 103.9	4.6 abc 112.9		4.6 abc 112.9
	DNK	Propino	88	72			45.4 a 45.4	**47.5 a 104.5**	43.7 a 96.1	47.2 a 104.0		47.2 a 104.0
	GBR	LG Planet	80	54			7.3 a 100.0	**8.5 a 116.4**	7.6 a 104.1		8.2 a 112.3	8.2 a 112.3
	GBR	Planet	80	59			8.0 b 100.0	**9.1 a 113.8**	8.6 ab 107.5		9.1 a 113.8	9.1 a 113.8
	GBR	RGT Planet	87	67			6.7 a 100.0	**7.3 a 109.0**	7.3 a 109.0		7.7 a 114.9	7.7 a 114.9
	GBR	Propino	90	71			7.8 c 100.0	**8.7 ab 111.5**	8.8 ab 112.8		9.1 ab 116.7	9.1 ab 116.7
	GBR	Planet	109	82			5.8 a 100.0	**6.5 a 112.1**	6.4 a 110.3	6.6 a 113.8		6.6 a 113.8
	GBR	Propino	83	64			5.1 b 100.0	**5.5 ab 107.8**	5.6 ab 109.8		5.4 ab 105.9	5.4 ab 105.9

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	Summarized PTZ Products EC
						Rate		**1 l/ha 300 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.72 l/ha 198 g ai/ha**	**200 g ai/ha and 198 g PTZ /ha**
GRAIN	*Mean Efficacy*				8	Mean	21.6	**108.7**	103.3	109.6		109.6
						Min	2.1	**95.5**	96.1	101.7		101.7
						Max	100.0	**127.9**	110.3	115.3		115.3
					13	Mean	51.7	**109.9**	105.4			110.8
						Min	2.1	**95.5**	96.1			101.7
						Max	100.0	**127.9**	112.8			116.7
	Orthogonal comparisons				5	Mean	100.0	**111.7**	108.6		112.7	112.7
						Min	100.0	**107.8**	104.1		105.9	105.9
						Max	100.0	**116.4**	112.8		116.7	116.7

* Just one disease present

Table 3.2-509: Yield (t/ha) effect of CA3642 in efficacy trials on spring barley – North-East EPPO zone

Part Rated		Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
							Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 l/ha 130 g ai/ha**
GRAIN		LVA	Ansis	51	37			4.0 a	**5.0 a**	4.4 a	5.0 a	
								4.0	**123.7**	109.8	123.0	
		POL	Stratus	52	38			4.5 b	**4.9 ab**	4.8 ab		5.1 a
								4.5	**107.7**	107.4		112.2
		POL	Soldo	55	41			3.3 c	**4.2 ab**	3.9 b		4.6 ab
								3.3	**127.3**	119.8		139.2
		POL	Soldo	58	44			3.1 e	**4.4 ab**	4.3 ab		3.5 d
								3.1	**144.3**	141.3		112.6
		LVA	Abava	75	61			3.7 a	**3.8 a**	3.8 a	4.2 a	
								3.7	**102.9**	103.3	114.6	
		POL	Nokia	82	52			4.4 c	**5.1 ab**	4.7 abc		4.8 abc
								4.4	**117.1**	107.9		109.5
		LVA	Abava	90	73			2.1 a	**2.4 a**	2.4 a	1.5 a	
								2.1	**113.2**	113.5	73.4	

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 l/ha 130 g ai/ha**
	Mean Efficacy				7	*Mean*	*3.6*	***119.5***	*114.7*		
						Min	2.1	**102.9**	103.3		
						Max	4.5	**144.3**	141.3		
					4	*Mean*	*3.8*	***124.1***	*119.1*		*118.4*
						Min	3.1	**107.7**	107.4		109.5
						Max	4.5	**144.3**	141.3		139.2
					3	*Mean*	*3.3*	***113.3***	*108.9*	*103.7*	
						Min	2.1	**102.9**	103.3	73.4	
						Max	4.0	**123.7**	113.5	123.0	

* Just one disease present

Table 3.2-510: Yield (t/ha) effect of CA3642 in efficacy trials on spring barley – South-East EPPO zone

Part Rated	Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
GRAIN	ROU	Xandu	50	30			4.6 g	**4.8 f**	4.7 g	5.4 b				
							4.6	**103.3**	101.1	116.6				
	ROU	Aligator	52	32			4.4 h	**4.8 f**	4.6 g	5.4 b				
							4.4	**108.1**	105.5	121.8				
	ROU	Romanita	56	35			4.0 g	**4.4 e**	4.2 f	4.9 b				
							4.0	**109.4**	103.6	122.3				
	ROU	Maltea	56	35			4.3 g	**4.6 e**	4.4 f	5.1 b				
							4.3	**107.0**	103.6	119.2				
	SVK	Malz	61	43			5.0 c	**5.2 ab**	5.1 b	5.2 a		5.3 a		5.3 a

Part Rated	Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
							5.0	**104.4**	103.0	105.1		105.8		105.8
	SVK	Kangoo	63	42			6.4 f 6.4	**6.7 d** **103.5**	6.6 e 102.2	6.8 b 105.3		6.9 a 106.5		6.9 a 106.5
	SVK	Malz	65	51			4.3 d 4.3	**4.6 ab** **106.6**	4.3 d 100.7		4.4 c 102.7			
	SVK	Kangoo	65	51			4.2 d 4.2	**4.4 abc** **104.3**	4.4 c 103.7		4.4 c 103.4			
	SVK	Pribina	66	52			4.2 d 4.2	**4.4 a** **106.5**	4.4 b 104.8		4.2 c 101.9			
	SVK	Pribina	69	51			4.2 b 4.2	**4.4 a** **104.7**	4.4 a 104.7		4.3 b 101.4			
	HUN	Planet	75	48			5.0 a 5.0	**5.2 a** **103.3**	5.4 a 107.9				5.2 a 103.3	5.2 a 103.3
	HUN	Bojos	75	48			5.3 a 5.3	**5.4 a** **103.2**	5.4 a 102.3				5.7 a 108.6	5.7 a 108.6

Part Rated	Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 (PROLINE) PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
GRAIN	*Mean Efficacy*				12	Mean	4.7	**105.4**	103.6					
						Min	4.0	**103.2**	100.7					
						Max	6.4	**109.4**	107.9					
					6	Mean	4.8	**106.0**	103.2	115.0				
						Min	4.0	**103.3**	101.1	105.1				
						Max	6.4	**109.4**	105.5	122.3				
					4	Mean	5.4	**103.6**	103.9					106.0
						Min	5.0	**103.2**	102.2					103.3
						Max	6.4	**104.4**	107.9					108.6
					4	Mean	4.2	**105.5**	103.5		102.4			
						Min	4.2	**104.3**	100.7		101.4			
						Max	4.3	**106.6**	104.8		103.4			
					2	Mean	5.2	**103.2**	105.1				106.0	106.0
						Min	5.0	**103.2**	102.3				103.3	103.3
						Max	5.3	**103.3**	107.9				108.6	108.6
					2	Mean	5.7	**104.0**	102.6	105.2		106.1		
						Min	5.0	**103.5**	102.2	105.1		105.8		
						Max	6.4	**104.4**	103.0	105.3		106.5		

* Just one disease present

Comments of zRMS:

The mean yield of spring barley increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 9,9% at 1 l/ha in 13 trials. Similar effect has been noted for the products containing prothioconazole solo (10,8%). In the North-East EPPO zone, the increase was 19,5% at 1 l/ha in 7 trials. Slight inferior result was detected for CA2702 (14,7%). In the South-East EPPO zone, the increase was 3,6% at 1 l/ha in 12 trials. In conclusion, slight positive impact on the spring barley yield was observed after 2 applications of CA3642.

Yield quality

Data on crop yield quality in the presence of disease(s) are presented in Table 3.2-447 (HLW, Maritime EPPO zone), Table 3.2-512 (Moisture content, Maritime EPPO zone), Table 3.2-513 (TGW, Maritime EPPO zone), Table 3.2-487 (HLW, North-East EPPO zone), Table 3.2-515 (Moisture content, North-East EPPO zone), Table 3.2-489, (TGW, North-East EPPO zone), Table 3.2-490 (HLW, South-East EPPO zone), Table 3.2-518 (Moisture content, South-East EPPO zone) and Table 3.2-519 (TGW, South-East EPPO zone).

Yield quality in terms of hectolitre weight, moisture content and thousand grain weight was evaluated in 32 efficacy trials, implemented as a further tool to evaluate the effectiveness of CA3642 at 1.0 L/ha against foliar diseases.

Data for yield quality parameters from trials where CA3642 was applied twice at the proposed label rate of 1.0 L/ha were either statistically comparable to, or significantly higher than that of the untreated control in all cases, in all EPPO climatic zones.

Crop yield quality parameters following two applications of CA3642 were statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.

Maritime EPPO zone

In the Maritime EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 13 trials on spring barley.

There were no significant differences in HLW between CA3642 or the reference products or the untreated control in any of the trials.

The moisture content and TGW following two applications of CA3642 in spring barley was statistically comparable to the untreated, and to all reference products in all 13 trials.

North-East EPPO zone

In the North-East EPPO zone yield quality (HLW, moisture content and TGW) was assessed in seven trials on spring barley.

The moisture content following two applications of CA3642 in spring barley was statistically comparable to the untreated, and to all reference products in all 7 trials.

There were no significant differences in HLW between CA3642 or the reference products or the untreated control in any of the trials, with one exception: in one Polish trial, the HLW for CA3642 was significantly higher than that of the untreated control and reference product OSIRIS, but statistically comparable to that of CA2702.

There were no significant differences in TGW between CA3642 or the reference products or the untreated control in five of the seven the trials. In two trials (1 in Latvia and 1 in Poland), the TGW for CA3642 was significantly higher than that of the untreated control in both trials and reference product

OSIRIS in 1 trial, but statistically comparable to that of CA2702 in both trials.

South-East EPPO zone

In the South-East EPPO zone yield quality (HLW, moisture content and TGW) was assessed in 12 trials on spring barley. HLW was assessed in only 11 of the 12 trials.

The HLW following two applications of CA3642 in spring barley was statistically comparable to the untreated, and to all reference products in 7 of the 11 trials. CA3642 achieved a significantly higher HLW compared to the untreated control in 4 trials.

The moisture content following two applications of CA3642 in spring barley was statistically comparable to the untreated in all 12 trials, and to all reference products in 8 of the 12 trials. CA3642 achieved a significantly lower moisture content compared to CA2445 in 4 trials and was statistically comparable to CA2702 in all trials.

The TGW following two applications of CA3642 in spring barley was statistically comparable to the untreated in 7 of 12 trials, and significantly higher in 5 trials. TGW from applications of CA3642 was statistically comparable to all reference products in 6 of the 12 trials. CA3642 achieved a significantly lower TGW compared to CA2445 in 5 trials and was statistically higher compared to CA2702 in 4 trials.

Table 3.2-511: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on spring barley – Maritime EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	Summarized PTZ Products EC
						Rate		**1 l/ha 300 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.72 l/ha 198 g ai/ha**	**200 g ai/ha and 198 g PTZ /ha**
GRAIN	DEU	Planet	52	44			65.1 a 65.1	**64.2 a 98.7**	64.1 a 98.5	64.5 a 99.2		64.5 a 99.2
	CZE	Grace	53	34			52.4 a 52.4	**54.4 a 103.8**	51.8 a 98.8	54.5 a 104.0		54.5 a 104.0
	DEU	Avalon	53	41			65.5 a 65.5	**65.5 a 100.0**	65.5 a 99.9	64.4 a 98.3		64.4 a 98.3
	DEU	Planet	62	48			68.5 a 68.5	**68.3 a 99.7**	67.9 a 99.1	68.4 a 99.7		68.4 a 99.7
	CZE	Kampa	69	54			60.8 a 60.8	**60.8 a 100.0**	62.0 a 102.0	61.0 a 100.3		61.0 a 100.3
	DEU	Marthe	75	57			60.7 a 60.7	**59.4 a 97.9**	58.7 a 96.8	59.3 a 97.8		59.3 a 97.8
	DNK	Propino	88	72			64.9 a 64.9	**65.4 a 100.8**	64.3 a 99.0	64.3 a 99.2		64.3 a 99.2
	GBR	LG Planet	80	54			60.5 a 60.5	**61.6 a 101.8**	60.2 a 99.5		60.7 a 100.3	60.7 a 100.3
	GBR	Planet	80	59			62.6 b 62.6	**64.7 a 103.4**	63.4 ab 101.3		63.7 ab 101.8	63.7 ab 101.8
	GBR	RGT Planet	97	77			58.1 a 58.1	**60.1 a 103.4**	59 a 101.5		60.7 a 104.5	60.7 a 104.5
	GBR	Planet	109	82			57.9 a 57.9	**59.2 a 102.2**	59.2 a 102.2	58.4 a 100.9		58.4 a 100.9
	GBR	Propino	83	64			61.2 a 61.2	**60.5 a 98.9**	60.9 a 99.5		60.3 a 98.5	60.3 a 98.5
	GBR	Propino	106	87			61.1 b 61.1	**63.1 ab 103.3**	62.4 ab 102.1		64.2 a 105.1	64.2 a 105.1

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	Summarized PTZ Products EC
						Rate		1 l/ha 300 g ai/ha	0.8 l/ha 200 g ai/ha	0.8 l/ha 200 g ai/ha	0.72 l/ha 198 g ai/ha	200 g ai/ha and 198 g PTZ /ha
GRAIN		*Mean Efficacy*			8	*Mean*	*62.0*	***100.4***	*99.5*	*99.9*		*99.9*
						Min	52.4	**97.9**	96.8	97.8		97.8
						Max	68.5	**103.8**	102.2	104.0		104.0
					13	*Mean*	*61.5*	***101.1***	*100.0*			*100.7*
						Min	52.4	**97.9**	96.8			97.8
						Max	68.5	**103.8**	102.2			105.1
		Orthogonal comparisons			5	*Mean*	*60.7*	***102.1***	*100.8*		*102.0*	*102.0*
						Min	58.1	**98.9**	99.5		98.5	98.5
						Max	62.6	**103.4**	102.1		105.1	105.1

* Just one disease present

Table 3.2-512: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on spring barley – Maritime EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROLINE 275 275 g/L EC	Summarized PTZ Products EC
						Rate		1 l/ha 300 g ai/ha	0.8 l/ha 200 g ai/ha	0.8 l/ha 200 g ai/ha	0.72 l/ha 198 g ai/ha	200 g ai/ha and 198 g PTZ /ha
GRAIN	DEU	Planet	52	44			13.4 a 13.4	**13.6 a** **101.5**	13.6 a 101.6	13.6 a 101.4		13.6 a 101.4
	CZE	Grace	53	34			11.3 a 11.3	**13.1 a** **115.9**	13.1 a 115.9	12.6 a 111.3		12.6 a 111.3
	DEU	Avalon	53	41			14.7 a 14.7	**14.6 a** **99.6**	14.7 a 100.4	14.7 a 100.3		14.7 a 100.3
	DEU	Planet	62	48			12.1 a 12.1	**12.2 a** **100.2**	12.1 a 99.8	12.1 a 99.8		12.1 a 99.8
	CZE	Kampa	69	54			14.7 a 14.7	**14.2 a** **96.4**	14.3 a 97.1	14.7 a 100.1		14.7 a 100.1
	DEU	Marthe	75	57			14.6 a 14.6	**14.7 a** **101.1**	14.5 a 99.8	14.6 a 99.9		14.6 a 99.9
	DNK	Propino	88	72			15.3 a 15.3	**15.1 a** **98.6**	15.1 a 99.0	15.4 a 101.2		15.4 a 101.2
	GBR	LG Planet	80	54			14.2 a 14.2	**14.2 a** **100.0**	14.1 a 99.3		14.1 a 99.3	14.1 a 99.3
	GBR	Planet	80	59			14.5 c	**14.8 abc**	14.6 bc		15 a	15 a

								14.5	**102.1**	100.7		103.4	103.4
		GBR	RGT Planet	87	67			8.9 a 8.9	**8.4 a** **94.4**	8.3 a 93.3		8.9 a 100.0	8.9 a 100.0
		GBR	Propino	90	71			16.6 a 16.6	**16.4 a** **98.8**	16.5 a 99.4		16.3 a 98.2	16.3 a 98.2
		GBR	Planet	109	82			13.9 a 13.9	**13.8 a** **99.3**	13.9 a 100.0	13.9 a 100.0		13.9 a 100.0
		GBR	Propino	83	64			16.5 a 16.5	**16.2 a** **98.2**	17.3 a 104.8		16.8 a 101.8	16.8 a 101.8
	Mean Efficacy					8	Mean Min Max	13.7 11.3 15.3	**101.6** **96.4** **115.9**	101.7 97.1 115.9	101.8 99.8 111.3		*101.8* 99.8 111.3
						13	Mean Min Max	13.9 8.9 16.6	**100.5** **94.4** **115.9**	100.8 93.3 115.9			*101.3* 98.2 111.3
	Orthogonal comparisons					5	Mean Min Max	14.1 8.9 16.6	**98.7** **94.4** **102.1**	99.5 93.3 104.8		100.6 98.2 103.4	*100.6* 98.2 103.4

* Just one disease present

Table 3.2-513: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on spring barley – Maritime EPPO zone

Part Rated		**Country**	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PROLINE 275 275 g/L EC**	**Summarized PTZ Products EC**
							Rate		**1 l/ha 300 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**0.72 l/ha 198 g ai/ha**	**200 g ai/ha and 198 g PTZ /ha**
GRAIN		DEU	Planet	52	44			48.2 a 48.2	**48.8 a** **101.2**	47.8 a 99.0	47.3 a 98.1		47.3 a 98.1
		CZE	Grace	53	34			35.7 a 35.7	**36.9 a** **103.4**	36.2 a 101.4	38.2 a 107.1		38.2 a 107.1
		DEU	Avalon	53	41			49.2 a 49.2	**48.1 a** **97.9**	49.2 a 100.0	48.6 a 98.8		48.6 a 98.8
		DEU	Planet	62	48			49.9 ab 49.9	**50.2 ab** **100.7**	49.2 b 98.6	50.9 a 102.1		50.9 a 102.1
		CZE	Kampa	69	54			50.4 a 50.4	**55.6 a** **110.4**	52.7 a 104.6	53.8 a 106.8.3		53.8 a 106.8.3
		DEU	Marthe	75	57			43.7 a 43.7	**44.5 a** **101.7**	42.6 a 97.5	43.8 a 100.1		43.8 a 100.1
		DNK	Propino	88	72			51.5 a 51.5	**54.0 a** **104.9**	50.9 a 98.9	52.4 a 101.9		52.4 a 101.9
		GBR	LG Planet	80	54			47.0 a	**47.1 a**	44.6 a		44.3 a	44.3 a

								47.0	**100.2**	94.9		94.3	94.3
		GBR	LG Planet	87	67			39.9 a 39.9	**39.9 a** **100.0**	40.1 a 100.5		41.3 a 103.5	41.3 a 103.5
		GBR	Planet	89	68			46.5 a 100.0	**47.4 a** **101.9**	48.6 a 104.5		51.4 a 110.5	51.4 a 110.5
		GBR	Planet	114	87			43.3 a 100.0	**43.4 a** **100.2**	43.5 a 100.5	44.7 a 103.2		44.7 a 103.2
		GBR	Propino	83	64			57.5 a 100.0	**57.2 a** **99.5**	57.6 a 100.2		56.9 a 99.0	56.9 a 99.0
		GBR	Propino	106	87			45.7 a 100.0	**48.1 a** **105.3**	46.1 a 100.9		49.1 a 107.4	49.1 a 107.4
	Mean Efficacy					8	Mean Min Max	*53.6* 35.7 100.0	***102.6*** **97.9** **110.4**	*100.1* 97.5 104.6	*102.3* 98.1 107.1		*102.3* *98.1* 107.1
						13	Mean Min Max	*62.7* 35.7 100.0	***102.1*** **97.9** **110.4**	*100.1* 94.9 104.6			*102.5* 94.3 110.5
	Orthogonal comparisons					5	Mean Min Max	*77.4* 39.9 100.0	***101.4*** **99.5** **105.3**	*100.2* 94.9 104.5		*102.9* 94.3 110.5	*102.9* 94.3 110.5

* Just one disease present

Table 3.2-514: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on spring barley – North-East EPPO zone

Part Rated		Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
							Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	2 l/ha 130 g ai/ha
GRAIN		LVA	Ansis	51	37			65.7 a 65.7	**66.8 a** **101.6**	65.9 a 100.3	67.4 a 102.6	
		POL	Stratus	52	38			64.3 a 64.3	**63.5 a** **98.7**	65.3 a 101.5		66.4 a 103.2
		POL	Soldo	66	52			66.6 a 66.6	**68.6 a** **102.9**	68.0 a 102.1		67.3 a 101.1
		POL	Soldo	72	58			61.8 c 61.8	**66.9 a** **108.2**	64.5 abc 104.3		63.4 bc 102.5
		LVA	Abava	75	61			74.3 a 74.3	**78.6 a** **105.8**	76.5 a 103.0	73.3 a 98.6	
		LVA	Abava	90	73			61.9 a	**63.3 a**	63.9 a	56.7 a	

									UTC	CA3642	CA2702	CA2445	OSIRIS 65 EC
									61.9	**102.1**	103.1	91.5	
		POL	Nokia	96	66				66.9 a 66.9	**67.3 a** **100.5**	67.3 a 100.5		67.9 a 101.4
	Mean Efficacy					7	*Mean* Min Max		*66.0* 61.8 74.3	***102.8*** **98.7** **108.2**	*102.1* 100.3 104.3		
						4	*Mean* Min Max		*64.9* 61.8 66.9	***102.6*** **98.7** **108.2**	*102.1* 100.5 104.3		*102.0* 101.1 103.2
						3	*Mean* Min Max		*67.3* 61.9 74.3	***103.2*** **101.6** **105.8**	*102.1* 100.3 103.1	*97.6* 91.5 102.6	

* Just one disease present

Table 3.2-515: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on spring barley – North-East EPPO zone

Part Rated		Country	Variety	DA-A	DA-B	No of trials	Name Conc Type / Rate	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC / 1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	CA2702 AZX 250g/L SC / 0.8 L/ha 200 g AZX/ha	CA2445 PTZ 250 g/L EC / 0.8 L/ha 200 g PTZ/ha	OSIRIS 65 EC 65 g/L EC / 2 l/ha 130 g ai/ha
GRAIN		LVA	Ansis	51	37			13.3 a 13.3	**13.7 a** **102.6**	14.6 a 109.5	13.8 a 103.8	
		POL	Stratus	52	38			14.7 a 14.7	**14.9 a** **101.4**	14.6 a 99.3		14.9 a 101.6
		POL	Soldo	55	41			7.2 a 7.2	**7.6 a** **104.8**	7.9 a 108.6		7.8 a 107.6
		POL	Soldo	58	44			12.9 a 12.9	**13.2 a** **102.7**	12.7 a 99.1		11.9 a 92.5
		LVA	Abava	75	61			13.9 a 13.9	**13.9 a** **99.7**	13.8 a 98.8	13.9 a 99.9	
		POL	Nokia	82	52			10.6 a 10.6	**10.2 a** **96.2**	10.6 a 100.5		11.0 a 103.8
		LVA	Abava	90	73			17.1 a 17.1	**18.5 a** **108.2**	17.8 a 104.1	16.9 a 98.7	
	Mean Efficacy					7	*Mean* Min	*12.8* 7.2	***102.2*** **96.2**	*102.8* 98.8		

			Max	17.1	**108.2**	109.5		
		4	*Mean*	*11.3*	***101.3***	*101.9*		*101.4*
			Min	7.2	**96.2**	99.1		92.5
			Max	14.7	**104.8**	108.6		107.6
		3	*Mean*	*14.8*	***103.5***	*104.1*	*100.8*	
			Min	13.3	**99.7**	98.8	98.7	
			Max	17.1	**108.2**	109.5	103.8	

* Just one disease present

Table 3.2-516: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on spring barley – North-East EPPO zone

Part Rated		Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	OSIRIS 65 EC 65 g/L EC
							Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**2 l/ha 130 g ai/ha**
GRAIN		LVA	Abava	101	84			41.6 a 41.6	**42.2 a 101.6**	38.6 a 92.8	41.6 a 100.1	
		LVA	Abava	110	96			51.8 a 51.8	**52.6 a 101.6**	52.1 a 100.5	52.0 a 100.3	
		POL	Stratus	54	40			41.0 a 41.0	**43.7 a 106.7**	42.7 a 104.2		43.8 a 106.9
		POL	Soldo	66	52			47.8 a 47.8	**51.6 a 107.9**	51.0 a 106.7		48.8 a 102.1
		LVA	Ansis	70	56			43.8 b 43.8	**50.2 a 114.7**	47.5 a 108.5	47.5 a 108.5	
		POL	Soldo	72	58			40.0 c 40.0	**48.3 a 120.9**	47.7 a 119.3		43.5 b 108.9
		POL	Nokia	96	66			46.2 a 46.2	**47.7 a 103.3**	47.8 a 103.5		46.8 a 101.3
	Mean Efficacy					7	*Mean*	*44.6*	***108.1***	*105.1*		
							Min	40.0	**101.6**	92.8		
							Max	51.8	**120.9**	119.3		
						4	*Mean*	*43.7*	***109.7***	*108.5*		*104.8*
							Min	40.0	**103.3**	103.5		101.3
							Max	47.8	**120.9**	119.3		108.9

		3	*Mean* Min Max	*45.7* 41.6 51.8	***105.9*** **101.6** **114.7**	*100.6* 92.8 108.5	*103.0* 100.1 108.5	

* Just one disease present

Table 3.2-517: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on spring barley – South-East EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAXOR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
GRAIN	ROU	Xandu	50	30			55.2 g 55.2	**56.7 f** **102.7**	55.1 g 99.8	60.2 b 109.1				
	ROU	Aligator	52	32			54.3 i 54.3	**56.6 g** **104.4**	55.4 h 102.1	60.3 b 111.1				
	ROU	Romanita	56	35			53.3 i 53.3	**55.5 g** **104.3**	54.6 h 102.5	59.2 b 111.2				
	ROU	Maltea	56	35			54.4 i 54.4	**56.6 g** **104.1**	55.7 h 102.3	60.2 b 110.6				
	SVK	Malz	61	43			73.4 b 73.4	**73.4 ab** **100.0**	73.4 ab 100.0	73.5 ab 100.1		73.5 a 100.2		73.5 a 100.2
	SVK	Kangoo	64	43			76.8 a 76.8	**76.8 a** **100.0**	76.8 a 100.0	76.8 a 100.0		76.9 a 100.1		76.9 a 100.1
	SVK	Malz	66	52			69.0 a 69.0	**69.1 a** **100.1**	69.1 a 100.1		69.1 a 100.1			
	SVK	Pribina	69	55			67.8 a 67.8	**67.9 a** **100.1**	67.8 a 100.1		67.8 a 100.0			
	SVK	Pribina	70	52			67.9 a 67.9	**68.0 a** **100.1**	67.9 a 100.1		67.9 a 100.1			
	HUN	Planet	81	54			58.2 a 58.2	**59.5 a** **102.1**	60.2 a 103.3				58.8 a 101.1	58.8 a 101.1
	HUN	Bojos	81	54			66.3 a 66.3	**66.4 a** **100.2**	66.0 a 99.7				66.9 a 100.9	66.9 a 100.9
	Mean Efficacy				11	Mean Min Max	63.3 53.3 76.8	**101.6** **100.0** **104.4**	100.9 99.7 103.3					

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAXOR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
					6	Mean Min Max	61.2 53.3 76.8	**102.6** **100.0** **104.4**	101.1 99.8 102.5	107.0 100.0 111.2				
					4	Mean Min Max	68.7 58.2 76.8	**100.6** **100.0** **102.1**	100.8 99.7 103.3					100.6 100.1 101.1
GRAIN					3	Mean Min Max	68.2 67.8 69.0	**100.1** **100.1** **100.1**	100.1 100.1 100.1		100.1 100.0 100.1			
					2	Mean Min Max	62.2 58.2 66.3	**101.1** **100.2** **102.1**	101.5 99.7 103.3				101.0 100.9 101.1	101.0 100.9 101.1
					2	Mean Min Max	75.1 73.4 76.8	**100.0** **100.0** **100.0**	100.0 100.0 100.0	100.1 100.0 100.1		100.2 100.1 100.2		

* Just one disease present

Table 3.2-518: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on spring barley – South-East EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
GRAIN	ROU	Xandu	50	30			14.2 bc 14.2	14.1 cd 99.3	14.1 d 99.1	14.4 a 101.2				

Part Rated	Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
	ROU	Aligator	52	32			14.0 c 14.0	14.1 bc 100.5	14.1 bc 100.5	14.3 a 102.5				
	ROU	Romanita	56	35			14.0 d 14.0	14.0 cd 100.6	14.0 d 100.0	14.4 a 102.9				
	ROU	Maltea	56	35			14.2 b 14.2	14.3 b 100.4	14.2 b 100.0	14.5 a 101.8				
	SVK	Malz	61	43			12.1 a 12.1	12.2 a 100.8	12.2 a 100.4	12.2 a 100.8		12.3 a 101.0		12.3 a 101.0
	SVK	Kangoo	63	42			13.5a 13.5	13.5 a 100.4	13.5 a 100.2	13.5 a 100.2		13.5 a 100.6		13.5 a 100.6
	SVK	Malz	65	51			11.7 a 11.7	11.7 a 100.4	11.7 a 100.7		11.7 a 100.4			
	SVK	Kangoo	65	51			11.8 a 11.8	11.8 a 100.4	11.8 a 100.7		11.8 a 100.3			
	SVK	Pribina	66	52			11.2 a 11.2	11.2 a 100.3	11.2 a 100.7		11.2 a 100.7			
	SVK	Pribina	69	51			11.5 a 11.5	11.6 a 100.7	11.5 a 100.3		11.6 a 100.4			
	HUN	Planet	75	48			11.4 a 11.4	11.5 a 101.1	11.7 a 102.9				11.4 a 100.7	11.4 a 100.7
	HUN	Bojos	75	48			12.1 a 12.1	12.2 a 100.4	12.1 a 100.2				12.2 a 101.1	12.2 a 101.1
GRAIN	*Mean Efficacy*				12	Mean Min Max	12.6 11.2 14.2	**100.4** **99.3** **101.1**	100.5 99.1 102.9					
					6	Mean Min Max	13.7 12.1 14.2	**100.3** **99.3** **100.8**	100.0 99.1 100.5	101.6 100.2 102.9				
					4	Mean	12.3	**100.7**	100.9					100.8

Part Rated	Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.5 l/ha 125 g ai/ha	1.5 l/ha 337 g ai/ha	1.5 l/ha 338 g ai/ha	1.5 l/ha 337 or 338 g ai/ha
						Min Max	11.4 13.5	**100.4** **101.1**	100.2 102.9					100.6 101.1
					4	Mean Min Max	11.5 11.2 11.8	**100.5** **100.3** **100.7**	100.6 100.3 100.7		100.5 100.3 100.7			
					2	Mean Min Max	11.7 11.4 12.1	**100.8** **100.4** **101.1**	101.6 100.2 102.9				100.9 100.7 101.1	100.9 100.7 101.1
					2	Mean Min Max	12.8 12.1 13.5	**100.6** **100.4** **100.8**	100.3 100.2 100.4	100.5 100.2 100.8		100.8 100.6 101.0		

* Just one disease present

Table 3.2-519: Yield quality (Thousand grain weight – g) effect of CA3642 in efficacy trials on spring barley – South-East EPPO zone

Part Rat-ed		Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAX-OR 225 g/L EC	Summarized Priaxor 225 g/L EC
							Rate		1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha	0.8 L/ha 200 g AZX/ha	0.8 L/ha 200 g PTZ/ha	0.5 l/ha 125 g ai/ha	1.5 l/ha 337 g ai/ha	1.5 l/ha 338 g ai/ha	1.5 l/ha 337 or 338 g ai/ha
GRAIN		ROU	Xandu	50	30			41.1 i 41.1	**43.8 g** **106.6**	43.2 h 105.2	47.1 b 114.8				
		ROU	Aligator	52	32			40.2 h 40.2	**43.9 f** **109.2**	43.1 g 107.4	46.7 b 116.3				

Part Rated	**Country**	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC**	**CA2702 AZX 250g/L SC**	**CA2445 PTZ 250 g/L EC**	**BUMPER 25 EC 250 g/L EC**	**Priaxor 225 g/L EC**	**PRIAXOR 225 g/L EC**	**Summarized Priaxor 225 g/L EC**
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
	ROU	Romanita	56	35			39.8 h 39.8	**42.8 f** **107.6**	42.1 g 105.8	45.8 b 115.0				
	ROU	Maltea	56	35			40.7 i 40.7	**41.9 g** **103.0**	41.3 h 101.6	46.8 b 115.0				
	SVK	Malz	61	43			44.8 d 44.8	**45.4 b** **101.4**	45.2 bc 100.9	45.8 a 102.2		45.9 a 102.5		45.9 a 102.5
	SVK	Kangoo	64	43			33.6 c 33.6	**33.7 bc** **100.5**	33.6 c 100.2	34.0 b 101.3		34.5 a 102.7		34.5 a 102.7
	SVK	Malz	65	51			43.0 a 43.0	**43.1 a** **100.3**	43.1 a 100.2		43.1 a 100.1			
	SVK	Kangoo	66	52			43.5 a 43.5	**43.7 a** **100.5**	43.5 a 100.1		43.6 a 100.2			
	SVK	Pribina	69	55			42.1 a 42.1	**42.1 a** **100.1**	42.2 a 100.4		42.1 a 100.1			
	SVK	Pribina	70	52			42.5 a 42.5	**42.6 a** **100.2**	42.6 a 100.3		42.5 a 100.2			
	HUN	Planet	81	54			41.8 a 41.8	**42.9 a** **102.5**	44.0 a 105.1				42.8 a 102.3	42.8 a 102.3
	HUN	Bojos	81	54			44.3 a 44.3	**44.4 a** **100.2**	44.3 a 99.9				43.8 a 98.7	43.8 a 98.7
	Mean Efficacy				12	Mean Min Max	41.4 33.6 44.8	**102.7** **100.1** **109.2**	102.2 99.9 107.4					
					6	Mean Min Max	40.0 33.6 44.8	**104.7** **100.5** **109.2**	103.5 100.2 107.4	110.8 101.3 116.3				
					4	Mean Min	41.1 33.6	**101.2** **100.2**	101.5 99.9					101.6 98.7

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 (150 g/L AZX + 150 g/L PTZ) 300 g/L SC	CA2702 AZX 250g/L SC	CA2445 PTZ 250 g/L EC	BUMPER 25 EC 250 g/L EC	Priaxor 225 g/L EC	PRIAXOR 225 g/L EC	Summarized Priaxor 225 g/L EC
						Rate		**1.0 L/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.8 L/ha 200 g AZX/ha**	**0.8 L/ha 200 g PTZ/ha**	**0.5 l/ha 125 g ai/ha**	**1.5 l/ha 337 g ai/ha**	**1.5 l/ha 338 g ai/ha**	**1.5 l/ha 337 or 338 g ai/ha**
						Max	44.8	**102.5**	105.1					102.7
					4	Mean	42.8	**100.3**	100.2		100.1			
						Min	42.1	**100.1**	100.1		100.1			
						Max	43.5	**100.5**	100.4		100.2			
GRAIN					2	Mean	43.1	**101.4**	102.5				100.5	100.5
						Min	41.8	**100.2**	99.9				98.7	98.7
						Max	44.3	**102.5**	105.1				102.3	102.3
					2	Mean	39.2	**101.0**	100.5	101.7		102.6		
						Min	33.6	**100.5**	100.2	101.3		102.5		
						Max	44.8	**101.4**	100.9	102.2		102.7		

* Just one disease present

Comments of zRMS:

The increase of the quality parameters of spring barley yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 1,1% at 1 l/ha for HLW, 0,5% for moisture content and 2,1% for TGW. In the North-East EPPO zone, the increase was 2,8% in case of HLW, 2,2% in case of moisture content, 8,1% in case of TGW. In the South-East EPPO zone, CA3642 achieved results of 1,6% for HLW, 0,4% for moisture content and 2,7% for TGW. In conclusion, slight positive impact on the quality parameters of spring barley yield was visible.

Oilseed rape (BRSNW)

As demonstrated for winter oilseed rape, application of CA3642 applied at 1.0-1.2 L/ha reduced the infection of leaf with several diseases. Therefore, it allows preserving the quality of the crop and ensuring sufficient growth and ripening until harvest.
In 43 efficacy trials, yield quantity (t/ha) was evaluated, with the further determination of quality parameters hectolitre weight, moisture content, thousand grain weight and oil content in some of these trials. The objective was to confirm the yield response of CA3642 in the presence of disease.

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252.

Yield quantity (t/ha)

Data on crop yield in the presence of disease(s) are presented in Table 3.2-467 (Maritime EPPO zone), Table 3.2-509 (North-East EPPO zone) and
Table 3.2-510 (South-East EPPO zone).

Yield quantity (t/ha) was evaluated in a total of 43 efficacy trials implemented to evaluate the effectiveness of CA3642 at 1.0-1.2 L/ha against target diseases in winter oilseed rape.

CA3642 applied twice at the proposed label rate of 1.0 L/ha or 1.2 L/ha resulted in an overall increase in yield ranging between 5-25% compared to the untreated across trials in all EPPO climatic zones, with a statistically significant difference in 21 out of 43 trials for both rates and 22 trials for the rate of 1.2 L/ha.

Crop yield following two applications of CA3642 was statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.

Maritime EPPO zone

In the Maritime EPPO zone, yield (t/ha) was assessed in 13 efficacy trials on winter oilseed rape in the presence of disease(s).

CA3642 significantly increased yield compared to the untreated control in 5 of the trials.
Overall across 9 trials where CA3642 was applied twice in the spring, there was a 14 % increase compared to the mean yield in the untreated control from both dose rates (1.0 L and 1.2 L/ha).
Across 4 trials where CA3642 was applied once in the autumn and once again in the spring, there was an 8 % increase for both dose rates.

There were no significant differences between the yield following two applications of CA3642 at 1.0-1.2 L/ha and the yield achieved by the standard reference products in all trials, with the exception that CA3642 applied at 1.0 L/ha gave a significantly higher yield compared to CA2445 in 1 trial.

North-East EPPO zone

In the North-East EPPO zone yield (t/ha) was assessed in 12 efficacy trials on winter oilseed rape in the presence of disease(s).

CA3642 significantly increased yield compared to the untreated control in 4 of the trials for both rates and in 5 trials for the 1.2 L/ha rate.
Overall across 10 trials where CA3642 was applied twice in the spring, there was a 14 % and 5 % increase compared to the mean yield in the untreated control for the 1.0 L and 1.2 L/ha dose rates, respectively.
Across 2 trials where CA3642 was applied once in the autumn and once again in the spring, there was a 7 % and 24 % increase for the 1.0 L and 1.2 L/ha dose rates, respectively.

There were no significant differences between the yield following two applications of CA3642 at 1.0-1.2 L/ha and the yield achieved by the standard reference products in all trials.

South-East EPPO zone

In the South-East EPPO zone yield (t/ha) was assessed in 18 efficacy trials on winter oilseed rape in the presence of disease(s).

CA3642 significantly increased yield compared to the untreated control in 12 of the trials.
Overall across 11 trials where CA3642 was applied twice in the spring, there was a 24 % and 25 % increase compared to the mean yield in the untreated control for the 1.0 L and 1.2 L/ha dose rates, respectively.
Across 7 trials where CA3642 was applied once in the autumn and once again in the spring, there was an 11 % and 23 % increase for the 1.0 L and 1.2 L/ha dose rates, respectively.

Two applications of CA3642 at 1.0-1.2 L/ha achieved statistically comparable yield to that of the standard reference products in 9 trials. Both rates of CA3642 resulted in a significantly higher yield compared to CA2702 in 7 trials, and the higher rate of 1.2 L/ha resulted in a significantly higher yield than CA2702 in 1 additional trial. Compared to CA2445, where applied in 15 trials, both rates of CA3642 resulted in a statistically comparable yield in 11 trials, a significantly higher yield than CA2445 in 1 trial and a significantly lower yield in 2 trials, and in 1 trial the higher rate was comparable to CA2445 while the lower rate was significantly lower in terms of yield.

Table 3.2-520: Yield (t/ha) effect of CA3642 in efficacy trials on winter oilseed rape – Maritime EPPO zone

Part Rated	Country	Crop Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250 g/L EC	BISTRO 90 g/L EC
						Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.6 l/ha 54 g ai/ha
GRAIN	CZE	DK Exception	98	77			2.30 b 2.3	**2.70 a 117.4**	**2.67 a 116.1**	2.68 a 116.5	2.75 a 119.6		2.75 a 119.6	
GRAIN	CZE	Recordie	95	69			3.53 b 3.5	**3.78 a 107.1**	**3.71 a 105.1**	3.74 a 105.9	3.79 a 107.4		3.79 a 107.4	
GRAIN	CZE	KWS DIGGER	94	67			2.36 ab 2.4	**2.37 ab 100.4**	**2.60 a 110.2**	2.09 b 88.6	2.40 ab 101.7		2.40 ab 101.7	
GRAIN	CZE	Pioneer PT271	99	72			2.16 ab 2.2	**2.67 a 123.6**	**2.31 ab 106.9**	2.29 ab 106.0	2.16 ab 100.0		2.16 ab 100.0	
GRAIN	DEU	Advocat LG	100	72			3.09 a 3.1	**3.18 a 102.9**	**3.20 a 103.6**	3.16 a 102.3	3.27 a 105.8		3.27 a 105.8	
GRAIN	CZE	KWS DIGGER	102	78			2.79 a 2.8	**2.85 a 102.2**	**3.15 a 112.9**	2.83 a 101.4	2.91 a 104.3		2.91 a 104.3	
GRAIN	DEU	Architect	122	81			3.62 b 3.6	**4.14 a 114.4**	**3.94 a 108.8**	4.05 a 111.9		4.02 a 111.0	4.02 a 111.0	
GRAIN	DEU	Hattrick	117	84			3.18 d 3.2	**4.80 bc 150.9**	**4.84 bc 152.2**	4.71 bc 148.1	4.76 bc 149.7		4.76 bc 149.7	
GRAIN	FRA	Nikita	264	99			2.33 b 2.3	**2.48 ab 106.4**	**2.55 ab 109.4**	2.35 b 100.9	2.41 b 103.4		2.41 b 103.4	2.48 ab 106.4
GRAIN	GBR	Flamingo	194	103			4.34 a 4.3	**4.59 a 105.8**	**4.50 a 103.7**	4.23 a 97.5	4.44 a 102.3		4.44 a 102.3	

Part Rated	**Country**	**Crop Variety**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PECARI 250 EC 250 g/L EC**	**Summarized PTZ products 250 g/L EC**	**BISTRO 90 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.6 l/ha** **54 g ai/ha**
GRAIN	FRA	Architect	250	104			3.70 b 3.7	**4.21 a** **113.8**	**4.22 a** **114.1**	3.93 ab 106.2	4.12 ab 111.4		4.12 ab 111.4	
GRAMAR	FRA	NIKITA	246	108			4.29 a 4.3	**4.52 a** **105.4**	**4.53 a** **105.6**	4.44 a 103.5	4.38 a 102.1		4.38 a 102.1	4.18 a 97.4
GRAIN	CZE	DK Expression	131	109			4.02 b 4.0	**4.24 ab** **105.5**	**4.27 ab** **106.2**	4.22 ab 105.0	4.28 ab 106.5		4.28 ab 106.5	
					13	*Mean* Min Max	*3.2* 2.2 4.3	***112.0*** **100.4** **150.9**	***111.9*** **103.6** **152.2**	*107.2* 88.6 148.1			*109.6* 100.0 149.7	
					9***	*Mean* Min Max	*3.0* 2.2 4.0	***113.8*** **100.4** **150.9**	***113.6*** **103.6** **152.2**	*109.5* 88.6 148.1			*111.8* 100.0 149.7	
					8***	*Mean* Min Max	*2.9* 2.2 4.0	***113.7*** **100.4** **150.9**	***114.1*** **103.6** **152.2**	*109.2* 88.6 148.1	*111.9* 100.0 149.7		*111.9* 100.0 149.7	
					1***	*Mean*	*3.6*	***114.4***	***108.8***	*111.9*		*111.0*	*111.0*	
					4**	*Mean* Min Max	*3.7* 2.3 4.3	***107.8*** **105.4** **113.8**	***108.2*** **103.7** **114.1**	*102.0* 97.5 106.2	*104.8* 102.1 111.4		*104.8* 102.1 111.4	
					2**	*Mean* Min Max	*3.3* 2.3 4.3	***105.9*** **105.4** **106.4**	***107.5*** **105.6** **109.4**	*102.2* 100.9 103.5	*102.8* 102.1 103.4		*102.8* 102.1 103.4	*101.9* 97.4 106.4

**In Trials EU20-014-01, -02, -05 and -20, the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding Trials EU20-014-01, -02, -05 and -20

Table 3.2-521: Yield (t/ha) effect of CA3642 in efficacy trials on winter oilseed rape – North-East EPPO zone

Part Rated	Coun-try	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PRO-PULSE 250 g/L SE	ORIUS EX-TRA 250 g/L EW	CARAMBA 60 SL 60 g/L SL	YAMATO 303 SE 303 g/L SE	PLEXEO 60 EC 60 g/L EC
						Rate		**1.2 l/ha 180 g AZX/ ha + 180 g PTZ/ha**	**1.0 l/ha 150 g AZX/ ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.8 l/ha 200 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 60 g ai/ha**	**1.5 l/ha 455 g ai/ha**	**1 l/ha 60 g ai/ha**
GRAIN	POL	Sherpa	95	51			3.0 b 3.0	**3.5 a 118.2**	**3.7 a 122.3**	3.4 ab 114.4				3.5 ab 115.8		
GRAIN	POL	Acapulco	120	74			2.7 a 2.7	**2.4 a 91.0**	**3.0 a 110.8**	2.8 a 106.4				2.9 a 110.5		
GRAIN	POL	Monolit	97	75			1.9 a 1.9	**2.4 a 123.2**	**2.5 a 132.4**	2.2 a 117.2				2.1 a 110.8		
GRAIN	LVA	DK Imistar	81	60			2.8 a 2.8	**2.8 a 101.0**	**2.8 a 99.0**	2.8 a 98.9		2.9 a 103.8				
GRAIN	POL	Umberto	286	76			2.6 c-f 2.6	**3.2 a 126.5**	**2.6 b-f 102.6**	2.7 a-e 106.3	3.0 abc 117.5		3.2 abc 123.4			
GRAIN	POL	Mercedes	292	85			1.3 a 1.3	**1.6 a 120.8**	**1.4 a 110.5**	1.5 a 113.0	1.8 a 134.0		1.7 a 132.7			
GRAIN	POL	Exotter	107	86			2.1 c 2.1	**2.9 a 136.8**	**2.7 ab 128.5**	2.6 ab 122.1	2.8 a 135.2			2.7 ab 127.2		
GRAIN	POL	Panama	112	90			4.0 a 4.0	**4.1 a 102.0**	**4.1 a 101.4**	4.2 a 102.9	4.1 a 102.3			4.0 a 99.8		
GRAIN	POL	Umberto	106	70			2.4 a 2.4	**2.4 a 3.0**	**2.0 a 82.6**	2.6 a 108.5	2.4 a 98.6			2.4 a 100.8		
GRAI	POL	AB-	106	81			3.7 a	**4.2 a**	**4.0 a**	4.1 a					3.8 a	

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**ORIUS EX-TRA 250 g/L EW**	**CARAMBA 60 SL 60 g/L SL**	**YAMATO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ ha + 180 g PTZ/ha**	**1.0 l/ha** **150 g AZX/ ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.8 l/ha** **200 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **60 g ai/ha**	**1.5 l/ha** **455 g ai/ha**	**1 l/ha** **60 g ai/ha**
N		SOLUT					3.7	**112.0**	**107.8**	110.0					102.5	
GRAIN	POL	Feliciano	111	77			2.7 c 2.7	**3.4 ab** **123.7**	**3.2 ab** **119.1**	3.4 ab 124.9					3.2 ab 118.9	
GRAIN	POL	Monolit	96	63			2.3 f 2.3	**3.2 bcd** **137.9**	**3.1 cd** **132.8**	3.2 bcd 137.2						3.1 cd 131.6

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**ORIUS EX-TRA 250 g/L EW**	**CARAMBA 60 SL 60 g/L SL**	**YAMATO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.8 l/ha** **200 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **60 g ai/ha**	**1.5 l/ha** **455 g ai/ha**	**1 l/ha** **60 g ai/ha**
Mean					12	*Mean*	*2.6*	***108.0***	***112.5***	*113.5*						
						Min	1.3	**3.0**	**82.6**	98.9						
						Max	4.0	**137.9**	**132.8**	137.2						
					10***	*Mean*	*2.8*	***104.9***	***113.7***	*114.2*						
						Min	1.9	**3.0**	**82.6**	98.9						
						Max	4.0	**137.9**	**132.8**	137.2						
					3***	*Mean*	*2.9*	***80.6***	***104.2***	*111.2*	*112.1*					
						Min	2.1	**3.0**	**82.6**	102.9	98.6					
						Max	4.0	**136.8**	**128.5**	122.1	135.2					
					6***	*Mean*	*2.7*	***95.7***	***113.0***	*111.9*	*112.1*			*110.8*		
						Min	1.9	**3.0**	**82.6**	102.9	98.6			99.8		
						Max	4.0	**136.8**	**132.4**	122.1	135.2			127.2		
					2***	*Mean*	*3.2*	***117.8***	***113.4***	*117.4*					*110.7*	
						Min	2.7	**112.0**	**107.8**	110.0					102.5	
						Max	3.7	**123.7**	**119.1**	124.9					118.9	
					1***	*Mean*	*2.8*	***101.0***	***99.0***	*98.9*		*103.8*				
					1***	*Mean*	*2.3*	***137.9***	***132.8***	*137.2*						*131.6*
					2**	*Mean*	*1.9*	***123.6***	***106.6***	*109.7*	*125.7*		*128.0*			
						Min	1.3	**120.8**	**102.6**	106.3	117.5		123.4			
						Max	2.6	**126.5**	**110.5**	113.0	134.0		132.7			

**In Trials EU20-014-34 and -35, the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding Trials EU20-014-34 and -35

Table 3.2-522: Yield (t/ha) effect of CA3642 in efficacy trials on winter oilseed rape – South-East EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PROPULSE 250 g/L SE	ORIUS 250 g/L SE	TILMOR 240 g/L EC
						Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	1 l/ha 250 g ai/ha	1 l/ha 250 g ai/ha	1.2 l/ha 288 g ai/ha
GRAIN	HUN	Mécses	89	64			1.4 c 1.4	1.7 ab 125.6	1.8 ab 130.8	2.0 a 147.6		1.8 ab 132.2		
GRAIN	HUN	Hybrirock	86	62			1.6 a 1.6	1.7 a 107.3	1.7 a 112.0	1.8 a 113.9		1.7 a 110.5		
GRAIN	ROU	PT225	97	59			2.3 b 2.3	2.6 a 111.1	2.6 a 111.7	2.5 a 108.9	2.6 a 111.7			
GRAIN	ROU	DK EXTRON	99	64			2.2 d 2.2	3.1 ab 141.7	3.1 ab 141.8	2.8 c 128.1	3.1 ab 139.2			
GRAIN	ROU	MAZARI CS	109	71			2.3 c 2.3	3.1 a 139.7	3.1 a 139.0	2.8 b 122.2	3.2 a 140.1			
GRAIN	SVK	Alicante	97	76			3.5 c 3.5	3.7 a 106.3	3.7 ab 104.9	3.6 b 103.4			3.6 b 103.2	
GRAIN	ROU	VISBY	98	63			3.0 b 3.0	3.9 a 131.0	3.9 a 131.9	3.9 a 131.2	3.9 a 132.0			
GRAIN	ROU	HYBRIROCK	105	70			2.2 d 2.2	3.1 a 142.2	3.1 ab 140.0	2.8 c 126.7	3.1 ab 141.1			
GRAIN	HUN	Harry	235	80			1.3 a 1.3	1.5 a 120.9	1.5 a 117.5	1.7 a 131.6	1.7 a 132.2			1.8 a 137.8
GRAIN	HUN	Hybrirock	264	79			2.3 a 2.3	2.2 a 95.4	1.9 a 85.0	1.9 a 83.3	2.1 a 91.9			1.8 a 78.0
GRAIN	HUN	Sherpa	277	92			2.6 a 2.6	3.1 a 122.4	2.9 a 113.1	2.7 a 105.6	3.1 a 119.6			2.7 a 104.8
GRAIN	HUN	Hybrirock	280	85			1.5 a 1.5	1.7 a 112.3	1.7 a 113.5	1.7 a 109.5	1.7 a 110.4			1.3 a 86.8
GRAIN	HUN	Mécses	267	70			0.4 a 0.4	0.7 a 169.7	0.4 a 106.1	0.5 a 111.5	0.6 a 150.5			0.6 a 138.7
GRAIN	ROU	Factor KWS	242	57			2.2 g 2.2	2.8 a 128.5	2.7 b 124.6	2.6 c 120.1	2.7 c 122.0			
GRAIN	ROU	Hybrirock	242	57			2.5 f 2.5	2.8 e 114.6	2.8 e 113.8	3.0 c 120.3	3.0 b 123.2			

Part Rated	**Country**	**Variety**	**DA-A**	**DA-B**	**No. of trials**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PROPULSE 250 g/L SE**	**ORIUS 250 g/L SE**	**TILMOR 240 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1.0 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1.2 l/ha** **288 g ai/ha**
GRAIN	ROU	ES DANUBE	74	53			3.1 f 3.1	3.8 ab 121.6	3.6 d 117.0	3.5 e 112.7	3.8 ab 121.4			
GRAIN	ROU	COMPASS	73	52			2.6 e 2.6	3.2 b 124.9	3.1 c 120.8	3.0 d 115.7	3.2 b 124.6			
GRAIN	ROU	TRIANGLE	74	53			3.1 h 3.1	3.8 c 124.5	3.6 e 118.5	3.5 g 113.7	3.9 b 126.8			
Mean					18	*Mean* Min Max	*2.2* 0.4 3.5	*124.4* 95.4 169.7	*119.0* 85.0 141.8	*117.0* 83.3 147.6				
					11***	*Mean* Min Max	*2.5* 1.4 3.5	*125.1* 106.3 142.2	*124.4* 104.9 141.8	*120.4* 103.4 147.6				
					8***	*Mean* Min Max	*2.6* 2.2 3.1	*129.6* 111.1 142.2	*127.6* 111.7 141.8	*119.9* 108.9 131.2	*129.6* 111.7 141.1			
					2***	*Mean* Min Max	*1.5* 1.4 1.6	*116.4* 107.3 125.6	*121.4* 112.0 130.8	*130.8* 113.9 147.6		*121.3* 110.5 132.2		
					1***	*Mean* Min Max	*3.5*	*106.3*	*104.9*	*103.4*			*103.2*	
					7**	*Mean* Min Max	*1.8* 0.4 2.6	*123.4* 95.4 169.7	*110.5* 85.0 124.6	*111.7* 83.3 131.6	*121.4* 91.9 150.5			
					5**	*Mean* Min Max	*1.6* 0.4 2.6	*124.1* 95.4 169.7	*107.0* 85.0 117.5	*108.3* 83.3 131.6	*120.9* 91.9 150.5			*109.2* 78.0 138.7

**In Trials, the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding Trials

Comments of zRMS:

The mean yield of winter oilseed rape increased after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 12% at 1,2 l/ha and 11,9% at 1 l/ha in 13 trials. In the North-East EPPO zone, the increase was 8% at 1,2 l/ha and 12,5% at 1 l/ha in 12 trials. In the South-East EPPO zone, the increase was 24,4% at 1,2 l/ha and 19% at 1 l/ha in 18 trials. In conclusion, slight positive impact on the winter oilseed rape yield was observed after 2 applications of CA3642. However, no results after 1 application were available.

Yield quality

Data on crop yield quality in the presence of disease(s) are presented in

Table 3.2-449 (HLW, Maritime EPPO zone), Table 3.2-512 (Moisture content, Maritime EPPO zone), Table 3.2-513 (TGW, Maritime EPPO zone),
Table 3.2-526 (oil content, Maritime EPPO zone), Table 3.2-487 (HLW, North-East EPPO zone), Table 3.2-515 (moisture content, North-East EPPO zone), Table 3.2-489, (TGW, North-East EPPO zone), Table 3.2-530 (oil content, North-East EPPO zone), Table 3.2-518 (Moisture content, South-East EPPO zone) and Table 3.2-519 (oil content, South-East EPPO zone).

Data for yield quality parameters from trials where CA3642 was applied twice at the proposed label rate of 1.0 L/ha were either statistically comparable to, or significantly higher than that of the untreated control in all cases, in all EPPO climatic zones.

Crop yield quality parameters following two applications of CA3642 were statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.

Maritime EPPO zone

In the Maritime EPPO zone yield quality (HLW, moisture content, TGW and oil content) was assessed.

There were no significant differences in HLW between CA3642 or the reference products or the untreated control in 1 trial where applications were split between autumn and spring.

There were no significant differences in moisture content between CA3642 or the reference products or the untreated control in 13 trials where 10 trials had 2 spring applications and 3 trials had 2 applications split between autumn and spring.

There was a significant increase in TGW between CA3642 and the reference products when compared to the untreated control in 1 trial where 2 applications were carried out in spring, and no significant differences between CA3642 and the reference products.

Across a total of 9 trials where the oil content of seeds was evaluated, there were no significant differences between CA3642 or the reference products or the untreated control in 7 trials. The oil content for the 1.0 L rate of CA3642 was significantly higher than the untreated control, but statistically comparable to the 1.2 L rate of CA3642 and all reference standards in 1 trial. No other differences were observed for CA3642 compared to the untreated control. The oil content for CA2702 was significantly lower than the untreated control, but statistically comparable to both rates of CA3642 in 1 trial.

North-East EPPO zone

In the North-East EPPO zone yield quality (HLW, moisture content, TGW and oil content) was assessed.

There were no significant differences in HLW between CA3642 or the reference products or the untreated control in 2 trials where 2 applications were conducted in spring.

There were no significant differences in moisture content between CA3642 or the reference products or the untreated control in 13 trials where 2 applications were carried out in spring, and 3 trials had 2 applications split between autumn and spring.

There were no significant differences in TGW between CA3642 and the reference products when compared to the untreated control in 2 trials where 2 applications were carried out in spring.

In a total of 12 trials where 2 applications were carried out in spring, there were no significant differences in oil content between CA3642 or the reference products or the untreated control in 11 trials. In 1 trial, CA3642 (both rates) and CA2702 gave a significantly higher seed oil content compared to the untreated control while Caramba was statistically comparable to the untreated, CA2702 and the lower rate of CA3642.

South-East EPPO zone

In the South-East EPPO zone yield quality (moisture content and oil content) was assessed.

Moisture content was determined in 19 trials, 12 of which had 2 spring applications and 7 trials had split applications in autumn and again in spring. There were no significant differences in moisture content between CA3642 or the reference products or the untreated control in 9 trials. Moisture content for both rates of CA3642 was significantly higher than the untreated control in 9 trials, while only the higher 1.2 L/ha rate was significantly higher than the untreated in 1 additional trial.

Oil content was determined in a total of 11 trials, all of which had 2 spring applications. There were no significant differences in oil content between CA3642 or the reference products or the untreated control in 3 trials. The oil content was significantly higher for both rates of CA3642 compared to the untreated control in the other 8 trials. The oil content for CA3642 at both rates was either statistically comparable to, or higher than that of CA2702. The oil content for CA3642 at both rates was either statistically comparable to, or lower than that of CA2445, and statistically comparable to Propulse where applied. CA3642 was comparable to, or had significantly higher oil content compared to Orius.

Table 3.2-523: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter oilseed rape – Maritime EPPO zone

Rating Type	Country	Variety	DA-A	DA-B	No. of trials	Name Conc Type	UTC	CA3642 300 g/L SC		CA2445 250 g/L EC	CA2702 250 g/L SC	BISTRO 90 g/L EC
						Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1.0 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.6 l/ha 54 g ai/ha
HLW	FRA	NIKITA	249	111			57.30 a 57.3	**56.05 a 97.8**	**56.45 a 98.5**	55.98 a 97.7	56.18 a 98.0	57.55 a 100.4
					1	*Mean*	*57.3*	***97.8***	***98.5***	*97.7*	*98.0*	*100.4*

**In Trial EU20-014-02, the first application was conducted in autumn and the second application was conducted in spring.

Table 3.2-524: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter oilseed rape – Maritime EPPO zone

Part Rated	Country	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	Untreated	CA3642 300 g/L SC		CA2445 250 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250 g/L EC	CA2702 250 g/L SC	BISTRO 90 g/L EC
					Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.6 l/ha 54 g ai/ha
GRAIN	CZE	98	77			7.98 a 8.0	**8.18 a 102.5**	**8.28 a 103.8**	8.10 a 101.5		8.10 a 101.5	8.15 a 102.1	
GRAIN	CZE	95	69			9.45 a 9.5	**9.48 a 100.3**	**9.15 a 96.8**	9.45 a 100.0		9.45 a 100.0	9.43 a 99.8	
GRAIN	CZE	94	67			6.33 a 6.3	**6.33 a 100.0**	**6.25 a 98.7**	6.30 a 99.5		6.30 a 99.5	6.28 a 99.2	
GRAIN	CZE	99	72			4.58 a 4.6	**4.48 a 97.8**	**4.58 a 100.0**	4.53 a 98.9		4.53 a 98.9	4.75 a 103.7	
GRAIN	DEU	100	72			6.83 ab 6.8	**6.65 ab 97.4**	**6.80 ab 99.6**	6.73 ab 98.5		6.73 ab 98.5	6.65 ab 97.4	
GRAIN	CZE	102	78			6.48 a 6.5	**6.50 a 100.3**	**6.40 a 98.8**	6.55 a 101.1		6.55 a 101.1	6.40 a 98.8	
GRAIN	DEU	122	81			6.6 a 6.6	**6.68 a 101.2**	**6.73 a 102.0**		6.65 a 100.8	6.65 a 100.8	6.65 a 100.8	

Part Rated	**Country**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**Untreated**	**CA3642 300 g/L SC**		**CA2445 250 g/L EC**	**PECARI 250 EC 250 g/L EC**	**Summarized PTZ products 250 g/L EC**	**CA2702 250 g/L SC**	**BISTRO 90 g/L EC**
					Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.6 l/ha** **54 g ai/ha**
GRAIN	DEU	117	84			6.50 a 6.5	**6.43 a** **98.9**	**6.53 a** **100.5**	6.38 a 98.2		6.38 a 98.2	6.45 a 99.2	
GRAIN	FRA	264	99			7.83 a 7.8	**9.50 a** **121.3**	**9.18 a** **117.2**	8.93 a 114.0		8.93 a 114.0	8.95 a 114.3	8.30 a 106.0
GRAIN	GBR	194	103			8.55 a 8.6	**8.70 a** **101.8**	**8.73 a** **102.1**	8.70 a 101.8		8.70 a 101.8	8.70 a 101.8	
GRAIN	FRA	250	104			8.55 b 8.6	**8.85 ab** **103.5**	**8.78 ab** **102.7**	9.28 ab 108.5		9.28 ab 108.5	8.85 ab 103.5	
GRAIN	CZE	131	109			6.38 a 6.4	**6.43 a** **100.8**	**6.35 a** **99.5**	6.38 a 100.0		6.38 a 100.0	6.38 a 100.0	
GRAMAR	FRA	249	111			5.78 a 5.8	**5.70 a** **98.6**	**5.50 a** **95.2**	5.38 a 93.1		5.38 a 93.1	5.63 a 97.4	5.75 a 99.5
Mean				13	*Mean* Min Max	*7.1* 4.6 9.5	***101.9*** **97.4** **121.3**	***101.3*** **95.2** **117.2**			*101.2* 93.1 114.0	*101.4* 97.4 114.3	
				10***	*Mean* Min Max	*6.7* 4.6 9.5	***99.8*** **97.4** **102.5**	***99.5*** **95.2** **103.8**			*99.2* 93.1 101.5	*99.8* 97.4 103.7	
				9***	*Mean* Min Max	*6.7* 4.6 9.5	***99.6*** **97.4** **102.5**	***99.2*** **95.2** **103.8**	*99.0* 93.1 101.5		*99.0* 93.1 101.5		
				1***	*Mean*	*5.8*	***98.6***	***95.2***	*93.1*		*93.1*	*97.4*	*99.5*
				1***	*Mean*	*6.6*	***101.2***	***102.0***		*100.8*	*100.8*	*100.8*	
				3**	*Mean* Min Max	*8.3* 7.8 8.6	***108.9*** **101.8** **121.3**	***107.3*** **102.1** **117.2**	*108.1* 101.8 114.0		*108.1* 101.8 114.0	*106.5* 101.8 114.3	
				1**	Mean	7.8	**121.3**	**117.2**	114.0		114.0	114.3	106.0

**In Trials EU20-014-01, -05 and -20, the first application was conducted in autumn and the second application was conducted in spring.
***Mean efficacy across trials, excluding Trials EU20-014-01, -05 and -20.

Table 3.2-525: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter oilseed rape – Maritime EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	Untreated	CA3642 300 g/L SC		CA2702 250 g/L SC	PECARI 250 EC 250 g/L EC
						Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha
GRAIN	DEU	Architect	152	111	S05		4.16 d 4.2	**4.35 bc** **104.6**	**4.37 bc** **105.0**	4.34 bc 104.3	4.31 bc 103.6
					1	*Mean*	*4.2*	***104.6***	***105.0***	*104.3*	*103.6*

Table 3.2-526: Yield quality (oil content - %) effect of CA3642 in efficacy trials on winter oilseed rape – Maritime EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250 g/L EC
						Rate		1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha	1 l/ha 150 g AZX/ha + 150 g PTZ/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha	0.7 l/ha 175 g ai/ha
GRAIN	CZE	DK Exception	118	97			38.27 ab 38.3	**37.53 bc** **98.1**	**37.68 bc** **98.5**	37.29 cd 97.4	38.61 a 100.9		38.61 a 100.9
GRAIN	CZE	Recordie	141	115			40.43 a 40.4	**41.10 a** **101.7**	**40.95 a** **101.3**	40.65 a 100.5	40.98 a 101.4		40.98 a 101.4
GRAIN	CZE	KWS DIGGER	94	67			42.90 b 42.9	**43.38 ab** **101.1**	**43.85 a** **102.2**	43.00 ab 100.2	43.05 ab 100.3		43.05 ab 100.3
GRAIN	CZE	Pioneer PT271	99	72			44.69 a 44.7	**45.68 a** **102.2**	**45.10 a** **100.9**	44.90 a 100.5	46.10 a 103.2		46.10 a 103.2
GRAIN	CZE	KWS DIGGER	102	78			45.19 a 45.2	**44.90 a** **99.4**	**44.16 a** **97.7**	44.24 a 97.9	44.74 a 99.0		44.74 a 99.0
GRAIN	DEU	Hattrick	117	84			42.70 c 42.7	**43.30 abc** **101.4**	**43.20 abc** **101.2**	43.18 abc 101.1	43.33 abc 101.5		43.33 abc 101.5
GRAIN	DEU	Architect	152	111			45.68 a 45.7	**46.25 a** **101.2**	**46.28 a** **101.3**	46.00 a 100.7		46.25 a 101.2	46.25 a 101.2
GRAIN	DEU	Advocat LG	140	112			45.46 a 45.5	**46.34 a** **101.9**	**46.23 a** **101.7**	45.57 a 100.2	45.71 a 100.5		45.71 a 100.5
GRAIN	CZE	DK Expression	155	133			41.52 a	**41.35 a**	**41.15 a**	41.05 a	41.41 a		41.41 a

Part Rated	Country	Variety	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 300 g/L SC		CA2702 250 g/L SC	CA2445 250 g/L EC	PECARI 250 EC 250 g/L EC	Summarized PTZ products 250 g/L EC
						Rate		**1.2 l/ha** 180 g AZX/ha + 180 g PTZ/ha	**1 l/ha** 150 g AZX/ha + 150 g PTZ/ha	**0.7 l/ha** 175 g ai/ha	**0.7 l/ha** 175 g ai/ha	**0.7 l/ha** 175 g ai/ha	**0.7 l/ha** 175 g ai/ha
							41.5	**99.6**	**99.1**	98.9	99.7		99.7
Mean					9	*Mean* Min Max	*43.0* 38.3 45.7	***100.7*** **98.1** **102.2**	***100.4*** **97.7** **102.2**	*99.7* 97.4 101.1			*100.9* 99.0 103.2
					8	*Mean* Min Max	*42.6* 38.3 45.5	***100.7*** **98.1** **102.2**	***100.3*** **97.7** **102.2**	*99.6* 97.4 101.1	*100.8* 99.0 103.2		*100.8* 99.0 103.2
					1	*Mean*	*45.7*	***101.2***	***101.3***	*100.7*		*101.2*	*101.2*
					1	*Mean*	*45.5*	***101.9***	***101.7***	*100.2*	*100.5*		*100.5*

Table 3.2-527: Yield quality (HLW-kg) effect of CA3642 in efficacy trials on winter oilseed rape – North-East EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No of trials	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 250 g/L SC	PROPULSE 250 g/L SE	YAMATO 303 SE 303 g/L SE
						Rate		**1.2 l/ha** 180 g AZX/ha + 180 g PTZ/ha	**1 l/ha** 150 g AZX/ha + 150 g PTZ/ha	**0.7 l/ha** 175 g ai/ha	**0.8 l/ha** 200 g ai/ha	**1.5 l/ha** 455 g ai/ha
GRAIN	LVA	DK Imistar	81	60			73.4 a 73.4	**77.7 a** **105.8**	**76.7 a** **104.5**	77.0 a 104.9	76.3 a 103.9	
GRAIN	POL	ABSOLUT	106	81			69.1 a 69.1	**67.9 a** **98.3**	**74.1 a** **107.2**	69.7 a 100.9		70.7 a 102.4
					2	*Mean* Min Max	*71.2* 69.1 73.4	***102.0*** **98.3** **105.8**	***105.9*** **104.5** **107.2**	*102.9* 100.9 104.9		
					1	*Mean*	*73.4*	***105.8***	***104.5***	*104.9*	*103.9*	
					1	*Mean*	*69.1*	***98.3***	***107.2***	*100.9*		*102.4*

Table 3.2-528: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter oilseed rape – North-East EPPO zone

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name**	**UTC**	**CA3642 300 g/L SC**		**CA2702**	**CA2445**	**Pro-saro**	**PRO-SARO**	**ORI-US EX-TRA**	**CARAM-BA 60 SL**	**YAMA-TO 303 SE**	**PLEXEO 60 EC**
						Conc				**250 g/L**	**250 g/L**	**100 %W/W**	**250 g/L**	**250 g/L**	**60 g/L**	**303 g/L**	**60 g/L**
						Type				**SC**	**EC**	**SL**	**EC**	**EW**	**SL**	**SE**	**EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**1 l/ha** **1000 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **60 g ai/ha**	**1.5 l/ha** **455 g ai/ha**	**1 l/ha** **60 g ai/ha**
GRAIN	POL	Sherpa	95	51			7.5 a 7.5	**7.5 a** **100.0**	**7.5 a** **99.3**	7.5 a 99.3					7.4 a 98.7		
GRAIN	POL	Acapulco	120	74			9.2 a 9.1	**32.2 a** **355.2**	**9.3 a** **102.2**	9.9 a 109.4					8.9 a 98.7		
GRAIN	LTU	Mercedes	76	56			12.8 a 12.8	**12.9 a** **100.6**	**13.1 a** **102.0**	14.5 a 112.9		13.3 a 103.7					
GRAIN	POL	Monolit	97	75			8.1 a 8.1	**8.1 a** **100.4**	**8.3 a** **102.2**	8.0 a 99.1					8.0 a 99.1		
GRAIN	LTU	NK Tech-nic	76	56			8.2 a 8.2	**8.4 a** **102.2**	**8.4 a** **103.1**	8.7 a 106.7			8.4 a 103.1				
GRAIN	POL	Umberto	286	76			11.5 a 11.5	**11.8 a** **102.4**	**11.5 a** **99.5**	11.9 a 102.8	11.3 a 98.3			11.5 a 99.9			
GRAIN	POL	Mercedes	292	85			8.6 a 8.6	**9.7 a** **113.3**	**9.7 a** **112.9**	9.4 a 109.6	10.2 a 119.2			10.0 a 116.6			
GRAIN	POL	Exotter	107	86			8.1 a 8.1	**8.3 a** **102.4**	**8.2 a** **101.0**	8.2 a 101.7	8.1 a 100.0				8.3 a 102.2		
GRAI	POL	Panama	112	90			8.0 a	**8.5 a**	**8.6 a**	8.3 a	8.2 a				8.2 a		

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**Pro-saro 100 %W/W SL**	**PRO-SARO 250 g/L EC**	**ORI-US EX-TRA 250 g/L EW**	**CARAM-BA 60 SL 60 g/L SL**	**YAMA-TO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 1000 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 60 g ai/ha**	**1.5 l/ha 455 g ai/ha**	**1 l/ha 60 g ai/ha**
N							8.0	**106.3**	**107.5**	103.1	102.9				101.9		
GRAIN	POL	Umberto	106	70			20.7 a 20.7	**24.1 a 116.8**	**24.0 a 115.9**	21.5 a 104.2	22.0 a 106.4				18.5 a 89.4		
GRAIN	POL	AB-SOLUT	106	81			7.2 a 7.2	**7.2 a 100.4**	**6.8 a 94.2**	6.8 a 94.9						7.0 a 96.9	
GRAIN	POL	Feliciano	111	77			8.4 b 8.4	**8.8 ab 104.2**	**8.5 ab 101.0**	8.6 ab 102.1						8.5 ab 101.2	
GRAIN	POL	Monolit	96	63			7.9 a 7.9	**8.6 a 109.1**	**8.2 a 104.4**	8.3 a 105.7							8.5 a 107.2
Mean					13	*Mean* Min Max	*9.7* 7.2 20.7	***124.1*** **100.0** **355.2**	***103.5*** **94.2** **115.9**	*104.0* 94.9 112.9							
					11	*Mean* Min Max	*9.6* 7.2 20.7	***127.1*** **100.0** **355.2**	***103.0*** **94.2** **115.9**	*103.6* 94.9 112.9							
					3	*Mean* Min Max	*12.2* 8.0 20.7	***108.5*** **102.4** **116.8**	***108.1*** **101.0** **115.9**	*103.0* 101.7 104.2	*103.1* 100.0 106.4						

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**Pro-saro 100 %W/W SL**	**PRO-SARO 250 g/L EC**	**ORI-US EX-TRA 250 g/L EW**	**CARAM-BA 60 SL 60 g/L SL**	**YAMA-TO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 1000 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 60 g ai/ha**	**1.5 l/ha 455 g ai/ha**	**1 l/ha 60 g ai/ha**
					5	*Mean*	*9.0*	***154.3***	***103.2***	*104.0*							
						Min	7.5	**100.0**	**99.3**	99.1							
						Max	11.5	**355.2**	**112.9**	109.6							
					6	*Mean*	*10.2*	***146.8***	***104.7***	*102.8*	*103.1*				*98.3*		
						Min	7.5	**100.0**	**99.3**	99.1	100.0				89.4		
						Max	20.7	**355.2**	**115.9**	109.4	106.4				102.2		
					2	*Mean*	*7.8*	***102.3***	***97.6***	*98.5*						*99.1*	
						Min	7.2	**100.4**	**94.2**	94.9						96.9	
						Max	8.4	**104.2**	**101.0**	102.1						101.2	
					1	*Mean*	*12.8*	***100.6***	***102.0***	*112.9*		*103.7*					
					1	*Min*	*8.2*	***102.2***	***103.1***	*106.7*			*103.1*				
					1	*Max*	*7.9*	***109.1***	***104.4***	*105.7*							*107.2*
					2	*Mean*	*10.1*	***107.9***	***106.2***	*106.2*	*108.7*			*108.2*			
						Min	8.6	**102.4**	**99.5**	102.8	98.3			99.9			
						Max	11.5	**113.3**	**112.9**	109.6	119.2			116.6			

Table 3.2-529: Yield quality (Thousand grain weight - g) effect of CA3642 in efficacy trials on winter oilseed rape – North-East EPPO zone

Part Rated	**Country**	**Variety**	**DA-A**	**DA-B**	**No of trials**	**Name Conc Type**	**Untreated**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 250 g/L SC**	**Prosaro 100 %W/W SL**	**PROSARO 250 g/L EC**

						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**1 l/ha** **1000 g ai/ha**	**1 l/ha** **250 g ai/ha**
GRAIN	LTU	Mercedes	120	100			5.1 a 5.1	**5.2 a** **102.4**	**5.1 a** **99.6**	5.2 a 102.5	5.1 a 100.3	
GRAIN	LTU	NK Technic	120	100			5.1 a 5.1	**5.0 a** **98.6**	**5.0 a** **99.2**	5.3 a 104.9		5.1 a 100.2
Mean					2	*Mean* Min Max	*5.1* 5.1 5.1	***100.5*** **98.6** **102.4**	***99.4*** **99.2** **99.6**	*103.7* 102.5 104.9		
					1	*Mean*	*5.1*	***102.4***	***99.6***	*102.5*	*100.3*	
					1	*Mean*	*5.1*	***98.6***	***99.2***	*104.9*		*100.2*

Table 3.2-530: Yield quality (oil content - %) effect of CA3642 in efficacy trials on winter oilseed rape – North-East EPPO zone

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**Pro-saro 100 %W/W SL**	**PRO-SARO 250 g/L EC**	**CARAMBA 60 SL 60 g/L SL**	**YAMATO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**0.8 l/ha** **200 g ai/ha**	**1 l/ha** **1000 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **60 g ai/ha**	**1.5 l/ha** **455 g ai/ha**	**1 l/ha** **60 g ai/ha**
GRAIN	POL	Sherpa	99	55			47.2 a 47.2	**43.2 c** **91.5**	**44.9 bc** **95.1**	44.9 bc 95.0					46.2 ab 97.9		
GRAIN	POL	Acapulco	141	95			49.8 a 49.8	**49.5 a** **99.4**	**50.0 a** **100.4**	49.3 a 99.1					49.5 a 99.4		
GRAIN	LTU	Mercedes	78	58			43.3 ab 43.3	**43.5 ab** **100.3**	**43.1 ab** **99.5**	43.1 ab 99.6			43.6 ab 100.8				
GRAIN	POL	Monolit	97	75			48.3 a	**48.8 a**	**49.2 a**	48.1 a					48.6 a		

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**Pro-saro 100 %W/W SL**	**PRO-SARO 250 g/L EC**	**CARAMBA 60 SL 60 g/L SL**	**YAMATO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.8 l/ha** **200 g ai/ha**	**1 l/ha** **1000 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **60 g ai/ha**	**1.5 l/ha** **455 g ai/ha**	**1 l/ha** **60 g ai/ha**
							48.3	**101.1**	**102.0**	99.7					100.7		
GRAIN	LVA	DK Imis-tar	133	112			45.3 b 45.3	**45.7 ab** **100.9**	**45.4 ab** **100.2**	45.5 ab 100.4		45.8 ab 101.1					
GRAIN	LTU	NK Tech-nic	78	58			42.4 a 42.4	**42.7 a** **100.8**	**42.0 a** **99.1**	42.4 a 100.0				42.3 a 100.0			
GRAIN	POL	Exotter	110	89			46.6 a 46.6	**45.3 a** **97.2**	**45.8 a** **98.3**	46.7 a 100.2	46.6 a 100.0				44.1 a 94.6		
GRAIN	POL	Panama	133	111			47.1 a 47.1	**47.1 a** **100.0**	**47.2 a** **100.2**	47.4 a 100.6	47.8 a 101.5				47.8 a 101.5		
GRAIN	POL	Umberto	126	90			41.0 a 41.0	**39.6 a** **96.6**	**39.0 a** **95.1**	40.1 a 97.8	39.5 a 96.3				40.2 a 98.0		
GRAIN	POL	AB-SOLUT	141	116			47.8 a 47.8	**46.2 a** **96.7**	**47.6 a** **99.6**	46.3 a 96.9						48.2 a 100.8	
GRAIN	POL	Feliciano	113	79			50.3 a 50.3	**50.5 a** **100.4**	**47.8 a** **95.0**	49.5 a 98.4						49.4 a 98.2	
GRAIN	POL	Monolit	112	79			50.8 a 50.8	**47.5 a** **93.5**	**49.3 a** **97.0**	46.7 a 91.9							45.9 a 90.4

Part Rated	**Coun-try**	**Variety**	**DA-A**	**DA-B**	**No of tri-als**	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PRO-PULSE 250 g/L SE**	**Pro-saro 100 %W/W SL**	**PRO-SARO 250 g/L EC**	**CARAMBA 60 SL 60 g/L SL**	**YAMATO 303 SE 303 g/L SE**	**PLEXEO 60 EC 60 g/L EC**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**0.8 l/ha** **200 g ai/ha**	**1 l/ha** **1000 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **60 g ai/ha**	**1.5 l/ha** **455 g ai/ha**	**1 l/ha** **60 g ai/ha**
					12	*Mean* Min Max	*46.6* 41.0 50.8	***98.2*** **91.5** **101.1**	***98.5*** **95.0** **102.0**	*98.3* 91.9 100.6							
					9	*Mean* Min Max	*45.7* 41.0 49.8	***98.7*** **91.5** **101.1**	***98.9*** **95.1** **102.0**	*99.2* 95.0 100.6							
					6	*Mean* Min Max	*46.7* 41.0 49.8	***97.6*** **91.5** **101.1**	***98.5*** **95.1** **102.0**	*98.7* 95.0 100.6	*99.3* 96.3 101.5				*98.7* 94.6 101.5		
					3	*Mean* Min Max	*48.4* 47.2 49.8	***97.3*** **91.5** **101.1**	***99.1*** **95.1** **102.0**	*97.9* 95.0 99.7							
					2	*Mean* Min Max	*49.1* 47.8 50.3	***98.5*** **96.7** **100.4**	***97.3*** **95.0** **99.6**	*97.6* 96.9 98.4						*99.5* 98.2 100.8	
					1	*Mean*	*45.3*	***100.9***	***100.2***	*100.4*		*101.1*					
					1	*Mean*	*43.3*	***100.3***	***99.5***	*99.6*			*100.8*				
					1	*Mean*	*42.4*	***100.8***	***99.1***	*100.0*				*100.0*			
					1	*Mean*	*50.8*	***93.5***	***97.0***	*91.9*							*90.4*

Table 3.2-531: Yield quality (moisture content - %) effect of CA3642 in efficacy trials on winter oilseed rape – South-East EPPO zone

Part Rated	Country	Variety	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROPULSE 250 g/L SE	ORIUS 250 g/L SE	TILMOR 240 g/L EC
						Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**
GRAIN	HUN	Mécses	89	64			5.25 a 5.3	**5.53 a 105.3**	**5.68 a 108.2**	5.55 a 105.7		6.00 a 114.3		
GRAIN	HUN	Hybrirock	86	62			5.08 a 5.1	**5.65 a 111.2**	**5.75 a 113.2**	5.65 a 111.2		5.75 a 113.2		
GRAIN	ROU	PT225	97	59			8.60 b 8.6	**8.88 a 103.3**	**8.75 ab 101.7**	8.60 b 100.0	8.80 ab 102.3			
GRAIN	ROU	DK EXTRON	99	64			10.15 d 10.2	**11.55 ab 113.8**	**11.70 a 115.3**	10.90 c 107.4	11.33 abc 111.6			
GRAIN	ROU	MAZARI CS	109	71			10.05 d 10.1	**11.03 bc 109.8**	**10.88 bc 108.3**	10.78 c 107.3	11.13 b 110.7			
GRAIN	SVK	Alicante	97	76			7.58 a 7.6	**7.63 a 100.7**	**7.60 a 100.3**	7.63 a 100.7			7.60 a 100.3	
GRAIN	ROU	VISBY	98	63			9.58 c 9.6	**11.73 a 122.4**	**11.65 a 121.6**	10.35 abc 108.0	10.18 bc 106.3			
GRAIN	ROU	HYBRIROCK	105	70			10.18 f 10.2	**10.98 cd 107.9**	**10.88 cde 106.9**	10.68 e 104.9	11.25 ab 110.5			
GRAIN	SVK	Arabella	103	82			8.00 a 8.0	**8.08 a 101.0**	**8.03 a 100.4**	8.05 a 100.6			8.03 a 100.4	
GRAIN	HUN	Harry	235	80	.		7.88 a 7.9	**9.35 a 118.7**	**8.83 a 112.1**	8.88 a 112.7	9.08 a 115.2			9.53 a 120.9
GRAIN	HUN	Hybrirock	264	79			11.05 a 11.1	**12.03 a 108.9**	**12.08 a 109.3**	10.48 a 94.8	12.40 a 112.2			10.60 a 95.9
GRAIN	HUN	Sherpa	277	92			9.75 a 9.8	**9.58 a 98.3**	**9.73 a 99.8**	9.55 a 97.9	9.85 a 101.0			9.73 a 99.8
GRAIN	HUN	Hybrirock	280	85	.		11.08 a 11.1	**11.13 a 100.5**	**12.25 a 110.6**	10.98 a 99.1	12.55 a 113.3			14.63 a 132.0
GRAIN	HUN	Mécses	267	70	.		4.78 a 4.8	**5.88 a 123.0**	**4.88 a 102.1**	5.40 a 113.0	6.63 a 138.7			5.70 a 119.2

Part Rated	Country	Variety	DA-A	DA-B	No. of trials & ARM*	Name Conc Type	UTC	CA3642 300 g/L SC	CA3642 300 g/L SC	CA2702 250 g/L SC	CA2445 250 g/L EC	PROPULSE 250 g/L SE	ORIUS 250 g/L SE	TILMOR 240 g/L EC
						Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**
GRAIN	ROU	Factor KWS	242	57			10.25 b 10.3	**11.35 a 110.7**	**11.33 a 110.5**	11.30 a 110.2	11.23 a 109.6			
GRAIN	ROU	Hybrirock	242	57			10.33 b 10.3	**11.35 a 109.9**	**11.35 a 109.9**	11.35 a 109.9	11.28 a 109.2			
GRAIN	ROU	ES DANUBE	74	53			10.35 b 10.4	**11.33 a 109.5**	**11.30 a 109.2**	11.33 a 109.5	11.38 a 110.0			
GRAIN	ROU	COMPASS	73	52			10.30 b 10.3	**11.35 a 110.2**	**11.38 a 110.5**	11.33 a 110.0	11.35 a 110.2			
GRAIN	ROU	TRIANGLE	74	53			10.40 b 10.4	**11.35 a 109.1**	**11.33 a 108.9**	11.28 a 108.5	11.43 a 109.9			
Mean					19	*Mean* Min Max	*9.0* 4.8 11.1	***109.2*** **98.3** **123.0**	***108.3*** **99.8** **121.6**	*105.9* 94.8 113.0				
					12***	*Mean* Min Max	*8.8* 5.1 10.4	***108.7*** **100.7** **122.4**	***108.7*** **100.3** **121.6**	*106.1* 100.0 111.2				
					8***	*Mean* Min Max	*10.0* 8.6 10.4	***110.7*** **103.3** **122.4**	***110.3*** **101.7** **121.6**	*106.9* 100.0 110.0	*108.9* 102.3 111.6			
					2***	*Mean* Min Max	*5.2* 5.1 5.3	***108.3*** **105.3** **111.2**	***110.7*** **108.2** **113.2**	*108.5* 105.7 111.2		*113.7* 113.2 114.3		
					2***	*Mean* Min Max	*7.8* 7.6 8.0	***100.8*** **100.7** **101.0**	***100.3*** **100.3** **100.4**	*100.6* 100.6 100.7			*100.3* 100.3 100.4	
					7**	*Mean* Min Max	*9.3* 4.8 11.1	***110.0*** **98.3** **123.0**	***107.7*** **99.8** **112.1**	*105.4* 94.8 113.0	*114.2* 101.0 138.7			
					5**	*Mean* Min	*8.9* 4.8	***109.8*** **98.3**	***106.8*** **99.8**	*103.5* 94.8	*116.1* 101.0			*113.6* 95.9

Part Rated	**Country**	**Variety**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**	**CA3642 300 g/L SC**	**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PROPULSE 250 g/L SE**	**ORIUS 250 g/L SE**	**TILMOR 240 g/L EC**
						Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**	**1.2 l/ha 288 g ai/ha**
						Max	11.1	**123.0**	**112.1**	113.0	138.7			132.0

Table 3.2-532: Yield quality (oil content – %) effect of CA3642 in efficacy trials on winter oilseed rape – South-East EPPO zone

Part Rated	**Country**	**Variety**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PROPULSE 250 g/L SE**	**ORIUS 250 g/L SE**
						Rate		**1.2 l/ha 180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha 150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha 175 g ai/ha**	**0.7 l/ha 175 g ai/ha**	**1 l/ha 250 g ai/ha**	**1 l/ha 250 g ai/ha**
GRAIN	HUN	Mécses	89	64			46.600 a 46.6	46.6 a 100.0	47.2 a 101.2	47.825 a 102.6		47.700 a 102.4	
GRAIN	HUN	Hybrirock	150	126			47.38 a 47.4	47.18 a 99.6	47.35 a 99.9	46.93 a 99.1		47.35 a 99.9	
GRAIN	ROU	DK EXTRON	99	64			42.500 d 42.5	47.620 a 112.0	47.093 a 110.8	45.895 c 108.0	47.470 a 111.7		
GRAIN	ROU	MAZARI CS	109	71			42.950 g 43.0	47.418 b 110.4	47.148 cd 109.8	46.233 f 107.6	47.295 bc 110.1		
GRAIN	SVK	Alicante	112	91			45.08 a 45.1	45.13 a 100.1	45.18 a 100.2	45.13 a 100.1			45.15 a 100.2
GRAIN	ROU	VISBY	98	63			44.403 e 44.4	47.725 ab 107.5	47.225 bc 106.4	46.448 d 104.6	47.960 a 108.0		
GRAIN	ROU	HYBRIROCK	105	70			42.113 e 42.1	47.280 b 112.3	46.978 b 111.6	45.888 d 109.0	47.285 b 112.3		
GRAIN	SVK	Arabella	117	96			44.43 d 44.4	44.73 a 100.7	44.70 ab 100.6	44.63 abc 100.5			44.53 bcd 100.2
GRAIN	ROU	ES DANUBE	74	53			43.450 f 43.5	47.538 c 109.4	47.278 d 108.8	47.050 e 108.3	47.873 b 110.2		
GRAIN	ROU	COMPASS	73	52			42.370 f 42.4	47.590 b 112.3	47.348 c 111.7	46.970 e 110.9	47.638 b 112.4		

Part Rated	**Country**	**Variety**	**DA-A**	**DA-B**	**No. of trials & ARM***	**Name Conc Type**	**UTC**	**CA3642 300 g/L SC**		**CA2702 250 g/L SC**	**CA2445 250 g/L EC**	**PROPULSE 250 g/L SE**	**ORIUS 250 g/L SE**
						Rate		**1.2 l/ha** **180 g AZX/ha + 180 g PTZ/ha**	**1 l/ha** **150 g AZX/ha + 150 g PTZ/ha**	**0.7 l/ha** **175 g ai/ha**	**0.7 l/ha** **175 g ai/ha**	**1 l/ha** **250 g ai/ha**	**1 l/ha** **250 g ai/ha**
GRAIN	ROU	TRIANGLE	74	53			44.490 g 44.5	47.915 b 107.7	47.145 d 106.0	46.240 f 103.9	48.048 b 108.0		
Mean					11	*Mean* Min Max	*44.2* 42.1 47.4	*106.5* 99.6 112.3	*106.1* 99.9 111.7	*105.0* 99.1 110.9			
					7	*Mean* Min Max	*43.2* 42.1 44.5	*110.2* 107.5 112.3	*109.3* 106.0 111.7	*107.5* 103.9 110.9	*110.4* 108.0 112.4		
					2	*Mean* Min Max	*47.0* 46.6 47.4	*99.8* 99.6 100.0	*100.6* 99.9 101.2	*100.8* 99.1 102.6		*101.1* 99.9 102.4	
					2	*Mean* Min Max	*44.8* 44.4 45.1	*100.4* 100.1 100.7	*100.4* 100.2 100.6	*100.3* 100.1 100.5			*100.2* 100.2 100.2

Comments of zRMS:

The increase of the quality parameters of winter oilseed rape yield has been noted after 2 applications of CA3642. In the Maritime EPPO zone, the increase was 1,9% at 1,2 l/ha and 1,3% at 1 l/ha for moisture content, 4,6% at 1,2 l/ha and 5% at 1 l/ha for TGW and 0,7% at 1,2 l/ha and 0,4% at 1 l/ha for oil content. In the North-East EPPO zone, the increase was 2% at 1,2 l/ha and 5,9% at 1 l/ha in case of HLW, 24,1% at 1,2 l/ha and 3,5% at 1 l/ha in case of moisture content, 0,5% at 1,2 l/ha in case of TGW. No increase was detected for oil content. In the South-East EPPO zone, the increase was 9,2% at 1,2 l/ha and 8,3% at 1 l/ha for moisture content, 6,5% at 1,2 l/ha and 6,1% at 1 l/ha for oil content. In conclusion, slight positive impact on the quality parameters of winter oilseed rape yield was visible. However, no results after 1 application were available.

Summary and conclusion on the efficacy of CA3642

Wheat (TRZAW)

On winter wheat, six foliar and ear diseases were assessed in 104 valid trials across 3 EPPO zones.

All trials were undertaken on winter-sown wheat, however the same pathogens also affect spring-sown wheat and other crops of the group as claimed in the GAP table. Extrapolation of the uses from winter wheat to these crops is therefore requested.

Across the datasets applications of CA3642 at 1.2 L/ha or 1.4 L/ha significantly reduced disease severity in winter wheat. In almost all assessments the efficacy of CA3642 was comparable to or better than that of the authorised reference standards. Overall CA3642 provided at least acceptable control of the tested pathogens, with some differences among different leaf levels, pathogens and larger or smaller datasets.

A trend of decreasing disease severity when increasing the dose rate was observed with CA3642 applied at 1.2 L/ha or 1.4 L/ha. Although the rate of 1.4 L/ha overall reduced disease to a greater extent than the 1.2 L/ha rate, the differences were not always statistically significant. The higher dose rate may be more appropriate to prevent further disease development, while in circumstances of low disease pressure, the 1.2 L/ha dose rate may be sufficient to give comparable disease control.

In addition, due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In other assessments in the trials, applications of CA3642 increased the green leaf area of infected wheat. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling. Yield and quality data demonstrates that applications of CA3642 do not cause detrimental effects and can increase these parameters.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.2-1.4 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, this is supported by the data submitted against the same pathogens in other cereal crops in the dossier.

Considering all presented elements, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control a range of foliar and ear diseases on wheat in the Central Regulatory zone.

Durum Wheat (TRZDU)

On durum wheat, three foliar diseases were assessed in eight trials across two EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2, 3 and 4. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved. Most trials were undertaken on winter sown durum wheat. In addition, one trial with spring sown durum wheat TRZDU was available and used to support the efficacy claim of Product CA3642.
No data is available on the proposed uses against brown rust (PUCCRT), or on head blight of cereals Fusarium and Microdochium spp. (FUSASP/MICDSP), however the proposed uses and the trials undertaken on durum wheat are supported by the large dataset on soft wheat (TRZAW).

Across the datasets applications of CA3642 at 1.2 L/ha or 1.4 L/ha significantly reduced disease severity in durum wheat. In almost all assessments the efficacy of CA3642 was comparable to or better than that of the authorised reference standards. Overall CA3642 provided at least acceptable control of the tested pathogens, with some differences among different leaf levels, pathogens and larger or smaller datasets.

Against SEPTTR, CA3642 applied at 1.4 L/ha gave insufficient to acceptable control in the Maritime EPPO zone (49.8-73.8% efficacy), insufficient to excellent control (57.2-95.5%), acceptable to excellent control (82.4-99%) in the South-East zone.

CA3642 applied at 1.2 L/ha gave insufficient to excellent control in the Maritime EPPO zone (37.3 - 95.6%), insufficient to excellent control (16.3-98.7%) in the South-East zone.

Against PUCCSI, CA3642 applied at 1.4 L/ha gave insufficient to excellent control in the Maritime EPPO zone (44.4-100% efficacy. CA3642 applied at 1.2 L/ha gave insufficient to excellent control in the Maritime EPPO zone (42.2-100% efficacy).

Against ERYSGT, CA3642 applied at 1.4 L/ha gave insufficient to excellent control in the Maritime EPPO zone (25-100% efficacy) and low to acceptable control (68.9% - 80.4%) in the South-East zone. CA3642 applied at 1.2 L/ha gave insufficient to acceptable control in the Maritime EPPO zone (22.5-81.4% efficacy) and low to acceptable control (60.4 – 76.4 %) in the South-East zone.

As indicated in this summary, a trend of decreasing disease severity when increasing the dose rate was observed with CA3642 applied at 1.2 L/ha or 1.4 L/ha. Although the rate of 1.4 L/ha overall reduced disease to a greater extent than the 1.2 L/ha rate, the differences were not always statistically significant. However, the differences in efficacy between the 2 dose rates were more discernible in the assessments done after only a single application, or at early assessments. Hence, the higher dose rate may be more appropriate to prevent further disease development, while in circumstances of low disease pressure, the 1.2 L/ha dose rate may be sufficient to give comparable disease control.

In addition, due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In other assessments in the trials, applications of CA3642 increased the green leaf area of infected durum wheat. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling. Yield and quality data demonstrates that applications of CA3642 do not cause detrimental effects and can increase these parameters.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.2-1.4 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, this is supported by the data submitted against the same pathogens in other cereal crops in the dossier.

In this dossier data the majority of efficacy assessments were done after 2 applications of the test product, with some additional data assessing efficacy only after the first application. However, according to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a number of applications of 1- 2, is requested.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control a range of foliar disease on durum wheat in the Central Regulatory zone.

Triticale (TTLWI)

On winter triticale, three foliar diseases were assessed in 14 valid trials across three EPPO zones. Disease severity and, if necessary, due to low severity levels, also pest incidence was assessed and analysed on the main foliar levels 1, 2 and 3 and in few cases, if necessary, also on level 4. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

Across the datasets applications of CA3642 at 1.2 L/ha or 1.4 L/ha significantly reduced disease severity in winter triticale. In almost all assessments, the efficacy of CA3642 was comparable to or better than that of the authorised reference standards. Overall CA3642 provided at least acceptable control of the tested pathogens, with some differences among different leaf levels, pathogens and larger or smaller datasets.

Against SEPTTR, CA3642 applied at 1.4 L/ha gave insufficient to excellent control in the Maritime EPPO zone (26-100% efficacy), acceptable to excellent control (71-100%) in the North-East zone and good to excellent control (72-100%) in the South-East zone.
CA3642 applied at 1.2 L/ha gave insufficient to excellent control in the Maritime EPPO zone (37-100%), low to excellent control (57-100%) in the North-East zone and acceptable to excellent control (72-100%) in the South-East zone.

Against RHYNSE, CA3642 applied at 1.4 L/ha gave acceptable to good control in the Maritime EPPO zone (85-92% efficacy).
CA3642 applied at 1.2 L/ha gave acceptable control in the Maritime EPPO zone (81-83% efficacy).

Against ERYSGR, CA3642 applied at 1.4 L/ha gave good to excellent control in the Maritime EPPO zone (91-100% efficacy) and excellent control (97-100%) in the South-East zone.
CA3642 applied at 1.2 L/ha gave excellent control in the Maritime EPPO zone (97-100% efficacy) and excellent control (98-100%) in the South-East zone.

As indicated in this summary, a trend of decreasing disease severity when increasing the dose rate was observed with CA3642 applied at 1.2 L/ha or 1.4 L/ha. Although the rate of 1.4 L/ha overall reduced disease to a greater extent than the 1.2 L/ha rate, the differences were not always statistically significant. However, the differences in efficacy between the 2 dose rates were more discernible in the assessments done after only a single application, or at early assessments. Hence, the higher dose rate may be more appropriate to prevent further disease development, while in circumstances of low disease pressure, the 1.2 L/ha dose rate may be sufficient to give comparable disease control.

In addition, due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In other assessments in the trials, applications of CA3642 increased the green leaf area of infected winter triticale. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling. Yield and quality data demonstrates that applications of CA3642 do not cause detrimental effects and can increase these parameters.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.2-1.4 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, this is supported by the data submitted against the same pathogens in other cereal crops in the dossier.

In this dossier data the majority of efficacy assessments are where 2 applications of the test product were made, with some additional data assessing efficacy only after the first application. However, according to disease development conditions, a single application may provide sufficient disease control. Therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action. Therefore, the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a number of applications of 1- 2, is requested.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.2-1.4 L/ha to control a range of foliar disease on winter triticale in the Central Regulatory Zone

Rye (SECCW)

On rye, three foliar diseases were assessed in 11 trials across 3 EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2 and 3. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved. All trials were undertaken on winter-sown rye, however the same pathogens also affect spring-sown rye. According to EUROSTAT and the paper by Hucorne (2012) spring sown rye is a minor crop in the concerned MS for this authorisation. Furthermore, no phytotoxic effects have been observed on any of the varieties of rye tested. Therefore, extrapolation of the uses from winter rye to spring rye is requested, according to Appendix 1 of EPPO standard PP1/257 (2).

Across the datasets applications of CA3642 at 1.2 L/ha or 1.4 L/ha significantly reduced disease severity in winter rye. In almost all assessments the efficacy of CA3642 was comparable to or better than that of the authorised reference standards. Overall CA3642 provided at least acceptable control of the tested pathogens, with some differences among different leaf levels, pathogens and larger or smaller datasets.

Against SEPTTR, CA3642 applied at 1.4 L/ha gave low to excellent control in the Maritime EPPO zone (53-96% efficacy), acceptable to excellent control (75-98%) in the North-East zone and low to excellent control (62-100%) in the South-East zone.
CA3642 applied at 1.2 L/ha gave low to acceptable control in the Maritime EPPO zone (52-74%),low to good control (66-93%) in the North-East zone and low to excellent control (59-100%) in the South-East zone.

Against PUCCRR, CA3642 applied at 1.4 L/ha gave acceptable to good control in the Maritime EPPO zone (79-93% efficacy), acceptable to good control (81-92%) in the North-East zone and excellent control (100%) in the South-East zone.
CA3642 applied at 1.2 L/ha gave acceptable to good control in the Maritime EPPO zone (73-93% efficacy), acceptable to good control (80-87%) in the North-East zone and excellent control (100%) in the South-East zone.

Against RHYNSE, CA3642 applied at 1.4 L/ha gave acceptable to good control in the Maritime EPPO zone (76-87% efficacy) and acceptable control (73%) in the North-East zone.
CA3642 applied at 1.2 L/ha gave low to good control in the Maritime EPPO zone (67-86% efficacy) and acceptable control (70%) in the North-East zone.

As indicated in this summary, a trend of decreasing disease severity when increasing the dose rate was observed with CA3642 applied at 1.2 L/ha or 1.4 L/ha. Although the rate of 1.4 L/ha overall reduced disease to a greater extent than the 1.2 L/ha rate, the differences were not always statistically significant. However, the differences in efficacy between the 2 dose rates were more discernible in the assessments done after only a single application, or at early assessments. Hence, the higher dose rate may be more appropriate to prevent further disease development, while in circumstances of low disease pressure, the 1.2 L/ha dose rate may be sufficient to give comparable disease control.

In addition, due to the importance of the diseases and given the possibility of resistance in some of the pathogens assessed, the higher rate should be available for users according to disease development conditions, historical control and cultivar tolerance to the pathogens.

In other assessments in the trials, applications of CA3642 increased the green leaf area of infected rye. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling. Yield and quality data demonstrates that applications of CA3642 do not cause detrimental effects and can increase these parameters.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.2-1.4 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, this is supported by the data submitted against the same pathogens in other cereal crops in the dossier.

In this dossier data the majority of efficacy assessments are where 2 applications of the test product were made, with some additional data assessing efficacy only after the first application However, according to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a number of applications of 1- 2, is requested.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.2-1.4 L/ha to control a range of foliar disease on rye in the Central Regulatory zone.

Oat (AVESS)

On oat, three foliar diseases were assessed in ten trials across three EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1 to 3. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials was not fully achieved.

Across the datasets applications of CA3642 at 1.0 L/ha significantly reduced disease severity in oat. In almost all assessments the efficacy of CA3642 was comparable, or had a higher performance than that of the authorised reference standards. Overall CA3642 provided at least acceptable control of the tested pathogens, with some differences among different leaf levels, pathogens and larger or smaller datasets.

Against ERYSGA, CA3642 applied at 1.0 L/ha gave acceptable to excellent control in the Maritime EPPO zone (71.7-100 %) and low to excellent control (67-100 %) in the North-East. With no viable data existing for the South-East EPPO zone.

Against PUCCCA/PUCCCO, CA3642 applied at 1.0 L/ha gave excellent control in the Maritime EPPO zone (77.5 – 100 %), low to excellent control (61.7 – 100 %) in the South-East EPPO zone and good control (90.7 - 91.3 %) in the North-East zone.

Against PYRNAV, CA3642 applied at 1.0 L/ha gave acceptable to excellent control in the Maritime EPPO zone (80.2 – 100 %) and low to excellent control (50.8 - 98.8 %) in the North-East EPPO zone. With no viable data existing for the South-East EPPO zone.

In other assessments in the trials, applications of CA3642 increased the green leaf area of infected oat. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and development to productive stages, enabling a longer duration of grain filling. Yield and quality data demonstrates that applications of CA3642 do not cause detrimental effects and can increase these parameters.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.0 L/ha was overall equivalent to that provided by the approved reference standards used in the trials or to have at least provided an acceptable level of efficacy. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, this is supported by the data submitted against the same pathogens in other cereal crops in the dossier.

The majority of efficacy assessments are where two applications of the test product were made, with some additional data assessing efficacy only after the first application. However, according to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a number of applications of 1- 2, is requested.

Considering all elements presented in the other sections, it is justified to claim the registration of 1-2 application of CA3642 at 1.0 L/ha to control a range of foliar disease on oat in the

Winter barley (HORVW)

On winter barley, five foliar and ear diseases were assessed in 118 valid trials across 3 EPPO zones.

Across the datasets applications of CA3642 at 1.0 L/ha significantly reduced disease severity in winter barley. In almost all assessments the efficacy of CA3642 was comparable to or better than that of the authorised reference standards. Overall CA3642 provided acceptable control of the tested pathogens, with some differences among different leaf levels, pathogens and larger or smaller datasets.

Against ERYSGH, CA3642 applied at 1.0 L/ha gave very low to excellent control in the Maritime EPPO zone (27.5-100 %), low to excellent control (65.4 – 100 %) in the North-East EPPO zone and acceptable to excellent control in the South-East EPPO zone (74.6 – 100 %).

Against PUCCHD, CA3642 applied at 1.0 L/ha gave good to excellent control in the Maritime EPPO zone (90.9 – 100 %), acceptable to excellent control in the North-East EPPO zone (83.7 – 100 %) and good to excellent control in the South-East EPPO zone (87 – 100 %).

Against PYRNTE/PYRNGR, CA3642 applied at 1.0 L/ha gave very low to excellent control in the Maritime EPPO zone (39.4 – 97.9 %), low to good control in the North-East EPPO zone (61.8 – 88 %) and low to excellent control in the South-East EPPO zone (63 – 100 %).

Against RAMUCC, CA3642 applied at 1.0 L/ha gave very low to acceptable control in the Maritime EPPO zone (37 – 71 %), very low to acceptable control in the North-East EPPO zone (35 – 83 %) and acceptable control in the South-East EPPO zone (82 – 88 %).

Against RHYNSE, CA3642 applied at 1.0 L/ha gave acceptable to excellent control in the Maritime EPPO zone (76 – 96 %), acceptable to good control in the North-East EPPO zone (82 – 93 %) and good control in the South-East EPPO zone (85 – 92 %).

In other assessments in the trials, applications of CA3642 increased the green leaf area of infected wheat. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling. Yield and quality data demonstrates that applications of CA3642 do not cause detrimental effects and can increase these parameters.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.0 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, this is supported by the data submitted against the same pathogens in other cereal crops in the dossier.

The majority of efficacy assessments are where two applications of the test product were made, with some additional data assessing efficacy only after the first application. However, according to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a number of applications of 1- 2, is requested.

Considering all presented elements, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control a range of foliar and ear diseases on winter barley in the Central Regulatory zone.

Spring barley (HORVS))

On spring barley, five foliar diseases were assessed across a total of 79 trials across 3 EPPO zones. Disease severity was assessed and analysed on the main foliar levels 1, 2 and 3. Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials may not have been fully achieved in some cases.

Across the datasets, two applications of CA3642 at 1.0 L/ha significantly reduced disease compared to the untreated control.
CA3642 provided good control of ERYSGH, PUCCHD and PYRNTE across all EPPO zones. Against RAMUCC and RHYNSE, control varied slightly between climatic zones, with good control in the SE, moderate control in the NE and partial (RAMUCC) or moderate (RHYNSE) control in the Maritime zone. Across the trials, the performance of CA3642 was comparable to, or more effective than the standard reference products in the majority of cases.

CA3642 applied twice at 1.0 L/ha gave a mean efficacy of 65-93 % in the Maritime EPPO zone and 66-93 % in the North-East EPPO zone against ERYSGH. The mean efficacy in the South-East EPPO zone on leaf level 4 at early assessments was 98 % after one application of CA3642 at 1.0 L/ha.

CA3642 applied twice at 1.0 L/ha gave a mean efficacy of 83-100 % in the Maritime EPPO zone, 91-100% in the North-East EPPO zone and 92-97% across the North-East zone and neighbouring countries, and 84-98 % in the South-East EPPO zone against PUCCHD on leaf levels 1 to 3.

CA3642 applied twice at 1.0 L/ha gave a mean efficacy of 67-78 % in the Maritime EPPO zone, 86-92 % in the North-East EPPO zone, and 86-88 % in the South-East EPPO zone against PYRNTE on leaf levels 1 to 3.

CA3642 applied twice at 1.0 L/ha gave a mean efficacy of 27-61 % in the Maritime EPPO zone, 69-80 % in the North-East EPPO zone and 63-75 % across the North-East zone and neighbouring countries and 80-87 % in the South-East EPPO zone against RAMUCC on leaf levels 1 to 3.

CA3642 applied twice at 1.0 L/ha gave a mean efficacy of 69-78 % in the Maritime EPPO zone, 75-80 % in the North-East EPPO zone and 78-79 % across the North-East zone and neighbouring countries and 78-92 % in the South-East EPPO zone against RHYNSE on leaf levels 1 to 3.

In other assessments in the trials, applications of CA3642 consistently increased the green leaf area of infected spring barley with significant differences to the untreated control in many cases. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of grain filling.

Crop yield and yield quality was enhanced following treatment with the test product.
CA3642 applied twice at the proposed label rate of 1.0 L/ha resulted in an overall increase in yield ranging between 5-20% compared to the untreated across trials in all EPPO climatic zones, with a statistically significant difference in 18 out of 32 trials. Crop yield following two applications of CA3642 was statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.
Data for yield quality parameters from trials where CA3642 was applied twice at the proposed label rate of 1.0 L/ha were either statistically comparable to, or significantly higher than that of the untreated control in all cases, in all EPPO climatic zones. Crop yield quality parameters following two applications of CA3642 were statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.
It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.0 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited. Furthermore, data presented for diseases in this document are supported by the data submitted against the same pathogens in other cereal crops in the dossier.

In this dossier data the majority of efficacy assessments are where 2 applications of the test product were made, with some additional data assessing efficacy only after the first application. In some cases, such as against ERYSGH in challenging conditions, two applications are required for good control; however, according to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a **maximum** of 2 applications requested.

No data are available for the performance of CA3642 against the fungal phytopathogen *Oculimacula acuformis* (PSDCHA) in spring barley.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1-2 applications of CA3642 at 1.0 L/ha to control a range of foliar disease on spring barley in the Central Regulatory zone.

Head blight- MICDSP – *Microdochium spp.*

R.Ioosa A.Belhadja M.Meneza A.Faureb: The effects of fungicides on Fusarium spp. and Microdochium nivale and their associated trichothecene mycotoxins in French naturally-infected cereal grains. Crop Protection, Volume 24, Issue 10, October 2005, Pages 894-902

Bertelsen, J.R.; Neergaard, E. de; Smedegaard-Petersen, V.: Reasons for improved yield when using azoxystrobin in winter wheat. DJF Rapport. Markbrug (Denmark) 1999. Vol 2 (10) Pages 175- 186.

No data were available for assessment of control of head blight of cereals caused by *Microdochium spp*., on any crop. However, the *Microdochium spp*. are closely related to *Fusarium spp.* which also cause head blight and data in this submission demonstrates efficacy of CA3642 against these pathogens.

In addition, numerous studies including Ioosa *et al*., 2005, & Bertelsen *et al*., 1999 have identified the efficacy of azoxystrobin against *Microdochium spp*., whilst prothioconazole is widely used also for control of head blight caused by *Fusarium* or *Microdochium* species.

Since many of the prothioconazole reference products used in this submission are also authorised for use against Fusarium head blight and data has shown comparability to these products it is likely that CA3642 will provide efficacy against these pathogens as it provides equivalent prothioconazole content with the additional activity of azoxystrobin.

Eyespot of cereals (PSDCHA - *Oculimacula acuformis/ Pseudocercosporella herpotrichoides*)

J.Ramanauskienė I.Gaurilčikienė S.Suproniene : Effects of fungicides on the occurrence of winter wheat eyespot caused by fungi *Oculimacula acuformis* and *O. yallundae, Crop protection,* 2016)

Pest Management Science: Fungicide resistance status in French populations of the wheat eyespot fungi Oculimacula acuformis and Oculimacula yallundae. Pierre Leroux, Michel Gredt, Florent Remuson, Annie Micoud, Anne-Sophie Walker. First published: 19 September 2012 https://doi.org/10.1002/ps.3408

Grains Research & Development Corporation: Preliminary evaluation of fungicide efficacy for control of eyespot in wheat and extension of cost-effective management strategies. Project AAG00002. Final report. 2015

No data were available for assessment of control of eyespot of cereals *Oculimacula acuformis* on any crop. However, studies have shown that prothioconazole and azoxystrobin are effective against this pathogen. Leroux *et al*., 2012 noted that although generalised resistance was observed for some DMI fungicides, prothioconazole remained effective. Ramanauskiene *et al*., showed that 2, 3 and 4 years of prothioconazole treatments allowed to reduce the population of *O. acuformis* assessed from 2009 to 2011 on winter wheat. This positive effect was observed as early as 10 days after treatment.

Moreover, prothioconazole is one of the active substances the most used as fungicide in commercial practices (*Forecasting eyespot development and yield losses in winter wheat*, *HGCA*, *2012*). Standard reference products containing prothioconazole, such as Proline 275 are registered to control eyespot on cereals, at the same application rates as for the other authorised pathogens, which indicates that prothioconazole controls eyespot at dose rates which are demonstrated to control the other major disease pathogens in cereals.

In addition, studies have shown the benefit of using azoxystrobin in combination with a triazole for control of eyespot. For example, Amistar Xtra (200 g/l azoxystrobin + 80 g/l cyproconazole) showed control of up to 77% in trials undertaken in Australia (Grains Research & Development Corporation, 2015). Furthermore, other products on the EU market containing prothioconazole in combination with a strobilurin (Fandango, 100 g/L prothioconazole + 100 g/L fluoxastrobin) are approved for use against *Oculimacula* species in barley, winter wheat and winter rye.

Since the proposed dose rate for CA3642 (180-210 g/ha prothioconazole + azoxystrobin) is comparable to that of the authorised product Proline 275 (200 g/ha prothioconazole), and data shows equivalence of efficacy between these products in other pathogens, it is considered that CA3642 will also provide acceptable control of eyespot at the proposed dose rate.

On cereals a complex of disease is often observed instead of a single disease and since the datasets included in this dossier showed that the range of 1.2-1.4 l/ha gave in overall equivalent disease control compared to the authorized reference products containing prothioconazole, we assume that in most instances CA3642 at 1.2 l/ha will give sufficient control of eyespot, but in situations with high disease pressure, it may be appropriate to use 1.4 l/ha.

Oilseed rape (BRSNW)

On spring, six target diseases were assessed across a total of 98 trials across 3 EPPO zones. Disease severity was assessed and analysed on the leaves, stems, pods and occasionally the roots. Applications were conducted at two timings in the spring in most trials, or at one timing in the autumn and another timing in the spring in some trials; data are summarised across all trials regardless of timing and also separately to assess the impact of a split application across seasons.

Although a comprehensive trials programme was undertaken for this dossier, in some instances, due to the absence of appropriate level of diseases or other agronomic or climatic limitations, the proposed number of valid trials may not have been fully achieved in some cases.

CA3642 provided good control of ALTEBA and SCLESC across all EPPO zones. Against ERYSCR and LEPTMA, control varied slightly between climatic zones, with good control in the SE and NE, and moderate (ERYSCR) or moderate to good control (LEPTMA) in the Maritime zone. CA3642 gave some control of BOTRCI and PYRPBR. Across the trials, the performance of CA3642 was comparable to, or more effective than the standard reference products in the majority of cases, with the CA3642 mixture often performing significantly better than azoxystrobin alone.

ALTEBA

<u>One spring application at 1.0-1.2 L/ha</u>
No data were generated in the Maritime EPPO zone.

In the North-East EPPO zone, the mean efficacy of one spring application of CA3642 was 95-96 % on the leaves.
In the South-East EPPO zone, the mean efficacy of one spring application of CA3642 was 99 % on the leaves.

<u>Two spring applications at 1.0-1.2 L/ha</u>
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 76 % on the leaves ha, 90-91% on the pods and 78-83 % on the stems.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 95 % on the leaves at early timings, decreasing to 81-84 % at later timings. On the pods, two spring applications provided 88-91 % efficacy and 92-94% efficacy on the stems. After one spring application there was 95-96% efficacy on the leaves in 1 trial.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 88-95 % on the leaves at early timings, remaining good at 86-91 % at later timings. On the pods, two spring applications provided 88-91 % efficacy on the pods and 89-94 % efficacy at later timings on the stems. After one spring application there was 99% efficacy on the leaves.

<u>Two applications at 1.0-1.2 L/ha, one in autumn and one in spring</u>
No data were generated in the Maritime EPPO zone.

In the North-East EPPO zone, the mean efficacy of split-season applications of CA3642 was 75-88 % on the pods and 82-88 % efficacy on the stems.

In the South-East EPPO zone, the mean efficacy of split-season applications of CA3642 was 66-73 % on the pods.

BOTRCI

One spring application at 1.0-1.2 L/ha

In the South-East EPPO zone, the mean efficacy of one spring application of CA3642 was 47-49 % on the leaves.

Two spring applications at 1.0-1.2 L/ha

In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 46-49 % on the leaves and 41% on the pods.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 40-41 % on the leaves, 47-60% on the stems and 35% for both rates on the pods.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 46-49 % on the leaves and 41% on the pods.

Two applications at 1.0-1.2 L/ha, one in autumn and one in spring

No data were generated.

ERYSCR

One spring application at 1.0-1.2 L/ha

No data were generated in the Maritime or North-East EPPO zones.

In the South-East EPPO zone, the mean efficacy of a single early spring application of CA3642 at was 95-97 % on the leaves and 84-91 % on the stems.

Two spring applications at 1.0-1.2 L/ha

In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 50-51 % on the leaves. Low control was observed on the pods (0-5%) and stems (11-16%).

No data were generated in the North-East EPPO zone.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 88-93 % on the leaves across all timings ranging from 14-54 DA-B. Two spring applications provided 72-75 % efficacy on the pods and 82-86 % efficacy on the stems.

Two applications at 1.0-1.2 L/ha, one in autumn and one in spring

No data were generated in the Maritime or North-East EPPO zones.

In the South-East EPPO zone, the mean efficacy of split-season applications of CA3642 was 75-76 % on the leaves decreasing to 33-41% at later timings, 24-47 % on the pods and 29-41 % on the stems.

LEPTMA

One spring application at 1.0-1.2 L/ha

No data were generated.

Two spring applications at 1.0-1.2 L/ha

In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 100 % on the leaves. On the stems, efficacy was 61-64 % increasing to 69-74 % at later timings.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 94-95 % on the leaves at all assessment timings. On the pods, 92-95 % efficacy was observed and on the stems, efficacy was 80-91 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 93-97 % on the leaves, decreasing slightly to 88-91 % efficacy at later timings. Two spring applications provided 72-88 % efficacy on the stems.

One application in the autumn at 1.0-1.2 L/ha
In the Maritime EPPO zone, the mean efficacy of one autumn application of CA3642 was 65-70 % on the leaves.

In the North-East EPPO zone, the mean efficacy of one autumn application of CA3642 was 60-80 % on the leaves, decreasing to 40-45 % efficacy at a much later timing.

In the South-East EPPO zone, the mean efficacy of one autumn application of CA3642 was 84-89 % on the leaves.

Two applications at 1.0-1.2 L/ha, one in autumn and one in spring
In the Maritime EPPO zone, the mean efficacy of two split-season applications of CA3642 was 75-88 % on the leaves. On the stems, efficacy was 71-74 % decreasing slightly to 63-70 % at later timings.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 89-92 % on the pods and 72-91 % on the stems.

In the South-East EPPO zone, the mean efficacy of two split-season applications of CA3642 was 86-90 % on the leaves across all timings. Two split-season applications provided 93-94 % efficacy on the pods, and 91-93 % efficacy on the stems decreasing to 49-63 % by the final timings.

PYRPBR
One spring application at 1.0-1.2 L/ha
In the Maritime EPPO zone, the mean efficacy of a single application of CA3642 was 22-23 % on the leaves increasing to 41-47% at later timings.

No data were generated in the North-East EPPO zone.

In the South-East EPPO zone, the mean efficacy of a single application of CA3642 was 44-50 % on the leaves.

Two spring applications at 1.0-1.2 L/ha
In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 43 % on the leaves increasing to 61-70% at a later timing. Efficacy of 55-56 % was observed on the pods and 42-49 % was observed on the stems.

No data were generated in the North-East EPPO zone.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 44-50 % on the leaves.

One autumn application at 1.0-1.2 L/ha
In the Maritime EPPO zone, the mean efficacy of one autumn application of CA3642 was 34-43 % on the leaves. In these trials disease severity ranged from 11 % to 17 %.

No data were generated in the North-East or South-East zones.

Two applications at 1.0-1.2 L/ha, one in autumn and one in spring
In the Maritime EPPO zone, the mean efficacy of two split-season applications of CA3642 was 42-

48 % on the leaves decreasing to 27-37 % at a later timing. Efficacy against PYRPBR on the pods was very low at 2-11% while 59-71% efficacy was observed across all timings on the stems.

No data were generated in the North-East or South-East zones.

SCLESC

One spring application at 1.0 L and 1.2 L/ha

No data were generated in the Maritime or North-East EPPO zones.

In the South-East EPPO zone, the mean efficacy of one spring application of CA3642 was 82-86 % on the leaves.

Two spring applications at 1.0-1.2 L/ha

In the Maritime EPPO zone, the mean efficacy of two spring applications of CA3642 was 67-68 % on the leaves decreasing to 51-52 % at later timings. On the pods, efficacy was 83 % and on the stems efficacy was 79-84 % increasing to 87-88 % at later timings with 68-79% at the final assessment timings.

In the North-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 83-89 % on the stems, with efficacy of 67-72 % at later timings and 88-91% at even later timings. On the pods, efficacy was 83-94 %.

In the South-East EPPO zone, the mean efficacy of two spring applications of CA3642 was 81-86 % on the leaves, decreasing to 72-70 % efficacy at later timings. Two spring applications provided 76-78 % efficacy on the pods, 98-99 % efficacy on the roots and 77-91% efficacy on the stems.

One application in the autumn at 1.0-1.2 L/ha

No data were generated.

Two applications at 1.0-1.2 L/ha, one in autumn and one in spring

No data were generated in the Maritime EPPO zone.

In the North-East EPPO zone, the mean efficacy of two split-season applications of CA3642 was 84-95 % on the stems, with efficacy of 59-67 % at later timings and 66-81% at even later timings.

In the South-East EPPO zone, the mean efficacy of two split-season applications of CA3642 was 86 % on the stems.

In other assessments in the trials, applications of CA3642 consistently increased the green leaf area of infected winter oilseed rape with significant differences to the untreated control in some cases. Green leaf area not only indicates the area free of infection but also the ability of the plant to continue effective growth and develop to productive stages, enabling a longer duration of seed maturation.

Crop yield and yield quality was enhanced following treatment with the test product.
CA3642 applied twice at the proposed label rate of 1.0 L/ha or 1.2 L/ha resulted in an overall increase in yield ranging between 5-25% compared to the untreated across trials in all EPPO climatic zones, with a statistically significant difference in 21 out of 43 trials. Crop yield following two applications of CA3642 was statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.
Data for yield quality parameters from trials where CA3642 was applied twice at the proposed label rate of 1.0 L/ha or 1.2 L/ha were either statistically comparable to, or significantly higher than that of the untreated control in all cases, in all EPPO climatic zones. Crop yield quality parameters following two applications of CA3642 were statistically comparable to, or significantly higher than that of the reference standards in the majority of cases.

It has been demonstrated in the preceding sections that the efficacy of CA3642 at 1.0-1.2 L/ha was overall equivalent to that provided by the approved reference standards used in the trials. Hence it is justified to propose that efficacy comparable to that of the authorised products will be obtained on the pathogens where the presented datasets are limited.

While the proposed GAP for CA3642 recommends 1 application per season in oilseed rape, the majority of data presented in this dossier is from efficacy assessments that have been carried out and summarised following 2 treatment applications (either 2 spring applications or split-season applications with one in autumn / winter and another in spring), with some additional data assessing efficacy after the first application or where only 1 application was conducted due to low disease levels at the first scheduled application timing. A single application may provide sufficient disease control, indeed good to very good control has been demonstrated against ALTEBA, ERYSCR and SCLESC where data are available following one spring application. A second treatment application is considered necessary following a single application of CA3642 in the autumn / winter.
In normal commercial practice, fungal phytopathogens are commonly controlled using a sequence or programme of different fungicides with different modes of action and the choice is therefore available to growers to make a single application of CA3642 followed by application of a different appropriate fungicide, should it be needed. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions.

Oilseed rape is generally considered to be a major crop across Europe. It is primarily sown at the end of the summer or the beginning of the autumnal season but occasionally oilseed rape may be sown in the early spring. Sowing oilseed rape in spring is an alternative to produce green fodder in early summer when no other fodder is available. It is also used as replacement crop for winter sown oilseed rape after a crop failure. Spring-sown oilseed rape is more likely to be cultivated in northern countries where spring is more humid and the crop has chances to succeed.
In addition, spring sown oilseed is susceptible to face the same pathogens than winter oilseed rape and particularly powdery mildew or dark leaf spot. Spring-sown oilseed rape is considered a minor crop for the purposes of this registration.
All efficacy data presented in this BAD have been generated on winter-sown oilseed rape crops and while no data are available for product performance on spring-sown crops, it is considered that all efficacy data generated from two spring applications of CA3642 in winter oilseed rape crops is fully extrapolatable and fully supportive to all oilseed rape crops, as the proposed treatment application in spring oilseed rape is conducted in spring at a time when all crops are vulnerable to the same disease development pressures depending on the prevailing conditions.

Considering all elements presented in the previous sections, it is justified to claim the registration of 1 application of CA3642 at 1.0-1.2 L/ha to control a range of phytopathogenic target diseases on oilseed rape (BRSNW, BRSNS) in the Central Regulatory zone.

3.3 Information on the occurrence or possible occurrence of the development of resistance (KCP 6.3)

According to EPPO guideline PP 1/213 "*Resistance risk analysis*", resistance is the naturally occurring, inheritable adjustment in the ability of individuals in a population to survive a plant protection product treatment that would normally give effective control.

It is in the interest of both registration authorities and crop protection companies to protect the efficacy of plant protection products. Therefore, the development of resistance should be minimized by means of suitable management strategies which should be agreed and implemented before the product is released for full commercial use. To ensure sufficient resistance risk management strategies, a suitable resistance risk assessment should be conducted first. The resistance assessment has been undertaken according to EPPO guideline PP 1/213 "Resistance risk analysis".

3.3.1 Mode of action

Joust Pro (CA3642) is a co-formulation containing prothioconazole and azoxystrobin. These two active substances are from different chemical groups with different modes of action.

Prothioconazole
Prothioconazole is a member of the FRAC fungicide Group 3 (G1-3) with mode of action of Sterol biosynthesis in membranes, C14-demethylase in sterol biosynthesis (erg11/cyp51). Specifically, prothioconazole is a triazolinthione DMI-fungicide (DeMethylation Inhibitors) (SBI: Class I). Prothioconazole is a systemic fungicide molecule which acts on the endoplasmic reticulum of the cell. The mode of action is interference with the synthesis of ergosterol in the target fungi by inhibition of CYP51, which catalyses demethylation at C14 of lanosterol or 24-methylene dihydrolanosterol, leading to morphological and functional changes in the fungal cell membrane.

Azoxystrobin
Azoxystrobin is a member of the FRAC fungicide Group 11 (C3) with mode of action at respiration on target site complex III: cytochrome bc1 (ubiquinol oxidase) at Qo site (cyt b gene). The group is commonly referred to as QoI-fungicides (Quinone outside Inhibitors). These fungicides work by inhibiting the fungi's ability undergo normal respiration. QoI fungicides inhibit fungal respiration by binding to the cytochrome b complex III at the Q0 site in mitochondrial respiration. Specifically, azoxystrobin is from the methoxy-acrylate chemical group and works by blocking electron transfer between cytochromes b and c1. Azoxystrobin is systemic and is absorbed through the roots of the weed and translocated in the xylem throughout the plant.

3.3.2 Mechanism of resistance

According to FRAC (FRAC | Background Information) there are 4 main mechanisms by which fungi can become resistant to fungicides.:

- Alteration of the target site so that sensitivity to the fungicide is reduced: By far the most common way that fungi can become resistant to a specific fungicide is via a change at the target site. As fungi grow their DNA is replicated when new cells are created. This process of replication is imperfect and errors can occur. These errors are known as mutations. Since DNA is the code used to produce enzymes in the cell, some mutations result in changes to the amino acid sequence of the target site which in turn alters the shape of the lock/target site.

The fungicide/key may not fit as well anymore or may not fit at all in the target site/lock. This results in a reduction in sensitivity that may range from small to very large.

- Detoxification or metabolism of the fungicide: The fungal cell contains a vast array of metabolic machinery for normal cellular processes. This metabolic machinery may be able to modify the fungicide to a non-toxic form that is no longer harmful to the cell. Some fungicides are applied as inactive pro-fungicides which require further metabolism by the fungal cell to become the active form. If fungal metabolism is altered such that the activation step does not occur the active form of the fungicide is not produced.

- Overexpression of the target: As discussed above, the fungicide is "competing" with the natural substrate for the target site. As more and more fungicide enters the cell, it out-competes the natural substrate for the target and as a result shuts down critical cellular processes. The production of additional target site enzyme (i.e. overexpression of the target) may increase the likelihood that enough of the fungal substrate will be able to bind with the target site enzyme such that cellular processes such as respiration can occur to some degree. Higher doses of the fungicide in in vitro experiments may restore the balance in favour of the fungicide, but higher doses may not always be practical under field conditions.

- Exclusion or expulsion from the target site: Efflux pumps exist naturally within the cell to exclude or expel foreign substances or to export endogenous substances. In fungi, the most common efflux pumps are ABC and MFS transporters. Despite these efflux pumps, most fungicides can reach effective concentrations inside the cell and inhibit cellular processes. Occasionally, these transporters are successful in expelling enough of the fungicide such that an isolate has reduced sensitivity. The fungicides expelled from the cell by a specific transporter may or may not be active at the same target site; i.e. there is not a direct relationship between the transporter that expels a specific fungicide and the target site of the fungicide. Multidrug resistance (MDR) develops when a specific transporter is able to exclude multiple fungicides from different target site groups. Application of the fungicides in question may exert enough selection pressure that isolates containing these fungicide-exporting transporters become more prevalent in the population as is the case in *Botrytis cinerea* (Kretschmer et al. 2009).

Prothioconazole resistance mechanisms

A paper by Cools *et al*., 2013[2], gives a good overview of the mechanisms of resistance in DMI fungicides, and the following information is cited from this paper:

Triazoles and triazolinthiones form a large group of sterol 14a-demethylation inhibiting (DMI) fungicides, the most widely used class of antifungal agents for the control of pathogenic fungi. When resistance occurs, resistance levels are often low and cross-resistance between members of the azole class incomplete.

The resistance occurs through 3 primary mechanisms:

- mutations in the target-encoding CYP51 gene resulting in decreased affinity of the protein for inhibitors,
- over-expression of the target CYP51 gene most frequently caused by insertions in the predicted promoter regions,
- increased efflux caused by the over-expression of genes encoding membrane transporters.

These mechanisms can combine, and resistance levels are often determined by combinations of CYP51 amino acid alterations, CYP51 gene overexpression and/or increased efflux. In addition, some species have more than one paralogous CYP51 gene.

[2] H. J. Cools, N. J. Hawkins & B. A. Fraaije. Constraints on the evolution of azole resistance in plant pathogenic fungi. Plant Pathology (2013) 62 (Suppl. 1), 36–42

CYP51 alteration

Azoles inhibit sterol 14a-demethylase (CYP51). This P450 enzyme is essential for the biosynthesis of sterols, critical components of cell membranes that are considered prerequisite for the evolution of eukaryotes. Some mutations have been identified leading to resistant phenotypes in fungal pathogens of cereals:

- Y136F, in cereal powdery mildews (Delye et al., 1997, 1998; Wyand & Brown, 2005).
- Y137F, in the septoria leaf blotch pathogen *Zymoseptoria tritici* (Leroux et al., 2007; Cools et al., 2011)
- Y134F in *Puccinia triticina* (Stammler et al., 2009), the wheat brown rust pathogen.

Other CYP51 mutations confer contrasting effects on azole sensitivity. For example, in *Z. tritici* populations the sequential accumulation of CYP51 mutations has generated CYP51 variants with V136A and I381V mutations, combined or not with the substitutions D134G and/or S524T (Leroux & Walker, 2011; Cools & Fraaije, 2013). These isolates are becoming more common as they are less sensitive to the most widely used azoles epoxiconazole, prothioconazole and prochloraz.

Western European populations of *Z. tritici* are dominated by isolates with CYP51 variants carrying V136A and/or I381V, combined with changes at residues Y459–Y461 (Stammler et al., 2008), and different combinations of these mutations can confer decreased sensitivity to all azoles currently registered for septoria leaf blotch control (Cools et al., 2011; Cools & Fraaije, 2013).

In fungal pathogens of oilseed rape, two mutations conferring some degree of insensitivity to triazoles, G460S and S508, have been identified in the *Pyrenopeziza brassicae* population in UK (Ritchie et al., 2020). The proportion of the G460S mutation in the field reached 90% in 2019, but azoles effectiveness was not affected.

CYP51 over-expression

As a mechanism of acquired resistance to fungicides, increased expression of the target-encoding gene is unique to the azoles and with CYP51 over-expression contributes to azole-resistant phenotypes in *P. triticina* (Stammler et al., 2009) and *Z. tritici* (Cools et al., 2012).

CYP51 over-expression may offer some selective advantages in comparison to other resistance mechanisms. Unlike alterations of CYP51 primary sequence, changes in sensitivity of individuals over-expressing

CYP51 are not compound-specific, with complete cross-resistance between the azoles common. However, resistance levels are generally lower than those caused by target site alteration, and therefore higher doses or more active compounds can be effective against isolates over-expressing CYP51.

Enhanced fungicide efflux

Enhanced fungicide efflux, leading to resistance to multiple unrelated drugs, a so-called multidrug-resistant (MDR) phenotype, is caused by the over-expression of genes encoding membrane transporters (e.g. ABC transporters). For example, *Botrytis cinerea* has a genetic mechanism conferring enhanced efflux to multiple fungicides, which impacts on the performance of fungicides in the field (Kretschmer et al., 2009).

Multiple CYP51s

Multiple CYP51 paralogues have been identified in plant pathogens species such as *Fusarium* and *Rhynchosporium* (Becher et al., 2011; Hawkins et al., 2011; Liu et al., 2011). In *Fusarium graminearum*, two of the three CYP51 paralogues, CYP51A and CYP51B, are functionally redundant, both encoding sterol 14a-demethylases, but CYP51A is rapidly induced upon ergosterol depletion caused by azole treatment, and is thus responsible for the intrinsically low sensitivity of *F. graminearum* to some azole fungicides (Fan et al., 2013).

To summarise then, the so far identified mechanisms of resistance for prothioconazole and other DMI fungicides appears to comprise both target and non-target site mechanisms. These mechanisms can reduce sensitivity to those fungicides but do not necessarily result in field resistance of the pathogens, although for some pathogens this has been observed as indicated in the subsequent section.

Azoxystrobin resistance mechanisms
For azoxystrobin the identified resistance mechanisms are target site mutations in cyt b gene (G143A, F129L, G137R) and non-target site mechanisms such as alternative respiration and efflux transporters.

Target site mutation G143A
The major resistance mechanism affecting QoI efficacy is the G143A mutation. This mutation was identified in 2000 as a single amino acid exchange at the position 143 of the cyt b protein, where the substitution is based on a single nucleotide polymorphism in the cyt b gene from GGT (coding for glycine) to GCT (coding for alanine)[3]. This mutation is a critical one for QoI fungicides as it causes a significant loss in fungicide sensitivity, with resistance factors of 100 to 1000+ in some pathogens with little or no (*Blumeria graminis* f. sp. *tritici*) fitness penalties. The mutation has been found in many pathogens including *Blumeria graminis* spp.*, Zymoseptoria tritici/ Mycosphaerella graminicola, Microdochium spp., Pyrenophora tritici-repentis, Ramularia collo-cygni* and *Rhynchosporium secalis.*(FRAC doc. List of pathogens with field resistance towards QoI fungicides (updated 12/09/12)). In cases of resistance to QoI fungicides this mutation is the most common mechanism found.

However, for some pathogens such as *Pyrenophora teres*[4] and *Puccinia* spp[5].with an intron directly after amino acid position 143, the mutation appears to be lethal and so resistance cases relating to this target site mutation are not recorded for these pathogens.

Target site mutation F129L
Another target site resistance mechanism found in pathogens is mutation F129L. This also involves an amino acid substitution detected in the cytochrome b gene, but with this mutation a change from phenylalanine to leucine at position 129.
This mutation has so far been identified in *Pyrenophora teres* and *P. tritici-repentis* and in *Alternaria solani* and *A. alternata*.
However, this mutation confers only partial resistance and resistance factors are considerably lower (5-15, 50) to the extent that at current application rates there is no discernible decrease in field efficacy (reference 2 above)

Target site mutation G137R
In 2007 another mutation was reported from samples of *Pyrenophora tritici-repentis* from Germany (Sierotzki et al., 2007). This mutation comprises an amino acid change, from glycine to arginine at position 137 (G137R). Resistance levels are comparable with those found for F129L in that it confers only partial resistance which is not translated into field effects at current application rates. A single report for low level of this mutation in *P. teres* from Ireland was made by FRAC in 2013, but no peer reviewed papers confirm this to date. However, this mutation has been reported in other non-target pathogens for CA3642 such as *Phakopsora pachyrhizi* and *Magnaporthe oryzae*.

Alternative respiration
This non-target resistance mechanism involves the pathogen bypassing the QoI site using alternative oxidase (AOX) in the respiration pathway, however it appears to involve a fitness cost to the pathogen as it is less efficient in energy production. In addition, infected plants produce flavenoids as a defense

[3] Pesticide Chemistry Crop Protection, Public Health, Environmental Safety (Wiley VCH, 2007) Chapter ??: QoI Fungicides: Resistance Mechanisms and Its Practical Importance Karl-Heinz Kuck:

[4] Sierotzki H, Frey R, Wullschleger J, Palermo S, Karlin S, Godwin J, Gisi U (2007) Cytochrome b gene sequence and structure of Pyrenophora teres and P. tritici-repentis and implications for QoI resistance. Pest Manag Sci 63:225-233

[5] Grasso, V., S. Palermo, H. Sierotzki, A. Garibaldi, U. Gisi, 2006: Cytochrome b gene structure and consequences for resistance to Qo inhibitor fungicides in plant pathogens. Pest Manag. Sci. 62, 465–472.

mechanism one of which, Salicylhydroxamic acid (SHAM), is a competitive inhibitor of the AOX in the mitochondrial electron flow pathway. This mechanism is reported for the target pathogens *Pyrenophora tritici-repentis* and *Mycosphaerella graminicola*[6]. At present it is not clearly established that this mechanism translates to field effect resistance at current dose rates, but may have a detrimental effect, particularly on eradicant use, where low levels of QoI fungicides are applied.

Efflux transporters
As also described above for prothioconazole, enhanced efflux transportation can provide multi drug resistance. For QoI fungicides not only ABC transporters but also MFS transporter genes have been identified as providing a level of resistance. In particular for Septoria, an overexpression of *MgMfs1* was reported[7], although it is noted that isolates found with this mechanism also contain the G143A mutation so the role of the enhanced efflux is unclear. Other efflux transportation mechanisms have been described for *Pyrenophora tritici-repentis* and for *Colleotrichum* species as summarised by Fernández-Ortuño et al., 2008, which affect sensitivity to some QoI fungicides when applied at low dose rates.

3.3.3 Evidence of resistance

The resistance cases presented in this section relate to prothioconazole and to other fungicides with the same mode of action (Group 3) and to azoxystrobin and other Group 11 fungicides. Data has been collated from a range of sources including FRAC annual monitoring reports and the EPPO database. In 2021 EPPO launched a new resistance database (https://resistance.eppo.int/database/cases_list) collating all verified cases of resistance against plant protection products in Europe, therefore this has been used as the primary source.

EPPO database information

Prothioconazole
Specifically for prothioconazole, 5 confirmed cases of resistance are reported on the EPPO resistance database which relate to SEPTTR on wheat (1 in Belgium, 1 in Denmark) and RAMUCC on barley (1 in Germany, 1 in Denmark and 1 in Austria).

For the fungicide Group 3 to which prothioconazole belongs there are 27 cases reported on the database, although 14 of these are for pathogens on other crops such as fruit, vegetables and ornamentals which are not relevant for the use of ~~CA3301~~ CA3642. The 13 cases relevant for ~~CA3301~~ CA3642 are for FUSACU (1) on winter wheat from Belgium; leaf scald (RHYNSE) – 1 case on barley in the UK; powdery mildew (ERYSGR/ERYSGH) – 1 on winter wheat and 1 on barley in the UK, the 3 cases on RAMUCC on barley mentioned above for prothioconazole; and 6 cases for SEPTTR on wheat – 2 as mentioned above and 1 each from Austria, Germany, Sweden and UK. These cases are presented in These cases are presented in Table 3.3.3-1.

Azoxystrobin
In total 28 confirmed cases of resistance are reported on the EPPO resistance database for Group 11 fungicides. Of these, 27 cases specifically include azoxystrobin. An additional case is reported for trifloxystrobin in net blotch of barley (PYRNTE) in the UK. The remaining cases relate to powdery

[6] INTERNATIONAL MICROBIOLOGY (2008) 11:1-9 Mechanisms of resistance to QoI fungicides in phytopathogenic fungi. Dolores Fernández-Ortuño,1 Juan A. Torés,1 Antonio de Vicente, Alejandro Pérez-García

[7] Roohparvar R, De Waard M, Kema GHJ, Zwiers L-H (2007) MgMfs1,a major facilitator superfamily transporter from the fungal wheat
pathogen Mycosphaerella gramicola, is a strong protectant against natural toxic compounds and fungicides. Fungal Genet Biol 44:378-388

mildew – 2 cases in the UK - one on wheat and one on barley; snow mould (MONGNI) on wheat in Denmark; rust of barley (PUCCHD) - 1 case in the UK; 8 cases for *Pyrenophora* spp on wheat or barley, 4 cases on RAMUCC of barley, 1 case for RHYNSE of barley and 11 cases on SEPTTR.

Table 3.3.3-1: Confirmed cases of resistance to prothioconazole and other Group 3 fungicides according to EPPO resistance database*

Case ID	Country	Active substance	Pest	Crop	Mechanism	Occurrence	Reference/source of information
22	UK	Tebuconazole	ERYSGH	HORVX	Unknown	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012
46	UK	Tebuconazole	ERYSGR	TRZAW	Unknown	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012
712	Belgium	Epoxiconazole, Tebuconazole	FUSACU	TRZAW	NTSR - transporter (FcABC1) upregulation	Isolated cases	Hellin, P., Scauflaire, J., Van Hese, V., Munaut, F. and Legrève, A. (2017), Sensitivity of *Fusarium culmorum* to triazoles: impact of trichothecene chemotypes, oxidative stress response and genetic diversity. Pest. Manag. Sci., 73: 1244-1252. https://doi.org/10.1002/ps.4450 ; Hellin P, King R, Urban M, Hammond-Kosack KE., Legrève A, The adaptation of *Fusarium culmorum* to DMI Fungicides Is Mediated by Major Transcriptome Modifications in Response to Azole Fungicide, Including the Overexpression of a PDR Transporter (FcABC1) Frontiers in Microbiology, 9, 2018, p. 1385https://www.frontiersin.org/articles/10.3389/fmicb.2018.01385/full#B18
588	Austria	**Prothioconazole**	RAMUCC	HORVX	Both (TSR and NTSR)	Low - local	Minutes of the 2020 SBI Meeting Recommendations for 2020 - FRAC - https://www.frac.info/docs/default-source/working-groups/sbi-fungicides/group/minutes-of-the-2020-sbi-meeting-recommendations-for-2020.pdf?sfvrsn=50b499a_2
249	Denmark	**Prothioconazole**	RAMUCC	HORVX	Target-site resistance (TSR)	Moderate - local	FRAC
211	Germany	**Prothioconazole**	RAMUCC	HORVX	Both (TSR and NTSR)	Low - local	Expert knowledge meetings and FRAC
29	UK	Tebuconazole	RHYNSE	HORVX	Unknown	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012
729	Sweden	Difenoconazole, Epoxiconazole, Metconazole, Propiconazole, Tebuconazole	SEPTTR	TRZAX	Target-site resistance (TSR)	High - national	Heick TM. P540 AF, Jørgensen, LN (2017) Resistance of winter wheat pathogen *Zymoseptoria tritici* to DMI and QoI fungicides in the Nordic-Baltic region – a status. European Journal of plant pathology. DOI 10.1007/s10658-017-1216-7+P547
710	Belgium	Epoxiconazole, Metconazole, Prochloraz, **Prothioconazole**, Tebuconazole	SEPTTR	TRZAW	Target-site resistance (TSR)	Very high - national	Curvers, K., Pycke, B., Kyndt, T. et al. Sensitivity towards DMI fungicides and haplotypic diversity of their CYP51 target in the *Mycosphaerella graminicola* population of Flanders. J Plant Dis Prot 121, 156–163 (2014). https://doi.org/10.1007/BF03356504
585	Austria	Epoxiconazole, Propiconazole, Tebuconazole	SEPTTR	TRZAX	Both (TSR and NTSR)	Moderate - national	Expert knowledge, meetings, FRAC
247	Denmark	Difenoconazole,	SEPTTR	TRZAX	Target-site	High - na-	Heick TM. P540 AF, Jørgensen, LN (2017) Resistance of winter wheat pathogen *Zy-*

		Epoxiconazole, Metconazole, **Prothioconazole**, Tebuconazole			resistance (TSR)	tional	*moseptoria tritici* to DMI and QoI fungicides in the Nordic-Baltic region – a status. European Journal of plant pathology. DOI 10.1007/s10658-017-1216-7+P547
208	Germany	Epoxiconazole, Propiconazole, Tebuconazole	SEPTTR	TRZAX	Both (TSR and NTSR)	High - national	Expert knowledge meetings and FRAC
45	UK	Tebuconazole	SEPTTR	TRZAW	Unknown	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012

*Accessed 22 June 2022

Table 3.3.3-2: Confirmed cases of resistance to azoxystrobin and other Group 11 fungicides according to EPPO resistance database*

Case ID	Country	Active substance	Pest	Crop	Mechanism	Occurrence	Reference/source of information
24	UK	**Azoxystrobin**	ERYSGH	HORVX	Unknown G143A	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012
48	UK	**Azoxystrobin**	ERYSGR	TRZAW	Unknown G143A	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012
253	Denmark	**Azoxystrobin,** pyraclostrobin	MONGNI	TRZAX	TSR G143A	Moderate - national	Nielsen, LK. Jensen, JD. Justesen AF, & Jørgensen, LN (2013) Microdochium nivale and M. majus and co-occurrence of the species of the FHB complex in Danish small grain cereals. Crop Protection, 43 192-200
738	UK	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	PUCCHD	HORVX	Unknown	Isolated cases - unknown	FRAG-UK list of known UK resistant pathogens March 2012
703	Belgium	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	PYRNTE	HORVX	TSR F129L	Moderate – regional	FRAC
657	Germany	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin,	PYRNTE	HORVX	TSR F129L	Moderate – regional	FRAC

		Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin					
403	France	**Azoxystrobin**, Picoxystrobin, Pyraclostrobin, Kresoxim-methyl, Trifloxystrobin, Fluoxastrobin	PYRNTE	HORVX	TSR F129L	Moderate – regional	FRAC
252	Denmark	**Azoxystrobin**, Pyraclostrobin	PYRNTE	HORVX	TSR F129L	Moderate – regional	Heick, TM, Jørgensen, LN, Christiansen, HB & Olsen, BB. (2017). Fungicide resistance-related investigations. In: Applied crop protection 2016, DCA report Markbrug, nr.094.78-84
27	UK	Trifloxystrobin	PYRNTE	HORVX	Unknown, F129L	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012
697	Austria	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	PYRNTE	HORVX	TSR Mutation G143A in cyt b	Low - unknown	FRAC
250	Denmark	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	PYRNTR	TRZAX	TSR 3 specific mutations - Mutation G143A in cyt b-	High, national	FRAC
213	Germany	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	PYRNTR	TRZAX	TSR Mutation G143A in cyt b	Moderate – unknown but mostly Nordic regions	FRAC
739	UK	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-	RAMUCC	HORVX	TSR Mutation G143A in cyt b	Very high – unknown	FRAC list of known UK resistant pathogens

		methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin					
587	Austria	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	RAMUCC	HORVX	TSR Mutation G143A in cyt b	Low – unknown	FRAC
248	Denmark	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	RAMUCC	HORVX	TSR Mutation G143A in cyt b	High – national	FRAC
210	Germany	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	RAMUCC	HORVX	TSR Mutation G143A in cyt b	Moderate - regional	Expert knowledge meetings and FRAC
740	UK	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	RHYNSE	HORVS	TSR Mutation G143A	Isolated cases - unknown	FRAC list of known UK resistant pathogens
730	Sweden	**Azoxystrobin**, Pyraclostrobin	SEPTTR	TRZAX	TSR	High - national	Heick TM. P540 AF, Jørgensen, LN (2017) Resistance of winter wheat pathogen Zymoseptoria tritici to DMI and QoI fungicides in the Nordic-Baltic region – a status. European Journal of plant pathology. DOI 10.1007/s10658-017-1216-7+P547

702	Belgium	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	SEPTTR	TRZAX	TSR G143A	Very high - national	Amand O, Calay F, Coquillart L, et al. First detection of resistance to QoI fungicides in Mycosphaerella graminicola on winter wheat in Belgium. Communications in Agricultural and Applied Biological Sciences. 2003 ;68(4 Pt B):519-531.
696	Austria	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	SEPTTR	TRZAX	TSR Mutation G143A in cyt b	Moderate - national	FRAC
689	Sweden	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	SEPTTR	TRZAX	TSR Mutation G143A in cyt b	Very high - national	FRAC, Heick TM. P540 AF, Jørgensen, LN (2017) Resistance of winter wheat pathogen Zymoseptoria tritici to DMI and QoI fungicides in the Nordic-Baltic region – a status. European Journal of plant pathology. DOI 10.1007/s10658-017-1216-7+P547
673	Switzerland	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	SEPTTR	TRZAX	TSR Mutation G143A in cyt b	Moderate - national	FRAC
669	Netherlands	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	SEPTTR	TRZAX	TSR Mutation G143A in cyt b	Very high - national	FRAC
665	Spain	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone,	SEPTTR	TRZAX	TSR Mutation	Moderate - regional	FRAC

		Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin			G143A in cyt b		
408	France	**Azoxystrobin**, Picoxystrobin, Pyraclostrobin, Trifloxystrobin, Fluoxastrobin	SEPTTR	TRZAW	Both (TSR and NTSR) TSR cytb-G143A + NTSR efflux (MDR)	Very high - national	Leroux et al, 2006a,b ; Leroux et al, 2007 ; Leroux et walker, 2009a ; Leroux et Walker, 2011
278	Germany	**Azoxystrobin,** Coumoxystrobin, Dimoxystrobin, Enoxastrobin, Famoxadone, Fenamidone, Fenaminstrobin, Flufenoxystrobin, Fluoxastrobin, Kresoxim-methyl, Mandestrobin, Metominostrobin, Orysastrobin, Picoxystrobin, Pyraclostrobin, Pyrametostrobin, Pyraoxystrobin, Pyribencarb, Triclopyricarb, Trifloxystrobin	SEPTTR	TRZAX	TSR Mutation G143A in cyt b	Very high - national	Expert knowledge meetings and FRAC
246	Denmark	**Azoxystrobin**, Pyraclostrobin	SEPTTR	TRZAX	TSR	High - national	Heick TM. P540 AF, Jørgensen, LN (2017) Resistance of winter wheat pathogen Zymoseptoria tritici to DMI and QoI fungicides in the Nordic-Baltic region – a status. European Journal of plant pathology. DOI 10.1007/s10658-017-1216-7+P547
44	UK	**Azoxystrobin**	SEPTTR	TRZAW	Unknown, G143A	Unknown - regional	FRAG-UK list of known UK resistant pathogens March 2012

*Accessed 22 June 2022

FRAC information

Group 3 fungicides

The Fungicide Resistance Action Committee (FRAC) has been working for many years on monitoring of pathogens for resistance and provide annual reports on the results for each group of fungicides. These reports give information on the development of resistance over time. The most recent reports for DMI (Group 3) fungicides from the 2022 SBI working group[8] relevant to ~~CA3301~~ CA3642 are summarised here:

CEREALS

- *Blumeria graminis* (ERYSGR / ERYSGH / ERYSGS/ ERYSGT): In 2021, monitoring was carried out in France, Germany, Hungary, Italy, Poland, Spain and the United Kingdom. Disease pressure in 2021 was low across Europe. DMI field performance was good. Sensitivity data presented for 2016 to 2021 confirmed that the situation was overall stable within the range of variability detected during the last 20 years. In 2020, monitoring was carried out in Belgium, Czech Republic, Denmark, France, Germany, Hungary, Italy, Poland and United Kingdom. In 2019, monitoring was carried out in Czech Republic, France, Germany, Poland, and United Kingdom. A limited monitoring in New Zealand in 2019 showed sensitivity ranges comparable to European populations. Differences in the sensitivity are significantly a.i. and regionally dependent. Higher resistance factors were observed only for particular DMIs, especially in France, Germany and UK, but also to a lesser extend in Belgium.
- On barley, in 2021, monitoring was carried Germany, France, Hungary, Italy, Poland, and the United Kingdom. Monitoring was carried out in Czech Republic, Denmark (2016), France, Germany, Latvia, Sweden (2016), Ukraine, and United Kingdom. Results from 2018 & 2020 monitoring in France, Germany and United Kingdom were presented. In 2021, DMI products performed well. The sensitivity of the populations stayed in the range observed for more than 16 years.

- *Fusarium graminearum* (GIBBZE): In 2019, monitoring was carried out in France. For the past 10 years, a stable sensitivity situation was observed.

- *Parastagonospora nodorum* (LEPTNO): In 2020 & 2021, a limited monitoring was carried out in countries like Czech Republic, Germany, Hungary, Latvia and Sweden. A very narrow sensitivity range with high sensitivity levels was observed in both years

- *Oculimacula spp.* (PSDCHA/PSDCHE): In 2021, monitoring is carried out in Germany, Italy, Latvia, Poland, Slovakia and Ukraine. An analysis of samples from France, Germany, Latvia, Lithuania, Poland, Russia, Spain, Ukraine and United Kingdom from 2020 was presented. In 2020, the same range of sensitivity as in previous years was observed in all countries. In 2019, still comparable sensitivity ranges and medians were observed in all monitored countries without any geographical variations. The 2018 data showed a homogenous and sensitive situation in all countries. Between 2003 and 2012 there was no change in the sensitivity of W and R types, stable situation had been observed during that time. In 2013, some sensitivity change has been observed in the United Kingdom, but not in France or Germany. In 2014 further sensitivity decrease has been observed in the United Kingdom, and for the first time also in France and Germany. However, overall, resistance factors still remain low and performance was not affected.

- *Puccinia triticina* (PUCCRT): In 2020, brown rust disease pressure was low to moderate

[8] Minutes of the 2022 SBI TelCo Meeting Recommendations for 2022 from Jan 21st 2022. FRAC. 2022.

in most of the countries in Europe. Good field performance of DMIs against rust has been maintained. Monitoring in 2020 has been carried out in Belgium, Czech Republic, Denmark, France, Germany, Hungary, Italy, Poland, Romania, Slovakia, Spain and United Kingdom. Sensitivity data from 2020 for wheat brown rust showed that sensitivities were in the range of those of the last 20 years as observed in monitoring from other FRAC member companies.

- *Puccinia hordei* (PUCCHD): Monitoring was carried out in 2014, 2018 and 2019 in Denmark, France, Germany, Sweden, and United Kingdom in 2014, 2018 and 2019. In 2021, monitoring was carried in France, Germany and Poland. In this six-year interval, a very stable situation with a narrow range of sensitivity was observed.

- *Puccinia striiformis* (PUCCST): In 2021, monitoring was carried out in Belgium, Czech Republic, France, Germany, Italy, Poland, and Romania. Disease pressure was low in 2021. The first monitoring in 2015 showed high sensitivity and low diversity, and from 2016 to 2021 a stable situation was reported.

- *Pyrenophora teres* (PYRNTE): In 2021, monitoring was carried out in Austria, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Russia, Slovakia, Spain, Sweden, The Netherlands, Ukraine, and the United Kingdom. In 2020, monitoring was carried out in Austria, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Ukraine, and United Kingdom. Overall, the sensitivity of populations monitored in 2021 stayed in the range observed in previous years, without any major geographical differences across Europe. In 2019, like 2017 lower sensitivities have been frequently detected in major French regions and in a single location in North-Eastern Germany. In the other European regions monitored sensitivity ranges were stable. The monitoring of the last 20 years showed a certain level of fluctuations of the sensitivity level in the regions over the years. In 2018, the situation stabilized again in all countries including France and Germany, thus being comparable to the long-term monitoring results. In 2017 in France significant shifts of sensitivity of populations have been observed. Highest EC50 values were observed in areas of elevated disease pressure, often coupled with a reported reduced variety-resistance at significant cultivation areas, and sub-optimal use of azoles in spray programs (e.g. reduction of rates in comparison to the manufacturer's recommended rate and inappropriate use of effective mix-partners). In general, over the past years a significant fluctuation in sensitivity levels between the years was detected. In 2017 in single locations in Germany there have been seen some shifting which needs to be observed in the next season. The monitoring in the other countries showed a stable situation in 2017 within the regular fluctuation

- *Pyrenophora tritici-repentis* (PYRNTR): From 2019 to 2021, a limited monitoring was carried out in countries like Czech Republic, Finland, Hungary, Lithuania, Romania, Slovakia, Sweden, and the United Kingdom. In these three years of monitoring, a stable and sensitive situation was observed.

- *Pyrenophora graminea* (PYRNGR): From 2019 - 2021, a limited monitoring was carried out in Germany, Poland, United Kingdom & Sweden. The sensitivity range was very narrow and high levels of sensitivity were observed.

- *Ramularia collo-cygni* (RAMUCC): In 2021, monitoring was carried out in Austria, Croatia, Czech Republic, Denmark, France, Germany, Ireland, Italy, Netherlands, Spain, Sweden, and United Kingdom. In 2020, monitoring was carried out in Denmark France, Germany, Hungary, Ireland, Italy, Lithuania, Poland, Slovakia, Spain, Sweden, Switzerland, and United Kingdom. Isolates were detected showing significant loss of sensitivity. Relevant CYP51-mutations explaining the effects have been identified (I325T, I328L, Y403C/Y405H). In 2021, the results from bioassay and molecular analysis focusing on the most relevant mutations are: no resistance in Italy, low frequencies of resistance in Spain & Croatia, moderate frequencies of resistance in Austria and The Netherlands, moderate to high frequencies of resistance in Czech Republic, France, Germany, Ireland, Sweden, and the United Kingdom, high frequencies of resistance in Denmark On the European continent, a gradient in terms resistance frequencies can be observed from north to south. Overall, the frequency of relevant CYP51- mutations was comparable to 2020. The field performance of DMI-containing products remains still relatively good in 2021. In 2020, the results from bioassay and molecular analysis focusing on the most relevant mutations are: no to low frequencies of resistance in Italy, Switzerland, and Spain, no to high frequencies of resistance in France, moderate to high frequencies of resistance in Germany and Sweden, high frequencies of resistance in Czech Republic, Denmark, France, Hungary, Ireland, Lithuania, Slovakia, and United Kingdom. In 2019 the results are: no isolates/samples with the above-mentioned mutations were detected in Spain & Italy, no to low frequencies in Slovenia and Croatia, low frequencies of DMI resistance allele were detected in Switzerland and Slovakia, in Austria, low to moderate frequencies were observed, moderate to high frequencies in Belgium, Germany and Sweden, high frequencies in Ireland, United Kingdom and France. In 2018 the results are: no isolates with the above-mentioned mutations detected in Switzerland, Spain and Italy, and Sweden, no to high frequency in Denmark, low to moderate frequency in single samples from Austria, France, Hungary, low to high frequency in Germany, moderate to high frequency in Belgium, Netherlands, United Kingdom, Ireland, and Latvia. Data from 2017 showed high frequency of resistant strains in Denmark, Ireland, and United Kingdom, moderate frequency in Estonia, low to moderate frequency in Sweden, and no resistant strains were detected in Finland. In 2016, a broad sensitivity range has been identified with very high frequency of high resistant strains in southern Germany, with moderate frequency in Denmark, Ireland, Belgium, Northwestern Germany, and low frequency detected in France, Austria, Sweden, and United Kingdom. No detection of resistance in Estonia.

- *Rhynchosporium secalis* (RHYNSE): In 2021, monitoring was carried out in Denmark, France, Germany, Hungary, Ireland, Italy, Poland, Spain and United Kingdom. Field performance of DMIs was good. In 2020, monitoring was carried out in Denmark, France, Germany, Hungary, Ireland, Italy, Latvia, The Netherlands, Poland, Slovakia, Spain and United Kingdom. Stable situation. The sensitivity of the populations stayed in the range observed in Europe in the previous 16 years.

- *Zymoseptoria tritici* (SEPTTR): Disease pressure in 2021 was moderate with a later onset in some wheat growing regions in Europe. Field performance of DMI-containing fungicides was good when used according to the manufacturers and FRAC recommendation. The overall sensitivity levels were stable and comparable to previous years. In 2021, monitoring was carried out in Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Poland, Romania, Russia, Slovakia, Spain, Sweden, The Netherlands, Turkey, Ukraine, and the United Kingdom. In 2020, disease pressure was low to moderate with very dry conditions in some countries. DMIs field performance was good when used according to the manufacturers and FRAC recommendations. No general field resistance has been reported. In 2020, monitoring was carried out in Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, Ukraine and United Kingdom. In 2020, the sensitivity of populations was overall stable on European level with EC50 sensitivity values in the range of previous years. Overall, as already reported in 2019, DMI EC50 sensitivity values were somewhat higher in the UK and Ireland than observed on the European continent where a gradient can be observed from North-West to South-East. In *Z. tritici*, different DMI haplotypes can lead to varying levels of sensitivity depending on the chemical structure. As DMIs are generally cross-resistant, resistance management approaches should be the same for all DMIs. In 2019, the sensitivity of the populations was overall stable on European level with EC50 sensitivity values slightly higher compared to 2018 in some geographies but overall, in the range of previous years. In 2018, the sensitivity of the populations was overall stable on the European level. In 2016 and 2017, the sensitivity of populations was overall stable on a European level with regional differences also based on different disease epidemics. In regions with lower sensitivity in 2015, the sensitivity of the populations was stable and, in some areas, even partially increased. In 2015 depending on the individual active ingredient and regions slight shifts of sensitivity of populations have been observed. Highest EC50 values were observed in areas of elevated disease pressure and sub-optimal use of azoles in spray programs (e.g. reduction of rates in comparison to the manufacturer's recommended rate and inappropriate use of effective mix partners). After the slight increase in the frequency of less sensitive isolates from 2002 to 2004, the situation had stabilised between 2005 and 2008. In 2009, a trend to slightly higher EC50 values were observed in important cereal growing areas (France, Germany, Ireland, United Kingdom); this trend has slowed down in 2010 to 2012 and was stable in 2013. 2014 sensitivity was in the same range as 2011. In regions with limited options in fungicides classes and/or a common practice of significantly reduced rates DMIs are at higher risk and performance might be impacted.

OILSEED RAPE

- *Plenodomus lingam / Plenodomus biglobosus* (LEPTMA): In 2020/21, monitoring was carried out in Austria, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Latvia, Lithuania, Poland, Romania, and the United Kingdom. The monitoring data showed a stable sensitivity range as in previous years. In 2019/2020, monitoring was carried out in, Czech Republic, Finland France, Germany, Hungary, Ireland, Latvia, Lithuania, Poland, Romania, Slovakia, Sweden and United Kingdom. In 2018/19, monitoring was carried out in Czech Republic, France, Finland, Germany, Hungary, Poland, Romania, Slovakia, and United Kingdom. Data showed a stable sensitivity range as in the last 10 years.

- *Sclerotinia sclerotiorum* (SCLESC): All monitoring data from 2016 - 2021 showed a stable and narrow sensitivity range with no geographical differences. In 2021, monitoring was carried out in Bulgaria, Czech Republic, France, Germany, Hungary, Poland, Romania, Sweden, The Netherlands, Ukraine and the United Kingdom. In 2020, monitoring was carried out in Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Ukraine and United Kingdom. Monitoring was carried out in 2019 in Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Latvia, Poland, Romania, Slovakia and Ukraine. Disease pressure was moderate. Monitoring was carried out in 2018 in Bulgaria, Czech Republic, France, Germany, Hungary, Poland, Romania, Slovakia, and United Kingdom. Disease pressure was low to moderate. Monitoring was carried out in 2017 in Czech Republic, Denmark, France, Germany, Latvia, Lithuania, Poland, Sweden, and United Kingdom. Disease pressure was low to moderate. Monitoring was carried out in 2016 in Czech Republic, France, Germany, Lithuania, Poland, Slovakia, and United Kingdom. Disease pressure was low to moderate.

Group 11 fungicides

The most recent reports for QoI (Group 11) fungicides from the 2022 QoI FRAC working group meeting[9] relevant to CA3301 are summarised here:

CEREALS

Field experience in 2019 has confirmed that, when used according to FRAC guidelines, the performance of QoI containing products within spray programmes was good. QoIs continue to contribute to overall disease management in cereals.

- *Blumeria graminis* (ERYSGR / ERYSGH / ERYSGS/ ERYSGT): according to the FRAC, no data was available from 2021. Monitoring based on molecular data in 2020 for samples collected from wheat showed low to moderate frequency of G143A in BG, moderate in HU, CZ and high in PL. Samples collected from rye in 2020 from PL were all sensitive, based on molecular analysis. In 2019 monitoring was carried out in Czech Republic, Latvia, Lithuania and Poland with medium to high frequencies of resistance.

- *Septoria tritici* (SEPTTR): Monitoring data based on molecular data showed in 2021 the following situation: In Belgium, Denmark, France, Germany, Ireland, Sweden, and United Kingdom widespread resistance over all these countries at high levels were detected. Moderate to high resistance level was detected in Czech Republic, Latvia, Lithuania and Poland. In Italy, Spain, Hungary, Romania, Slovakia and Ukraine populations were showing in average moderate levels of resistance with partly high variability. Low to moderate levels were reported in Bulgaria and Russia. No resistance was found in Turkey. Monitoring data based on molecular data showed in 2020 the following situation: In France, Germany, Denmark, Ireland, Latvia, Lithuania, Sweden, and United Kingdom widespread resistance over all these countries at high levels were detected. Medium to high resistance level was detected in Croatia, Czech Republic and Poland. In Austria, Italy, Spain, Switzerland and Ukraine populations were showing in average moderate levels of resistance with high variability. Low to moderate levels were reported in Hungary, Romania, Russia, Slovakia and Ukraine. No to low levels of resistance were found in Bulgaria and Turkey.

- *Puccinia recondita* (PUCCRE): The monitoring in 2020 and 2021 based on bioassay confirmed the sensitive situation reported already in previous years. Countries tested included Belgium, Denmark, France, Germany, Hungary, Italy, Latvia, Poland and United Kingdom. In 2021, performance of QoI fungicides against brown rust was good. Findings in 2019: No resistant isolates were detected in widespread monitoring studies in Europe in 2019, confirming the fully sensitive picture (Belgium, France, Germany and United Kingdom).

- *Puccinia striiformis* (PUCCST): The monitoring in 2020 and 2021 based on bioassay confirmed the sensitive situation reported already in previous years. Countries included: Belgium, Denmark, France, Germany, Italy, Netherlands, Poland, Spain and United Kingdom. Findings from 2019: All isolates tested from Belgium, Germany, Denmark, Latvia, Sweden and United Kingdom were sensitive.

- *Blumeria graminis f. sp. hordei* (ERYSGH): No monitoring in 2020 and 2021. Limited monitoring in 2019 Findings: No to Low in Latvia and Lithuania. Overall, where monitoring was carried out, there was a similar situation in 2018 as compared to 2017.

- *Pyrenophora teres* (PYRNTE): Field performance of QoI-containing fungicides against net blotch was good in 2021. Additional information: Mainly the F129L mutation was found. As

[9] Minutes of the 2022 QoI WG Meeting and Recommendations for 2022 on 20th of Jan 2022. FRAC 2022.

already observed with other pathogens, resistance factors are significantly lower in comparison with the G143A mutation and field performance of products used according to FRAC and Manufacturers' recommendations remains good. These findings are consistent with the reported presence of a lethal intron in several fungi making the G143A mutation unlikely to occur. Monitoring in 2021 based on bioassay and molecular studies showed the following situation: Moderate to high levels were found in France, Germany, Ireland, Netherlands, and United Kingdom with partly variability. Moderate levels were detected in Denmark and Romania. No to low levels were reported in Bulgaria, Hungary, Italy, Latvia, Poland, Russia, Slovakia, Spain, Sweden and Ukraine. No resistance or mutation were found in Austria, Czech Republic and Greece. Findings until 2020: Monitoring in 2020 based on bioassay and molecular studies showed the following situation: Medium to high levels were found in Belgium, Germany, Ireland, Netherland and United Kingdom. Medium levels were detected in Denmark, France, Lithuania, Sweden, Switzerland and Poland. No to low levels were reported in Austria, Hungary, Italy, Latvia, Poland, Romania, Russia, Slovakia, Spain and Ukraine. No resistance of mutation was found in Bulgaria, Czech Republic and Greece. The situation in 2019 was as follows: Medium to high in Denmark. Medium levels were detected in Belgium, Germany, France and United Kingdom. No to medium in Ireland. Low in Netherlands, Sweden and Switzerland. No to low levels in Austria, Bulgaria, Czech Republic, Italy, Latvia, Poland, Romania, Russia, Slovakia, Spain and Ukraine. No resistance of mutation was found in Greece and Hungary. In 2017 control of net blotch, esp. in areas in France, was difficult and potentially related to e.g. the high disease pressure, low varietal diversity, coupled to the reported breakdown of variety-resistance (variety ETINCEL) at significant cultivation areas and higher frequencies of mutated strains.

- *Rhynchosporium secalis* (RHYNSE): Monitoring: Performance of QoI fungicides against Leaf scald was good. In 2020 and 2021 monitoring based on bioassay and molecular studies showed full sensitivity in Czech Republic, Denmark, Germany, France, Hungary, Ireland, Italy, Latvia, Netherland, Poland, Romania, Slovakia, Spain, Sweden and United Kingdom. Findings in 2019: in 2019, samples were sensitive in Belgium, Denmark, France, Germany, Ireland, Poland, Slovakia and United Kingdom. Additional information: However, in some years since 2008 (e. g., 2012, 2013 France, 2014 UK, 2015 Spain, 2019 United Kingdom), occasionally isolates/samples have been found containing the G143A mutation. The frequency is always very low.

- *Pyrenophora tritici-repentis* (PYRNTR): Monitoring in 2021 based on molecular studies measuring frequency of G143A, F129L and G137R and bioassay data showed the following situation: High levels of resistance were detected in Germany, Lithuania and Sweden. Moderate frequency of resistance was detected in Estonia and Latvia. Monitoring in 2020 based on molecular studies measuring frequency of G143A, F129L and G137R and bioassay data showed the following situation: High levels of resistance were detected in Denmark, Hungary and Latvia, moderate to high in Poland, moderate in Germany, low in Austria, Czech Republic, Romania and Ukraine. Single resistant samples/isolates were found in Russia and Sweden. In 2019 samples distributed over countries containing the G143A mutation were found at the frequencies indicated below, partly based on limited number: High frequency in Denmark and Latvia, Medium resistance frequencies were found in Germany. Low in Austria. No in Bulgaria and United Kingdom. Single resistant samples/isolates were found in Finland, Latvia, Ukraine and Russia. Additional information: Although all three point mutations known for QoIs (G143A, F129L, G137R) have been detected in the past, and can occur in the same population, the G143A mutation is now dominant in this pathogen.

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- *Ramularia collo-cygni* (RAMUCC): Monitoring in 2021 based molecular quantification G143A showed the following results: High frequency of resistance was found in Czech Republic, Germany, France, Ireland, Netherlands, Spain and United Kingdom, moderate frequency in Austria, Croatia and Italy. Monitoring in 2020 based on bioassay and molecular quantification G143A showed the following results. High frequency of resistance was found in Czech Republic, Denmark, Hungary, Ireland, Latvia, Slovakia, Sweden and United Kingdom, moderate to high frequency in Germany and France, moderate frequency in Switzerland and ow frequency in Spain. In 2018 findings were: High frequency of G143A in Denmark, France, Hungary, Ireland, Spain and United Kingdom. Moderate frequency of G143A in Germany, Italy and Romania. Low frequency of G143A was found in Austria and Switzerland.

- *Puccinia hordei* (PUCCHD): In 2020 and 2021 monitoring data based on bioassay showed full sensitivity in Belgium, Denmark, France, Germany, Hungary, Italy, Latvia, Poland and United Kingdom. As previously described sensitivity studies with *Puccinia hordei*, occasional isolates with slightly higher EC50 values to QoIs have been detected with no practical relevance and without any known target site mutations No monitoring was carried out in 2019. No to low: During sensitivity studies with *Puccinia hordei* during 2010 to 2014, occasional isolates with slightly higher EC50 values to QoIs have been detected in Denmark, France, Germany, Sweden, and United Kingdom (in 2014 only in Denmark, France, and United Kingdom). Situation in 2018 is similar as found in 2014. Additional information: However, resistance factors are low and the mutations normally associated with QoI resistance were not found. The practical relevance of these findings is considered to be minor. The mechanism is not known, no relevant mutations have been found. Field performance in 2018 of QoI containing spray programs was good

<u>OILSEED RAPE</u>

- *Sclerotinia sclerotiorum* (SCLESC): Findings based bioassays in 2020 and 2021 showed full sensitivity in Austria, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Latvia, Lithuania, Netherlands, Poland, Romania, Ukraine and United Kingdom. In 2019 full sensitivity has been monitored as in previous years in Czech Republic, Denmark, France, Germany, Hungary, Latvia, Poland, Romania, Slovakia and Ukraine. Previous monitoring showed the following: Monitoring in 2016, 2017 and 2018 from Czech Republic, Hungary, Denmark, France, Germany, Latvia, Lithuania, Poland, Romania, Sweden, Ukraine and United Kingdom Slovakia and Bulgaria showed a fully sensitive situation with no target site mutations detected. Additional information: Sporadic cases of reduced sensitivity observed in lab studies underlines the need to use inhibitors of the alternative oxidase (AOX), such as SHAM or propyl-gallate, in sensitivity tests. Relevance of the AOX in practice needs further elucidation.

- *Leptosphaeria maculans* (LEPTMA): Findings based on bioassays in 2019/20/21: Full sensitivity was found in Austria, Czech Republic, Denmark, France, Germany, Lithuania, Poland, Romania and United Kingdom for both species. As in the previous years *P. lingam* was more frequently detected than *P. biglobosus*. In 2018/19 full sensitive situation were found in samples from Czech Republic, Croatia, Germany, France, Poland, Slovakia and United Kingdom. Previous monitoring showed the following: Monitoring carried out in 2017/18 in Czech Republic, Germany, France, Poland and United Kingdom showed a fully sensitive situation. So far, no resistant isolate has been found in any country.

- *Pyrenopeziza brassicae* (PYRPBR): Initial monitoring in 2020 from United Kingdom indicates full sensitivity based on bioassay.

In addition, FRAC provides information on the first records of resistance to fungicides[10] and Tables 3.3.3-3 and Table 3.3.3-4 below present the cases for Group 3 and Group 11 fungicides respectively.

[10] List of first confirmed cases of plant pathogenic organisms resistant to disease control agents. Revised May 2020. FRAC

Table 3.3.3-3: FRAC* cases for DMI fungicides relevant to ~~CA3301~~ CA3642 GAP

Pest	Crop	Reference/source of information	Remarks
ERYSGH	HORVX	Fletcher J S, Wolfe M S (1981) Insensitivity of *Erysiphe graminis f. sp. hordei* to triadimefon, triadimenol and other fungicides. Proceedings of the Brighton Crop Protection Conference, Pests & Diseases 633 – 640	Field
ERYSGR	TRZAX	De Waard M A, Kipp E M C, Horn N M, Van Nistelrooy J G M (1986). Variation in sensitivity to fungicides which inhibit ergosterol biosynthesis in wheat powdery mildew. Netherlands Journal of Plant Pathology 92, 21 – 32	Field
GIBBZE	TRZAX	Spolti, P.; Ponte, E. M. del; Dong, Y. H.; Cummings, J. A.; Bergstrom, G. C.; del Ponte, E. M. (2014) Triazole sensitivity in a contemporary population of *Fusarium graminearum* from New York wheat and competitiveness of a tebuconazole-resistant isolate. Plant Disease, Vol. 98, Number 5, pp. 607-613	Field
SEPTTR	TRZAX	Metcalfe R J, Shaw M W, Russell P E (2000). The effect of dose and mobility on the strength of selection for DMI fungicide resistance in inoculated field experiments. Plant Pathology 49, 546-557 Mavroedi V I, Shaw M W (2005). Sensitivity distributions and cross resistance patterns of *Mycosphaerella graminicola* to fluquinconazole, prochloraz and azoxystrobin over a period of 9 years. Crop Protection 24, 259-266 HGCA (2005). Wheat Disease Management Guide – 2005 Update. Home Grown Cereals Authority, London UK Cools H J, Fraaje B A, Lucas J A (2005). Molecular mechanisms correlated with changes in triazole sensitivity in isolates of *Mycosphaerella graminicola*. Proceedings of the BCPC International Congress, Crop Science & Technology 2005, 267-274	Field experiments Field Laboratory
PSDCHA/PSDCHE	TRZAW	Leroux P, Marchegay P (1991). Caractérisation des souches de *Pseudocercosporella herpotrichoides* agent du Piétin-verse des céréales, resistantes au prochloraze, isolées en France sur blé tendre d'hiver. Agrononie 11, 767 – 776	Field
PUCCST	TRZAW	Bayles R A, Stigwood P L, Clarkson J D S (2000). Shifts in sensitivity of *Puccinia striiformis* to DMI fungicides in the UK. Acta Phytopathologica et Entomologica Hungarica 35, 381 - 382 Napier B A S, Bayles R A, Stigwood P L (2000). Sensitivity of powdery mildew and yellow rust to DMI, morpholine and strobilurin fungicides in England and Scotland. Proceedings of the BCPC Conference Pests & Diseases, 427-434	Sensitivity shift Laboratory
PYRNTE	HORVX	Sheridan J E, Grbavac N, Sheridan M H (1985). Triadimenol insensitivity in *Pyrenophora teres*. Transactions of the British Mycological Society 85, 338 – 341	Field
PYRNTR	TRZAW	Reimann S, Deising H B (2005). Inhibition of efflux mediated fungicide resistance in *Pyrenophora tritici-repentis* by a derivative of 4 '-hydroxyflavone and enhancement of fungicide activity. Applied and Environmental Microbiology 71, 3269-3275	Field
RHYNSE	HORVX	Hunter T, Jordan V W, Kendall S J (1986). Fungicide sensitivity changes in *Rhynchosporium secalis* in glasshouse experiments. Proceedings of the British Crop Protection Conference, Pests & Diseases 523 – 536 Kendall S J, Hollomon D W (1990). DMI resistance and sterol 14-alpha demethylation in *Rhychosporium secalis*. Pro-	Glasshouse Field

		ceedings of the British Crop Protection Conference Pests & Diseases 1129-1134 Kendall S J, Hollomon D W, Cooke L R, Jones D R (1993). Changes in sensitivity to DMI fungicides in *Rhynchosporium secalis*. Crop Protection 12, 357 – 362 Cooke L, Locke T, Lockley K D, Phillips A N, Sadiq M D S, Coll R, Black L, Taggart P J, Mercer P C (2004). The effect of fungicide programmes based on epoxyconazole on the control and DMI sensitivity of *Rhynchosporium secalis* in winter barley. Crop Protection 23, 393-406.	 Field isolates Field
PYRPBR	BRSNN	Carter, H. E.; Fraaije, B. A.; West, J. S; Kelly, S. L; Mehl, A.; Shaw, M. W.; Cools, H. J. (2014). Alterations in the predicted regulatory and coding regions of the sterol 14 -demethylase gene (CYP51) confer decreased azole sensitivity in the oilseed rape pathogen *Pyrenopeziza brassicae*. Molecular Plant Pathology, 15, Number 5, pp. 513-522	Field

*List of first confirmed cases of plant pathogenic organisms resistant to disease control agents. Revised May 2020. FRAC

Table 3.3.3-4: FRAC* cases for QoI fungicides relevant to ~~CA3301~~ CA3642 GAP

Pest	Crop	Reference/source of information	Remarks
ERYSGT	TRZAW	Heaney S P, Hall A A, Davies S A, Olaya G (2000). Resistance to fungicides in the QoI-STAR cross resistance group: current perspectives. Proceedings of the BCPC Conference – Pests & Diseases 755 – 762 Sierotzki H, Wullschleger J, Gisi U (2000a). Point mutation in cytochrome b gene conferring resistance to strobilurin fungicides in *Erysiphe graminis f. sp. tritici* field isolates. Pesticide Biochemistry and Physiology 68, 107-112	Field Resistance mechanism
ERSYGH	HORVX	Heaney S P, Hall A A, Davies S A, Olaya G (2000). Resistance to fungicides in the QoI-STAR cross resistance group: current perspectives. Proceedings of the BCPC Conference – Pests & Diseases 755 – 762	Field
MONGNI/ MICDMA	TRZAX	Walker A S, Auclair C, Gredt M, Leroux P (2009). First occurrence of resistance to strobilurin fungicides in *Microdochium nivale* and *Microdochium majus* from French naturally infected wheat grains. Pest Management Science 65 906-915	Isolates from seeds
MONGNI	TRZAX	FRAC 2011	FRAC Japan report
MICDSP	Cereals	FRAC 2008	Field, France, G143A confirmed
LEPTNO	TRZAX	Blixt E, Djurle A, Yuen J, Olson Å (2009). Fungicide sensitivity in Swedish isolates of *Phaeosphaeria nodorum.* Plant Pathology 58, 655-664	field, molecular data
PYRNTE	HORVX	FRAC Semar M, Strobel D, Koch A, Klappach K, Stammler G. (2007). Field efficacy of pyraclostrobin against populations of *Pyrenophora teres* containing the F129L mutation in the cytochrome b gene. Journal of Plant Diseases and Protection 114 117-119	field molecular analysis (F129L)

PYRNTR	TRZAX	Reimann S, Deising H B (2005). Inhibition of efflux mediated fungicide resistance in *Pyrenophora tritici-repentis* by a derivative of 4 ‘-hydroxyflavone and enhancement of fungicide activity. Applied and Environmental Microbiology 71, 3269-3275 FRAC	field field
RAMUCC	HORVX	FRAC 2006	field
RHYNSE	HORVX	FRAC 2008	field, single isolate, Picardie
SEPTTR	TRZAX	Amand O, Calay F, Coquillart L, Legat T, Bodson B, Moreau J-M, Maraite H (2003). First detection of resistance to QoI fungicides in *Mycosphaerella graminicola* on winter wheat in Belgium. Communications in Agricultural and Applied Biological Sciences 68, 519-531 Clark W (2005). QoI resistance in *Mycosphaerella graminicola* in the UK: implications for future use of QoI fungicides. Proceedings of the BCPC International Congress, Crop Science & Technology 283-290 Fraaije B A, Burnett F J, Clark W S, Motteram J, Lucas J A (2005). Resistance development to QoI inhibitors in populations of *Mycosphaerella graminicola* in the UK. In: Modern Fungicides and Antifungal Compounds IV. BCPC, Al; ton, UK pp. 63-72 Gisi U, Pavic L, Stanger C, Hugelshofer U, Sierotzki H (2005). Dynamics of *Mycosphaerella graminicola* populations in response to selection by different fungicides. In: Modern Fungicides and Antifungal Compounds IV. BCPC, Al; ton, UK pp. 89-102 Fraaije B A, Lucas J A (2003). QoI resistance development in populations of cereal pathogens in the UK. Proceedings of the BCPC International Congress – Crop Science & Technology 689 – 694 Hayes, L. E.; Zala, M.; Anderson, N. P.; Sackett, K. E.; Flowers, M.; McDonald, B. A.; Mundt, C. C. (2013). First report of resistance to QoI fungicides in North American populations of *Zymoseptoria tritici*, causal agent of septoria tritici blotch of wheat. Plant Disease, 97, Number 11, 1511 p	field field, review field field field field

*List of first confirmed cases of plant pathogenic organisms resistant to disease control agents. Revised May 2020. FRAC

3.3.4 Cross-resistance

Fungicides active at the same target site (i.e. that is within the same FRAC code # on the FRAC Code List) are generally considered to be cross-resistant to each other. Cross-resistance is a phenomenon that occurs when resistance arises to one fungicide that also results in resistance to another fungicide. Occasionally, cross-resistance can occur between compounds active at different target sites (see multi-drug resistance under mechanisms of resistance below). According to the FRAC, if field resistance is known to one member of a Group, it is most likely but not exclusively valid that cross resistance to other group members will be present.

The group of fungicides that comprise the Sterol Biosynthesis Inhibitor's (SBIs) inhibit the C14 de-methylation step within fungal sterol biosynthesis. Prothioconazole is a Class 1 SBI known as de-methylation inhibitors or DMIs. While compounds within each of the three code groups, G1 (DMIs), G2, (amines) and G3 (KRIs), are cross-resistant with other members within the same group, there is no cross-resistance between members of different groups. Chemically, DMIs belong to different chemical groups but all DMIs inhibit fungi by interacting with the same target site, C14-demethylase (erg11/cyp51) and are therefore considered to be cross-resistant with each other.
There are big differences in the activity spectra of DMI fungicides. Generally, it is wise to accept that cross-resistance is present between DMI fungicides active against the same fungus. DMI fungicides are Sterol Biosynthesis Inhibitors (SBIs), but no cross-resistance to other SBI classes are recorded. (FRAC[11]).

According to information presented in the paper by Cools et al., 2013[12] there are a number of cases of incomplete resistance among the DMI fungicides. Evidence of incomplete cross-resistance to prothio-conazole was recorded in *Rhynchosporium secalis* on barley. In this case positive cross-resistance between propiconazole, tebuconazole, epoxiconazole has been observed but prothioconazole remained effective. In this case the pathogen contained a 2nd CYP51 target gene. Similarly for *Pseudocerco-sporella herpotrichoides* R type and *Pseudocercosporella herpotrichoides* W type, an unknown mech-anism of resistance against many azoles is recorded but prothioconazole remained effective.

Nevertheless, for the purposes of maintaining efficacy in the future, resistance management strategies should be based on the proviso that cross resistance among DMI is likely.

Azoxystrobin is a member of the Group 11 fungicides and specifically a methoxy-acrylate. However, according to FRAC[13] cross resistance has been shown between all members of the Group 11 fungi-cides, although not to members of Group 11A, which are also QoI fungicides.

Hence, for the purposes of the risk assessment, cases of resistance to each respective group will be considered to be relevant for each active substance, unless specific evidence shows that resistance does not occur in that substance.

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[11] FRAC code list: Fungal control agents sorted by cross-resistance pattern and mode of action FRAC.2022.

[12] H. J. Cools, N. J. Hawkins & B. A. Fraaije. Constraints on the evolution of azole resistance in plant pathogenic fungi. Plant Pathology (2013) 62 (Suppl. 1), 36–42

[13] FRAC code list: Fungal control agents sorted by cross-resistance pattern and mode of action FRAC.2022.

3.3.5 Sensitivity data

PROTHIOCONAZOLE

Testing was undertaken in the CEU regulatory zone on the sensitivity of prothioconazole against two key pathogens - *Zymoseptoria tritici* and *Erysiphe graminis f.sp. tritici* on wheat and *Pyrenophora teres* on barley. The former is well known for the development of resistance against many fungicides including DMI fungicides. The latter has been selected as some cases are recorded for DMI fungicides, although this appears to be less established and sensitivity to prothioconazole is reportedly still maintained.

Group 3 fungicides have been in commercial use since 1970s and are widely used in Europe due to the relatively broad spectrum of activity against plant pathogens. For that reason, baseline sensitivity data is not reported here however standard isolates with DMI-sensitivity probably relatively close to the one of the unselected 'wild-type' population – were available for comparison by each of the laboratories which provided resistance testing for prothioconazole in 2020-2021.

Bioassay testing has been undertaken for prothioconazole against some of the target pathogens for which resistance has been reported. The testing was done according to All testing was done according to appropriate approved test methods as indicated in the study reports submitted.

In Germany testing was performed by Epilogic on *Zymoseptoria tritici* sampled from 16 locations and on *Pyrenophora teres* sampled from 10 locations in 2020 and on *Zymoseptoria tritici* sampled from 19 locations in 2021 and *Blumeria/Erysiphe graminis f.sp. tritici* from samples taken from 12 locations in 2021.

<u>Zymoseptoria tritici</u>

The data from Germany comprises results from 80 strains of *Zymoseptoria tritici* derived from the 16 sampling sites in 2020 and 76 strains from 19 locations in 2021. The test method was in vitro (microtiter) with test concentrations of 0.00, 0.03, 0.1, 0.3, 1.0, 3.0, 10.0, & 30.0 mg/l of prothioconazole.

<u>Results 2020</u>

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-1. The range of EC_{50} from the test samples was from 1.18 to 3.66 mg/l. The overall mean EC_{50} value from all regions was 2.14 mg/l.

As shown in Figure 3.3.5-1 below, the majority of results were for EC_{50} values between 1.88 and 2.18 mg/l.

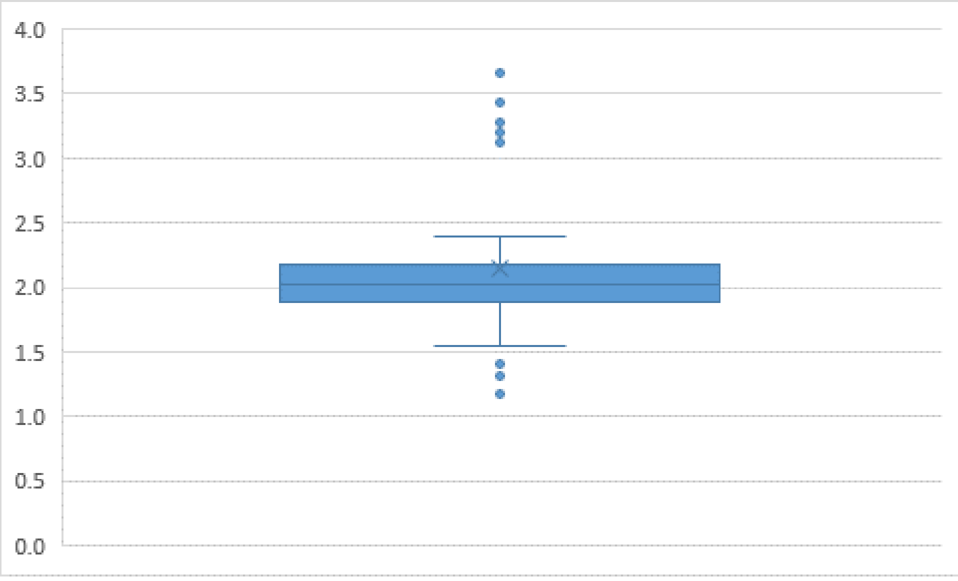

Figure 3.3.5-1: EC_{50} values (mg/l) for prothioconazole on *Zymoseptoria tritici* strains sampled from Germany in 2020

The mean EC_{50} of the reference strains known to be susceptible to DMI fungicides was reported to be 0.32 mg/l prothioconazole. This reference is therefore used as the "baseline" reference in this analysis. Clearly all samples were less sensitive to prothioconazole compared to the reference strains, however the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 5.10 (Reken, Nordrhein-Westfalen) to 7.78 (Pöhl, Sachsen; variety Chevignon) which is relatively low. According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). In fact, according to this paper pathogen strains with an RF value of 5 showed no difference in disease control compared to baseline populations

The diversity was low at 1.2 to 2.9 among the regions as shown in Figure 3.3.5-2 below.

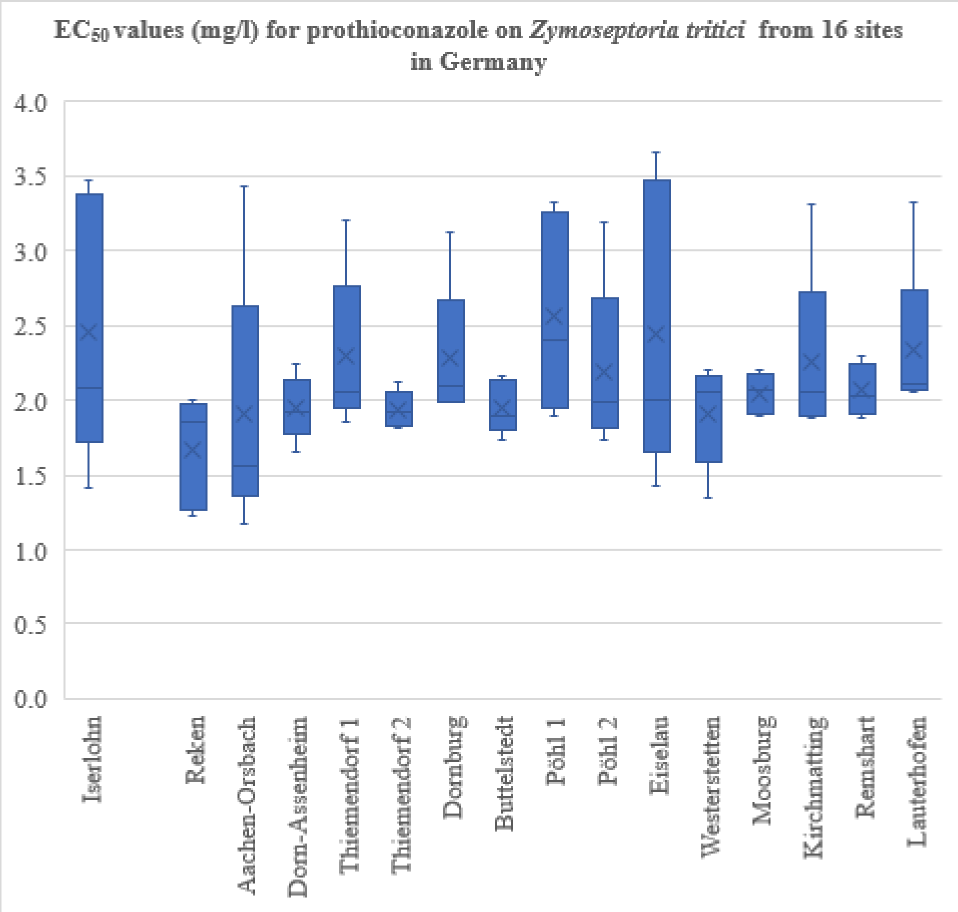

Figure 3.3.5-2: EC_{50} values (mg/l) for prothioconazole on *Zymoseptoria tritici* strains sampled from Germany in 2020

<u>Results 2021</u>

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-2. The range of EC_{50} from the test samples was from 1.74 to 5.48 mg/l. The overall mean EC_{50} value from all regions was 2.85 mg/l.

As shown in Figure 3.3.5-3 below, the majority of results were for EC_{50} values between 2.24 and 3.42 mg/l.

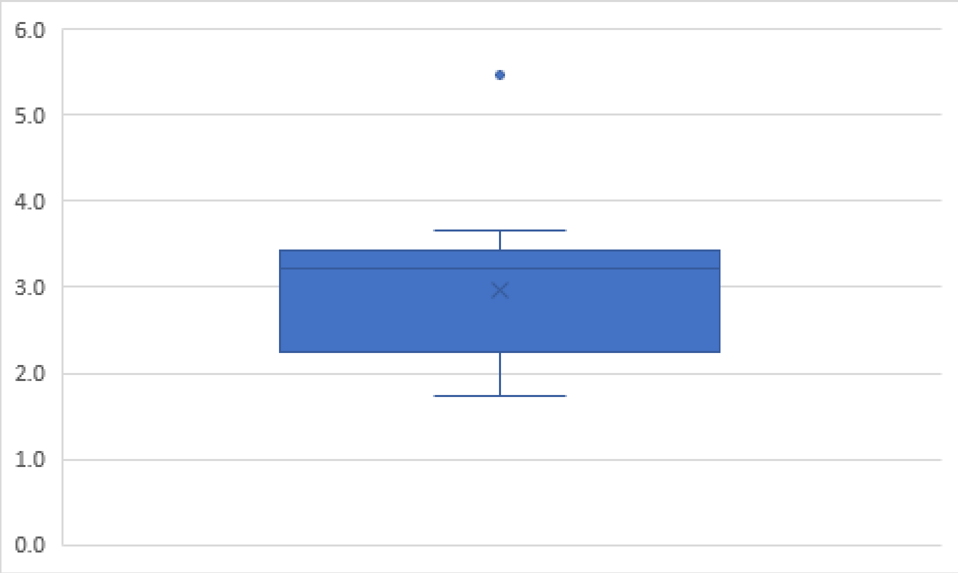

Figure 3.3.5-3: EC_{50} values (mg/l) for CA3301 on *Zymoseptoria tritici* strains sampled from Germany in 2021

The mean EC_{50} of the reference strains known to be susceptible to DMI fungicides was reported to be 0.35 mg/l prothioconazole. This reference is therefore used as the “baseline” reference in this analysis. Clearly all samples were less sensitive to prothioconazole compared to the reference strains, however the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 6.3 (Damendorf) to 10.9 (Seenheim) which is relatively low.

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). In fact, according to this paper pathogen strains with an RF value of 5 showed no difference in disease control compared to baseline popula-tions.

The diversity was low at 1.0 to 2.5 among the regions as shown in Figure 3.3.5-4below.

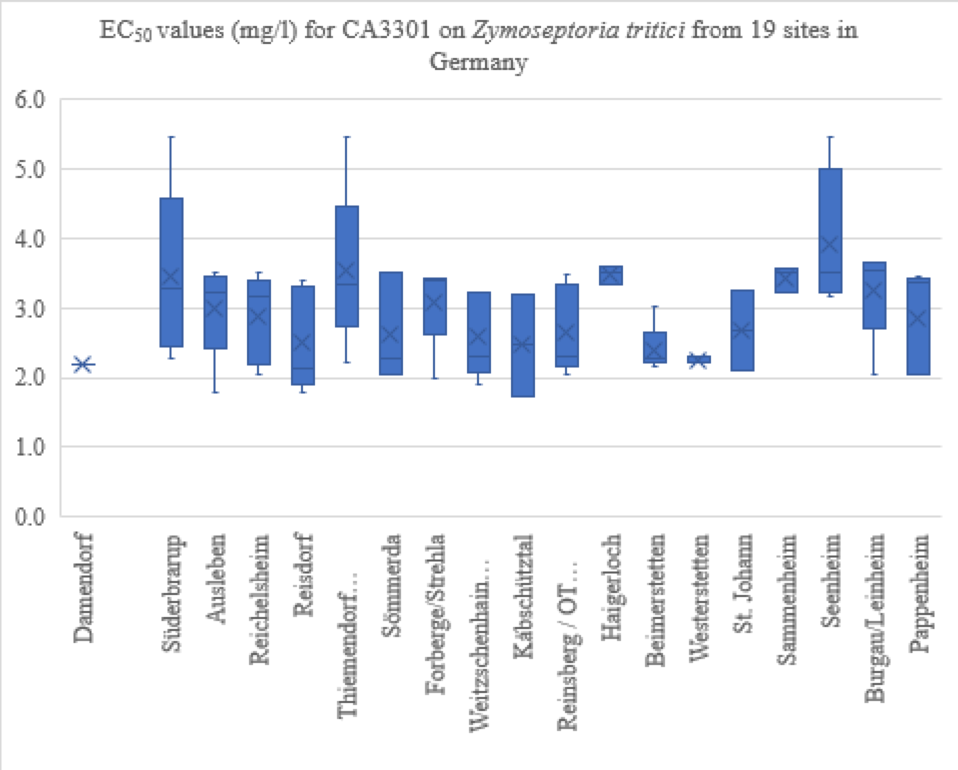

Figure 3.3.5-4: EC_{50} values (mg/l) for CA3301 on *Zymoseptoria tritici* strains sampled from Germany in 2021

Conclusion on *Zymoseptoria tritici* in Germany

The data from the samples indicates that most strains of *Zymoseptoria tritici* are still sensitive to prothioconazole, indeed even the least sensitive strain in 2020 with an EC_{50} value of 3.66 mg/l has a Resistance Factor of only 11.4, and for 2021 the least sensitive strain has an EC_{50} value of 5.48 mg/l and an RF value of 15.7. This contrasts with some of the data reported for other DMI fungicides for example for mefentrifluconazole and tebuconazole (Kiiker *et al*., 2021[14]) and for epoxiconazole and tebuconazole (Mae *et al*., 2020[15]) in other parts of Europe, where RF values were much higher. However, in these papers also it is indicated that sensitivity of *Zymoseptoria tritici* is higher for prothioconazole than some of the other DMI fungicides.

A slight overall increase in EC_{50} values was observed between 2020 and 2021 although in the latter results the sensitive reference strain was also higher. Resistance Factor values showed some increase compared to the previous years' samples but still remained relatively low.

In addition, the low diversity factors for the regions across both years suggest that at present the populations remain relatively stable in terms of sensitivity towards prothioconazole.

The data therefore appears to support results from the efficacy trials presented in this dossier demonstrating that prothioconazole remains effective against *Zymoseptoria tritici*.

[14] Kiiker, R.; Juurik, M.; Heick, T.M.; Mäe, A. Changes in DMI, SDHI, and QoI Fungicide Sensitivity in the Estonian Zymoseptoria tritici Population between 2019 and 2020. Microorganisms 2021, 9, 81

[15] Mae, A. ; Fillinger, S. ; Sooväli, P ; Heick, T. Fungicide Sensitivity Shifting of Zymoseptoria tritici in the Finnish-Baltic Region and a Novel Insertion in the MFS1 Promoter. Front. Plant Sci., 15 April 2020

Table 3.3.5-1: Sensitivity (EC_{50} + EC_{98} in mg/l a.i.) of *Septoria tritici* in field samples from Germany towards prothioconazole (CA3301), 2020

Region	Variety	Date	n	MEC_{50}	Mean RF*	EC_{50} min	EC_{50} max	Diversity factor	MEC_{98}	EC_{98} min	EC_{98} max
Iserlohn, Nordrhein-Westfalen	Alexander	08/06/20	5	**2.33**	*7.3*	1.41	3.47	*2.5*	**10.66**	9.07	14.72
Reken, Nordrhein-Westfalen	Rubisko	10/06/20	5	**1.63**	*5.1*	1.23	2.00	*1.6*	**10.75**	9.47	13.09
Aachen-Orsbach, Nordrhein-Westfalen	Meister	18/06/20	5	**1.78**	*5.6*	1.18	3.43	*2.9*	**8.90**	7.66	10.36
Dorn-Assenheim, Hessen	Akteur	16/06/20	5	**1.94**	*6.1*	1.66	2.25	*1.4*	**9.94**	8.36	11.42
Thiemendorf, Thüringen	Compesino	07/07/20	5	**2.25**	*7.0*	1.86	3.21	*1.7*	**10.06**	8.85	12.00
Thiemendorf, Thüringen	Emmerich	07/07/20	5	**1.93**	*6.0*	1.82	2.12	*1.2*	**9.63**	8.46	10.85
Dornburg, Thüringen	Tobak	06/05/20	5	**2.25**	*7.0*	1.98	3.13	*1.6*	**10.21**	8.64	11.41
Buttelstedt, Thüringen	unknown	06/05/20	5	**1.94**	*6.1*	1.73	2.16	*1.2*	**10.02**	8.94	11.19
Pöhl, Sachsen	Chevignon	07/07/20	5	**2.49**	*7.8*	1.89	3.33	*1.8*	**10.04**	8.76	12.48
Pöhl, Sachsen	Asory	07/07/20	5	**2.14**	*6.7*	1.73	3.19	*1.8*	**9.59**	8.52	11.00
Eiselau, Baden-Württemberg	Genius	23/06/20	5	**2.30**	*7.2*	1.43	3.66	*2.6*	**10.53**	9.04	14.54
Westerstetten, Baden-Württemberg	Reform	23/06/20	5	**1.88**	*5.9*	1.34	2.20	*1.6*	**10.81**	9.43	12.95
Moosburg, Bayern	JB Asano	08/06/20	5	**2.04**	*6.4*	1.90	2.20	*1.2*	**10.36**	9.71	11.20
Kirchmatting, Bayern	JB Asano	11/06/20	5	**2.20**	*6.9*	1.88	3.30	*1.8*	**9.97**	9.11	10.77
Remshart, Bayern	Spontan	14/06/20	5	**2.06**	*6.4*	1.88	2.30	*1.2*	**10.47**	9.48	12.02
Lauterhofen, Bayern	Reform	05/07/20	5	**2.30**	*7.2*	2.06	3.33	*1.6*	**10.32**	9.17	10.85
Standard isolates											
DMI sensitive isolates	-	-	5	**0.32**	-	0.17	0.50	-	**1.11**	0.83	2.32

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = min EC_{50}/ max EC_{50}

Table 3.3.5-2: Sensitivity (EC_{50} + EC_{98} in mg/l a.i.) of *Septoria tritici* in field samples from Germany towards prothioconazole (CA3301), 2021

Region	Variety	Date	n	MEC_{50}	Mean RF*	EC_{50} min	EC_{50} max	Diversity factor	MEC_{98}	EC_{98} min	EC_{98} max
Damendorf	Tobak	05/07/21	1	2.19	6.3	-	-		11.05		
Süderbrarup	unknown	07/07/21	5	3.30	9.4	2.28	5.48	2.4	9.35	7.23	11.60
Ausleben	unknown	07/07/21	5	2.91	8.3	1.79	3.52	2.0	9.03	8.44	9.68
Reichelsheim	Akteur	28/06/21	5	2.82	8.1	2.05	3.52	1.7	10.02	8.76	12.32
Reisdorf	Meister	27/04/21	5	2.43	6.9	1.78	3.40	1.9	9.73	8.78	11.14
Thiemendorf/Heideland	Akteur	30/06/21	5	3.40	9.7	2.21	5.48	2.5	9.64	8.94	11.35
Sömmerda	Akteur	09/07/21	3	2.54	7.3	2.04	3.51	1.7	10.63	9.65	11.66
Forberge/Strehla	Tobak	22/06/21	5	3.03	8.7	1.98	3.42	1.7	9.44	8.92	10.10
Weitzschenhain/Lommatzsch	Akteur	22/06/21	5	2.52	7.2	1.89	3.23	1.7	10.27	8.89	12.39
Käbschütztal	Akteur	08/07/21	2	2.36	6.7	1.74	3.21	1.8	8.89	8.85	8.93
Reinsberg / OT Hirschfeld	Asory	08/07/21	5	2.60	7.4	2.05	3.47	1.7	10.49	8.80	11.96
Haigerloch	Boss	16/07/21	3	3.48	9.9	3.33	3.59	1.1	9.57	9.19	9.87
Beimerstetten	Pep	20/07/21	5	2.39	6.8	2.16	3.02	1.4	13.28	11.06	22.24
Westerstetten	Reform	20/07/21	3	2.25	6.4	2.21	2.30	1.0	11.48	11.22	12.02
St. Johann	Jubilo	26/07/21	2	2.61	7.5	2.09	3.27	1.6	9.83	9.02	10.72
Sammenheim	Reform	04/07/21	3	3.44	9.8	3.24	3.56	1.1	9.46	8.94	9.78
Seenheim	Emerick	04/07/21	4	3.83	10.9	3.17	5.48	1.7	9.35	8.76	9.92
Burgau/Leinheim	Patras	26/07/21	5	3.19	9.1	2.05	3.67	1.8	9.95	9.31	10.64
Pappenheim	Informer	26/07/21	5	2.78	7.9	2.05	3.46	1.7	9.72	9.25	10.46
Standard isolates											
DMI sensitive isolates	-	-	4	0.35	-	0.17	0.65	-	1.70	0.81	3.26

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC50/ min EC50

Pyrenophora teres

The data comprises results from 49 isolates of *Pyrenophora teres* derived from the 10 sampling sites. Of these sets of data, 9 sites used airborne sampling and at 1 site field samples were taken. The test method was *in vitro* (microtiter) with test concentrations of 0.00, 0.03, 0.1, 0.3, 1.0, 3.0, 10.0, & 30.0 mg/l of prothioconazole.

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-3. The range of EC_{50} from the test samples was from 0.96 to 8.62 mg/l. The overall mean EC_{50} value from all regions was 3.74 mg/l.

As shown in Figure 3.3.5-5 below, the majority of results were for EC_{50} values between 2.07 and 5.45 mg/l.

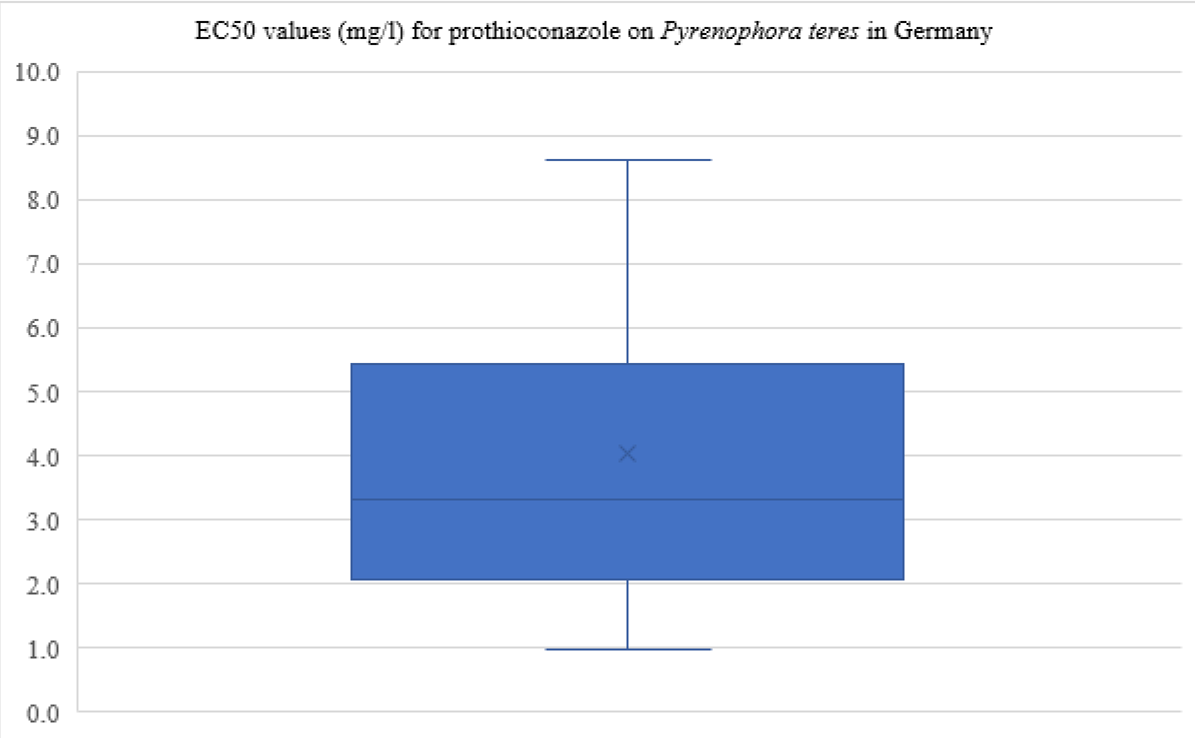

Figure 3.3.5-5: EC_{50} values (mg/l) for prothioconazole on *Pyrenophora teres* strains sampled from Germany in 2020

The mean EC_{50} of the reference strains which have no mutation and are susceptible to DMI fungicides was reported to be 0.47 mg/l. This reference is therefore used as the “baseline” reference in this analysis.

Clearly all samples were less sensitive to prothioconazole compared to the reference strains, however the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 4.28 (Schweinfurt-Rothenburg) to 12.36 (Greifswald-Neubrandenburg) which is relatively low.

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). In fact, according to this paper pathogen strains with an RF value of 5 showed no difference in disease control compared to baseline populations.

The diversity factor (EC_{50} max/ EC_{50} min) was highest in the Oldenburg i.H.-Hamburg region at 4.4, showing more variability among the samples than in other regions. In the field sample (2.7) diversity was relatively low and in the other regions also at 1.8 to 3.5. This is also presented in Figure 3.3.5-6 below.

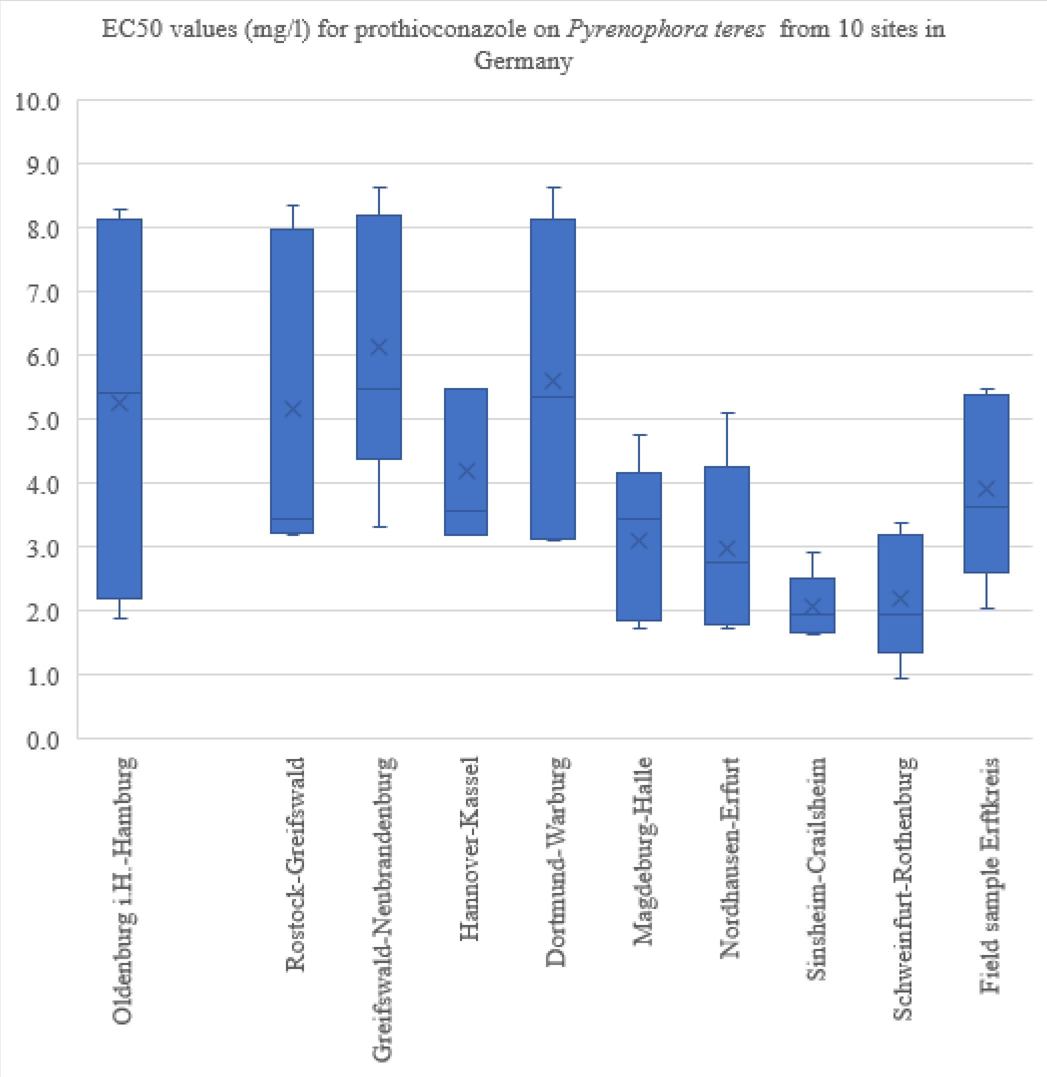

Figure 3.3.5-6: EC_{50} values (mg/l) for prothioconazole on *Pyrenophora teres* strains from 10 sites in Germany in 2020

Conclusion on *Pyrenophora teres* in Germany

The data from the samples indicates that most strains of *Pyrenophora teres* are still sensitive to prothioconazole, indeed even the least sensitive strain with an EC_{50} value of 8.62 mg/l has a Resistance Factor of only 18.3.

In addition, the low diversity factors for the regions (1.8 - 4.4) suggest that at present the populations remain relatively stable in terms of sensitivity. The data from these samples reinforces the fact that there has been very limited reporting of resistance to this pathogen for DMI fungicides and none currently recorded by EPPO for the CEU area.

The data therefore appears to support results from the efficacy trials presented in this dossier demonstrating that prothioconazole is effective against *Pyrenophora teres*.

Table 3.3.5-3: Sensitivity (EC_{50} + EC_{98} in mg/l a.i.) of *Pyrenophora teres* (net blotch in barley) in airborne samples (EpiLogic) and 1 field sample (joint/shared FRAC collection) from different cereal growing areas in Germany towards prothioconazole (CA3301), 2021

Region	Code	Date	n	MEC_{50}	Mean RF*	EC_{50} min	EC_{50} max	Diversity factor	MEC_{98}	EC_{98} min	EC_{98} max
Airborne samples											
Oldenburg i.H.-Hamburg	D 26	06/07/21	4	**4.42**	*9.4*	1.88	8.28	*4.4*	**14.33**	8.85	22.76
Rostock-Greifswald	D 31	07/07/21	5	**4.69**	*10.0*	3.19	8.36	*2.6*	**12.91**	8.80	22.98
Greifswald-Neubrandenburg	D 32	07/07/21	5	**5.81**	*12.4*	3.33	8.62	*2.6*	**15.95**	9.17	23.83
Hannover-Kassel	D 9	09/06/21	5	**4.06**	*8.6*	3.21	5.48	*1.7*	**9.23**	8.85	9.84
Dortmund-Warburg	D 22	06/07/21	5	**5.12**	*10.9*	3.09	8.62	*2.8*	**19.39**	8.85	25.27
Magdeburg-Halle	D 8	09/06/21	5	**2.89**	*6.2*	1.74	4.75	*2.7*	**11.01**	8.31	20.82
Nordhausen-Erfurt	D 6	09/06/21	5	**2.74**	*5.8*	1.73	5.10	*2.9*	**10.43**	7.66	21.77
Sinsheim-Crailsheim	D 15	28/06/21	5	**2.02**	*4.3*	1.64	2.93	*1.8*	**8.93**	8.00	11.13
Schweinfurt-Rothenburg	D 2	03/06/21	5	**2.01**	*4.3*	0.96	3.39	*3.5*	**8.86**	8.41	9.39
	Field sample										
Erftkreis	Dt-FRAC-021	15/06/21	5	**3.68**	*7.8*	2.03	5.48	*2.7*	**11.38**	8.78	22.35
Standard isolates											
DMI sensitive isolates	EL1, EL2	-	2	**0.47**	-	0.46	0.49	-	**5.55**	5.33	5.78

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC50/ min EC50

Blumeria/Erysiphe graminis* f. sp. *tritici

The data from Germany comprises results from 50 strains of *Erysiphe graminis* f.sp. *tritici* derived from the 12 sampling sites in 2021. The test method was bioassay with single colony isolates (= single spore progeny), in vivo, detached leaves, whole (intact) plants treated; test variety: 'Kanzler'. The test concentrations were 0.00, 0.32, 0.64, 1.28, 2.56, 5.12, 10.24, 20.48, 40.96 & 81.92 mg/l of prothioconazole.

Information on the samples and the mean, minimum and maximum EC_{50} values are presented in Table 3.3.5-4. The range of EC_{50} from the test samples was from 2.78 to 5.85 mg/l. The overall mean EC_{50} value from all regions was 5.25 mg/l.

As shown in Figure 3.3.5-7 below, the majority of results were for EC_{50} values between 3.93 and 6.38 mg/l.

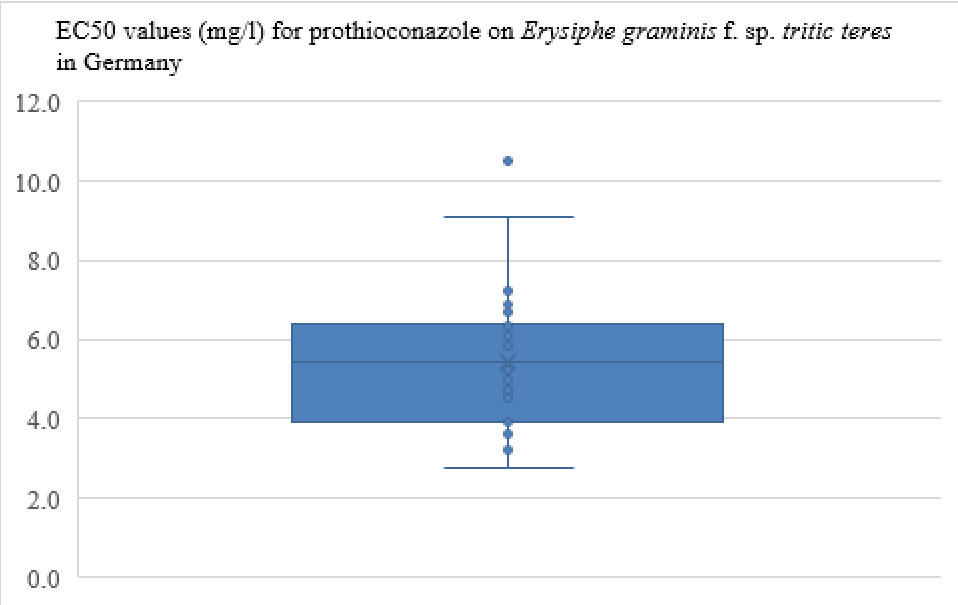

Figure 3.3.5-7: EC_{50} values (mg/l) for prothioconazole on *Erysiphe graminis* f. sp. *tritici* strains sampled from Germany in 2021

The mean EC_{50} of the reference strains known to be susceptible to DMI fungicides was reported to be 0.77 mg/l prothioconazole. This reference is therefore used as the "baseline" reference in this analysis. Clearly all samples were less sensitive to prothioconazole compared to the reference strains, however the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 5.0 (Bernburg, Sachsen-Anhalt) to 8.4 (Rendsburg-Eckernförde, Schleswig-Holstein) which is relatively low. According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). In fact, according to this paper pathogen strains with an RF value of 5 showed no difference in disease control compared to baseline populations.

The diversity factor (EC_{50} max/ EC_{50} min) was highest in the Saale-Holzland-Kreis, Thüringen region at 3.78, with much greater variability among the samples than in other regions as shown in Figure 6.3.8 below. The other sample from the Thüringen region (Sömmerda) had a lower (2.17) diversity and in the other regions also as it ranged from 1.24 to 2.52.

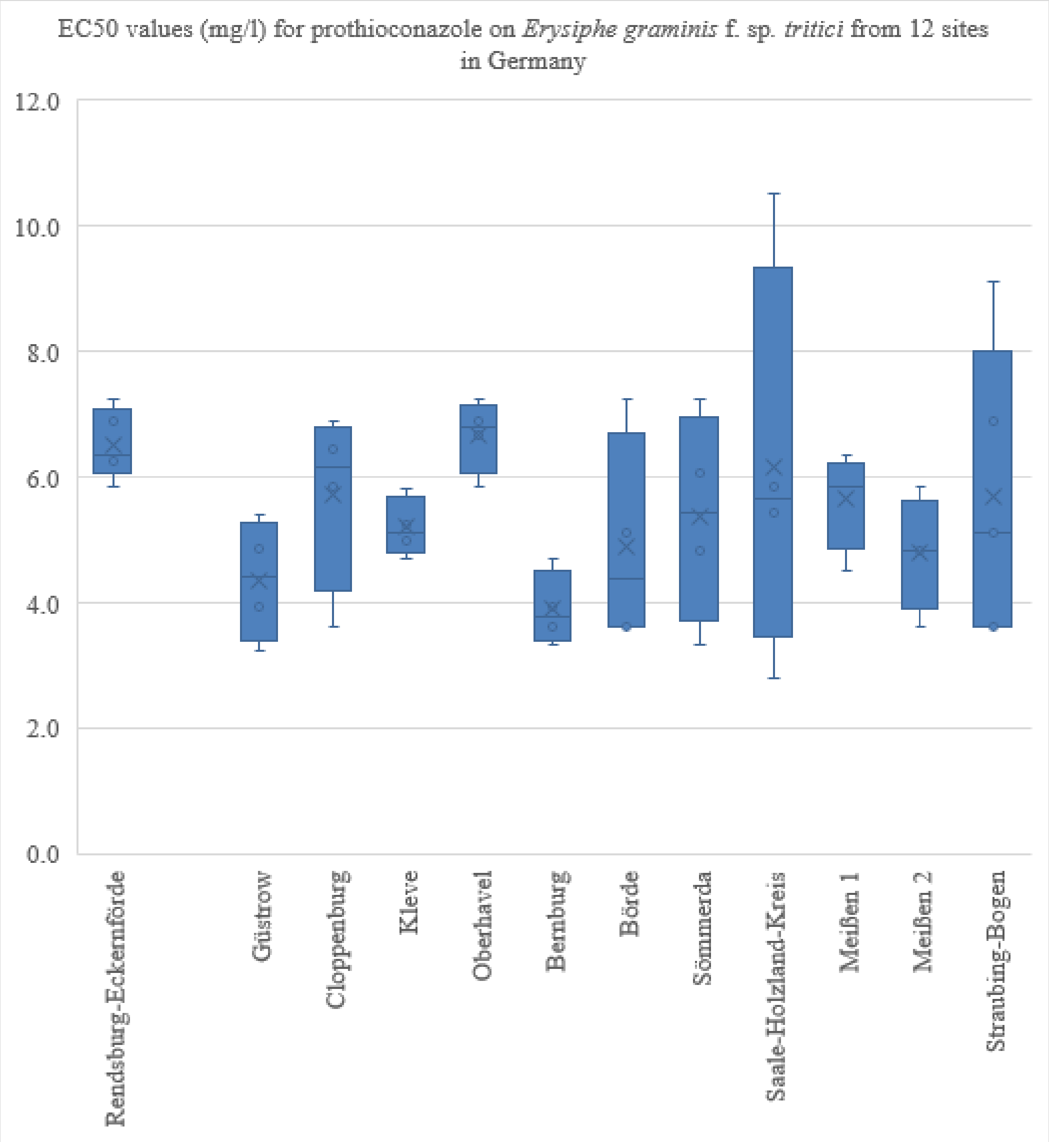

Figure 3.3.5-8: EC_{50} values (mg/l) for prothioconazole on *Erysiphe* graminis f.sp. *tritici* strains from 12 sites in Germany in 2021

<u>Conclusion on *Erysiphe graminis* f.sp. *tritici* in Germany</u>

The data from the samples indicates that most strains of *Erysiphe graminis* f.sp. *tritici* are still sensitive to prothioconazole, indeed even the least sensitive strain with an EC_{50} value of 10.5 mg/l has a Resistance Factor of only 13.6.

In addition, the low diversity factors for the regions (1.2 – 3.8) suggest that at present the populations remain relatively stable in terms of sensitivity. The data from these samples reinforces the limited reporting of resistance to this pathogen for prothioconazole as there are none currently recorded by EPPO for the CEU area, and also the observation by FRAC that resistance does not seem to be established across the whole Group 3 fungicides in this pathogen.

The data therefore appears to support results from the efficacy trials presented in this dossier demonstrating that prothioconazole remains effective against *Erysiphe graminis* f.sp. *tritici*.

Table 3.3.5-4: Sensitivity (EC_{50} + EC_{98} in mg/l a.i.) of *Erysiphe graminis f.sp. tritici* in field samples from Germany towards prothioconazole (CA3301), 2021

Region	**Date**	**n**	**MEC_{50}**	***Mean RF****	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Rendsburg-Eckernförde, Schleswig-Holstein	05/07/21	5	6.50	*8.4*	5.85	7.24	*1.24*
Güstrow, Mecklenburg-Vorpommern	14/06/21	4	4.27	*5.5*	3.23	5.39	*1.67*
Cloppenburg, Niedersachsen	14/06/21	4	5.54	*7.2*	3.62	6.91	*1.91*
Kleve, Nordrhein-Westfalen	08/06/21	4	5.18	*6.7*	4.71	5.82	*1.24*
Oberhavel, Brandenburg	27/04/21	4	6.65	*8.6*	5.85	7.24	*1.24*
Bernburg, Sachsen-Anhalt	01/06/21	4	3.87	*5.0*	3.33	4.71	*1.41*
Börde, Sachsen-Anhalt	07/07/21	4	4.70	*6.1*	3.62	7.24	*2.00*
Sömmerda, Thüringen	09/07/21	4	5.15	*6.7*	3.33	7.24	*2.17*
Saale-Holzland-Kreis, Thüringen	12/07/21	4	5.52	*7.2*	2.78	10.50	*3.78*
Meißen, Sachsen	21/06/21	4	5.60	*7.3*	4.51	6.36	*1.41*
Meißen, Sachsen	22/06/21	4	4.72	*6.1*	3.62	5.85	*1.62*
Straubing-Bogen, Bayern	22/06/21	5	5.31	*6.9*	3.62	9.11	*2.52*
		50					
Standard isolates							
DMI sensitive isolates S 1 + S 2	1970s	2	**0.77**	-	0.65	0.91	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

AZOXYSTROBIN

Testing was undertaken in the CEU regulatory zone on the sensitivity of azoxystrobin against a range of target pathogens from 2016 to 2020.

Group 11 fungicides have been in commercial use since 1990s and are widely used in Europe due to the relatively broad spectrum of activity against plant pathogens. For that reason, baseline sensitivity data is not reported here however standard reference isolates with QoI-sensitivity were available for comparison by the laboratory for some of the pathogens.

Bioassay testing has been undertaken for azoxystrobin by Epilogic from samples taken from a range of locations in Germany. All testing was done according to appropriate approved test methods as indicated in the study reports submitted.

Sensitivity data is presented on *Puccinia hordei, Puccinia triticina, Puccinia striiformis f. sp. tritici, Pyrenophora teres* and *Pyrenophora tritici-repentis*.

Puccinia hordei

Testing was performed on *Puccinia hordei* from samples from 10 sites in 2017 and 10 sites in 2020.

The data comprises results from 50 isolates derived from the 10 sampling sites in each year. The samples were primarily from airborne sampling with 1 field sample also used in 2020. The test method was bioassay with single colony isolates. test method: in vivo, detached leaves, whole (intact) plants treated in vitro (microtiter). The test concentrations were 0.000, 0.001, 0.003, 0.01, 0.03, 0.1, 0.3, 1.0, 3.0, 10.0, & 30.0 mg/l of azoxystrobin. The barley test variety used was Igri in both years.

Results 2017

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-5. The range of EC_{50} from the test samples was from 0.009 to 0.031 mg/l. The overall mean EC_{50} value from all regions was 0.017 mg/l.

As shown in Figure 3.3.5-9 below, the majority of results were for EC_{50} values between 0.014 and 0.018 mg/l.

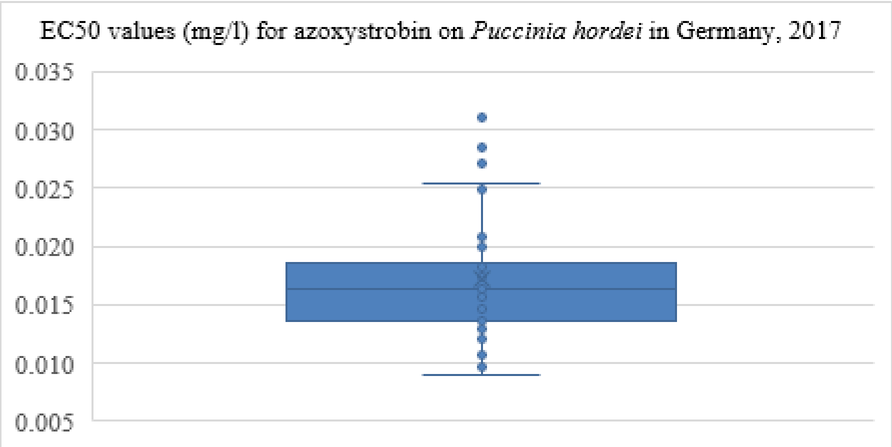

Figure 3.3.5-9: EC_{50} values (mg/l) for azoxystrobin on *Puccinia hordei* strains from all sites in Germany in 2017

No sensitive reference strains were available for comparison to the sampled strains for this pathogen, therefore it is not possible to calculate Resistance factors.

The diversity factor (EC_{50} max/ EC_{50} min) was low across each of the regions sampled. The greatest variability was from the regions of Eckernförde-Kiel-Oldenburg i.H, Oldenburg i.H.-Hamburg, and Leipzig-Dresden as also presented in Figure 3.3.5-10 below.

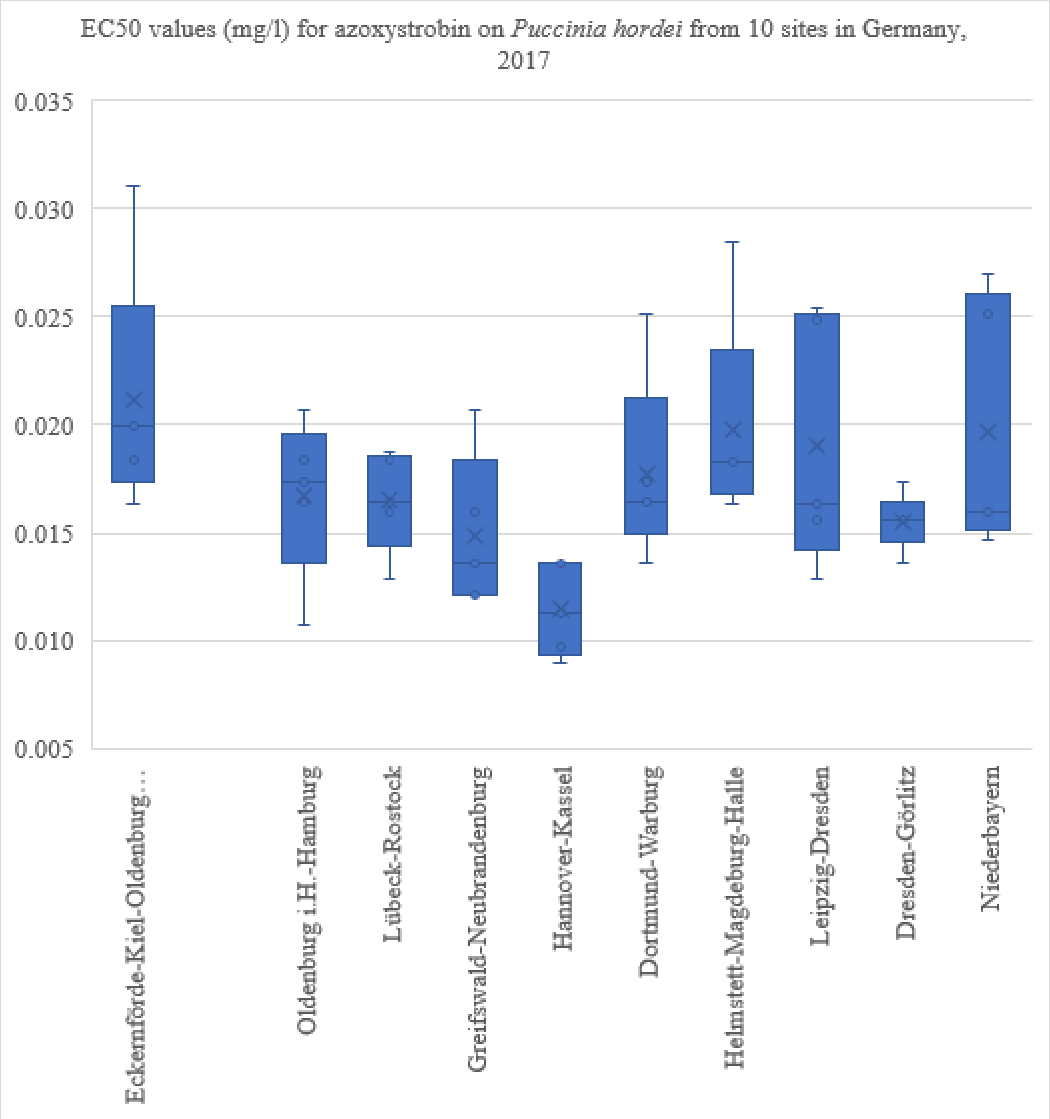

Figure 3.3.5-10: EC_{50} values (mg/l) for azoxystrobin on *Puccinia hordei* strains from 10 sites in Germany in 2017

Table 3.3.5-5: Sensitivity (EC_{50} in mg/l a.i.) of *Puccinia hordei* in samples from Germany towards azoxystrobin, 2017

Region	**Date**	**n**	**MEC_{50}**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Eckernförde-Kiel-Oldenburg i.H.	28/06/17	5	0.021	0.016	0.031	***1.94***
Oldenburg i.H.-Hamburg	28/06/17	5	0.016	0.011	0.021	***1.91***
Lübeck-Rostock	28/06/17	5	0.016	0.013	0.019	***1.46***
Greifswald-Neubrandenburg	28/06/17	5	0.015	0.012	0.021	***1.75***
Hannover-Kassel	10/06/17	5	0.011	0.009	0.014	***1.56***
Dortmund-Warburg	28/06/17	5	0.017	0.014	0.025	***1.79***
Helmstett-Magdeburg-Halle	10/06/17	5	0.019	0.016	0.028	***1.75***
Leipzig-Dresden	24/06/17	5	0.018	0.013	0.025	***1.92***
Dresden-Görlitz	24/06/17	5	0.015	0.014	0.017	***1.21***
Niederbayern	26/06/17	5	0.019	0.015	0.027	***1.80***
Among isolates	2017	50	0.017	0.009	0.031	***3.4***
				MEC_{50}min	**MEC_{50}max**	
Among sites (samples)	2017	10		0.011	0.021	***1.9***

Diversity factor = max EC_{50}/ min EC_{50}

Results 2020

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-6. The range of EC_{50} from the test samples was from 0.008 to 0.036 mg/l. The overall mean EC_{50} value from all regions was 0.018 mg/l.

As shown in Figure 3.3.5-11 below, the majority of results were for EC_{50} values between 0.015 and 0.022 mg/l.

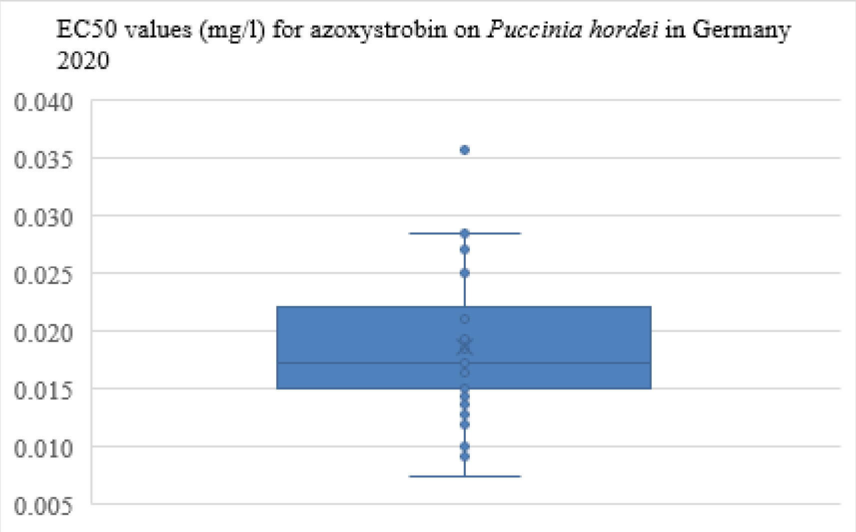

Figure 3.3.5-11: EC_{50} values (mg/l) for azoxystrobin on *Puccinia hordei* strains from all sites in Germany in 2020

No sensitive reference strains were available for comparison to the sampled strains for this pathogen, therefore it is not possible to calculate Resistance factors. However, the values from the samples from 2020 are very comparable to the results from 2017, with a mean EC_{50} value from all regions of 0.017 in 2017 and 0.018 in 2020, and ranges of 0.009 to 0.031 mg/l in 2017 and 0.008 to 0.036 in 2020. Hence the data indicates that there appears to be little shift in sensitivity over the 3 years.

The diversity factor (EC_{50} max/ EC_{50} min) was again low across each of the regions sampled ranging from 1.56 to 2.31. The greatest variability was from the regions of Rostock-Greifswald, Dortmund-Warburg, Speyer-Bingen-Kaiserslautern and Crailsheim-Nürnberg-Freising as also presented in Figure 6.3.12 below.

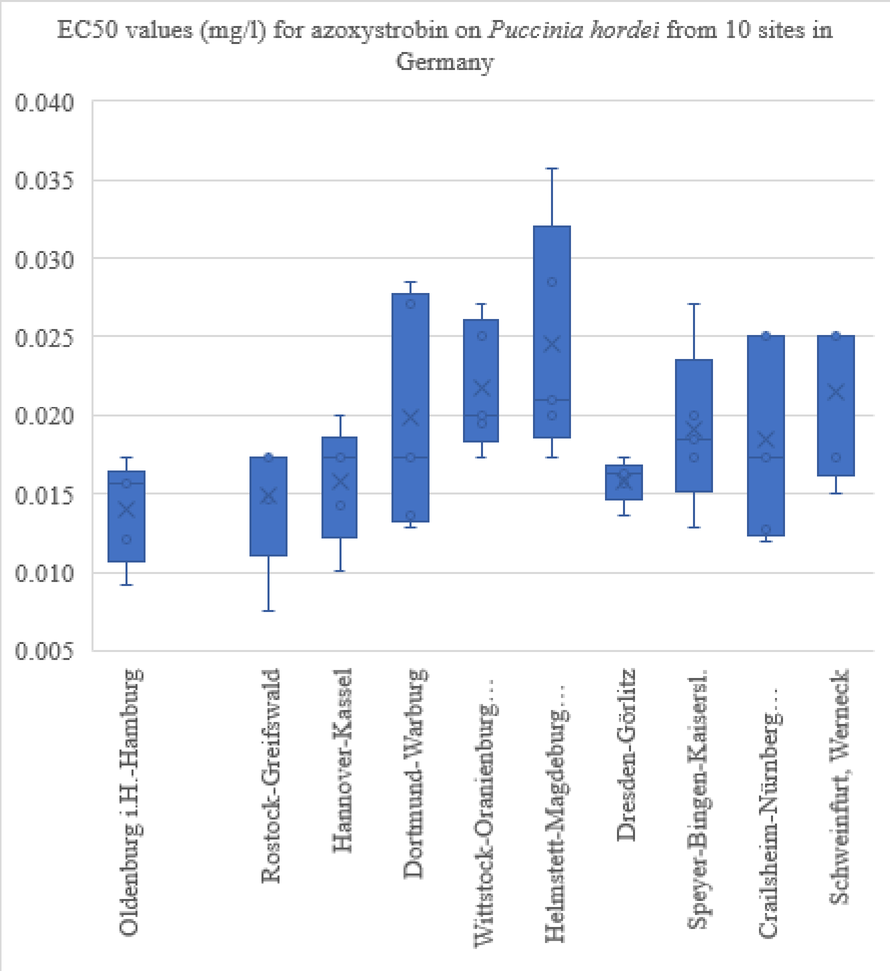

Figure 3.3.5-12: EC_{50} values (mg/l) for azoxystrobin on *Puccinia hordei* strains from 10 sites in Germany in 2020

<u>Conclusion on *Puccinia hordei* in Germany</u>

The data from the samples indicates that strains of *Puccinia hordei* remain sensitive to azoxystrobin, and there is little indication of a shift in sensitivity.

The data from these samples reinforces the fact that only 1 isolated case in the UK has been reported with a low resistance factor and no impact on field performance, and also the observations by FRAC that field performance remains good for QoI fungicides against this pathogen.

The data therefore appears to support results from the efficacy trials presented in this dossier demonstrating that azoxystrobin remains effective against *Puccinia hordei*.

Table 3.3.5-6: Sensitivity (EC_{50} in mg/l a.i.) of *Puccinia hordei* in samples from Germany towards azoxystrobin, 2020

Region	**Date**	**n**	**MEC_{50}**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Airborne samples						
Oldenburg i.H.-Hamburg	07/07/20	5	0.014	0.009	0.017	***1.89***
Rostock-Greifswald	07/07/20	5	0.014	0.008	0.017	***2.31***
Hannover-Kassel	09/06/20	5	0.015	0.010	0.020	***1.98***
Dortmund-Warburg	06/07/20	5	0.019	0.013	0.028	***2.21***
Wittstock-Oranienburg-Potsdam	07/07/20	5	0.021	0.017	0.027	***1.56***
Helmstett-Magdeburg-Halle	09/06/20	5	0.024	0.017	0.036	***2.06***
Dresden-Görlitz	30/06/20	5	0.016	0.014	0.017	***1.28***
Speyer-Bingen-Kaiserslautern	28/06/20	5	0.019	0.013	0.027	***2.10***
Crailsheim-Nürnberg-Freising	03/06/20	5	0.018	0.012	0.025	***2.10***
Field sample						
Schweinfurt, Werneck	16/06/20	5	0.021	0.015	0.025	***1.67***
Among isolates	2020	50	0.018	0.008	0.036	***4.5***
				MEC_{50}min	**MEC_{50}max**	
Among sites (samples)	2020	10		0.014	0.024	***1.7***

Diversity factor = max EC_{50}/ min EC_{50}

Puccinia triticina

Testing was performed on *Puccinia triticina* from samples from 8 sites in 2016 and 10 sites in 2020.

The data comprises results from 40 isolates from 2016 and 50 isolates from 2020. The samples were primarily from airborne sampling with 2 field samples also used in 2020. The test method was bioassay with single colony isolates. test method: in vivo, detached leaves, whole (intact) plants treated. In 2016 the test concentrations were 0.0000, 0.0025, 0.005, 0.01, 0.02, 0.04, 0.08, 0.16, 0.32, 0.63, & 1.25 mg/l of azoxystrobin. In 2020 the test concentrations were 0.000, 0.001, 0.003, 0.01, 0.03, 0.1, 0.3, 1.0, 3.0, 10.0, & 30.0 mg/l of azoxystrobin. The barley test variety used was Kanzler in both years.

<u>Results 2016</u>

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-7. The range of EC_{50} from the test samples was from 0.010 to 0.021 mg/l. The overall mean EC_{50} value from all regions was 0.015 mg/l.

As shown in Figure 3.3.5-13 below, the majority of results were for EC_{50} values between 0.013 and 0.017 mg/l.

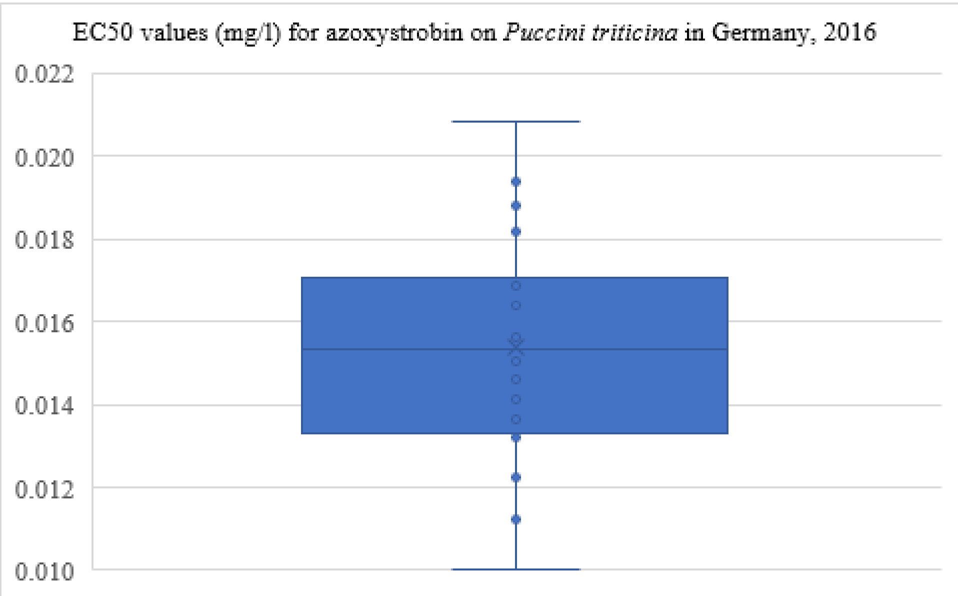

Figure 3.3.5-13: EC_{50} values (mg/l) for azoxystrobin on *Puccinia hordei* strains from all sites in Germany in 2016

No sensitive reference strains were available for comparison to the sampled strains for this pathogen, therefore it is not possible to calculate Resistance factors.

The diversity factor (EC_{50} max/ EC_{50} min) was very low at <2 across each of the regions sampled as also presented in Figure 3.3.5-14 below. In addition, diversity among the different samples (sites) was low at 1.3 showing comparability of the populations from different regions. The diversity factor among all of the isolates was also low at 2.1.

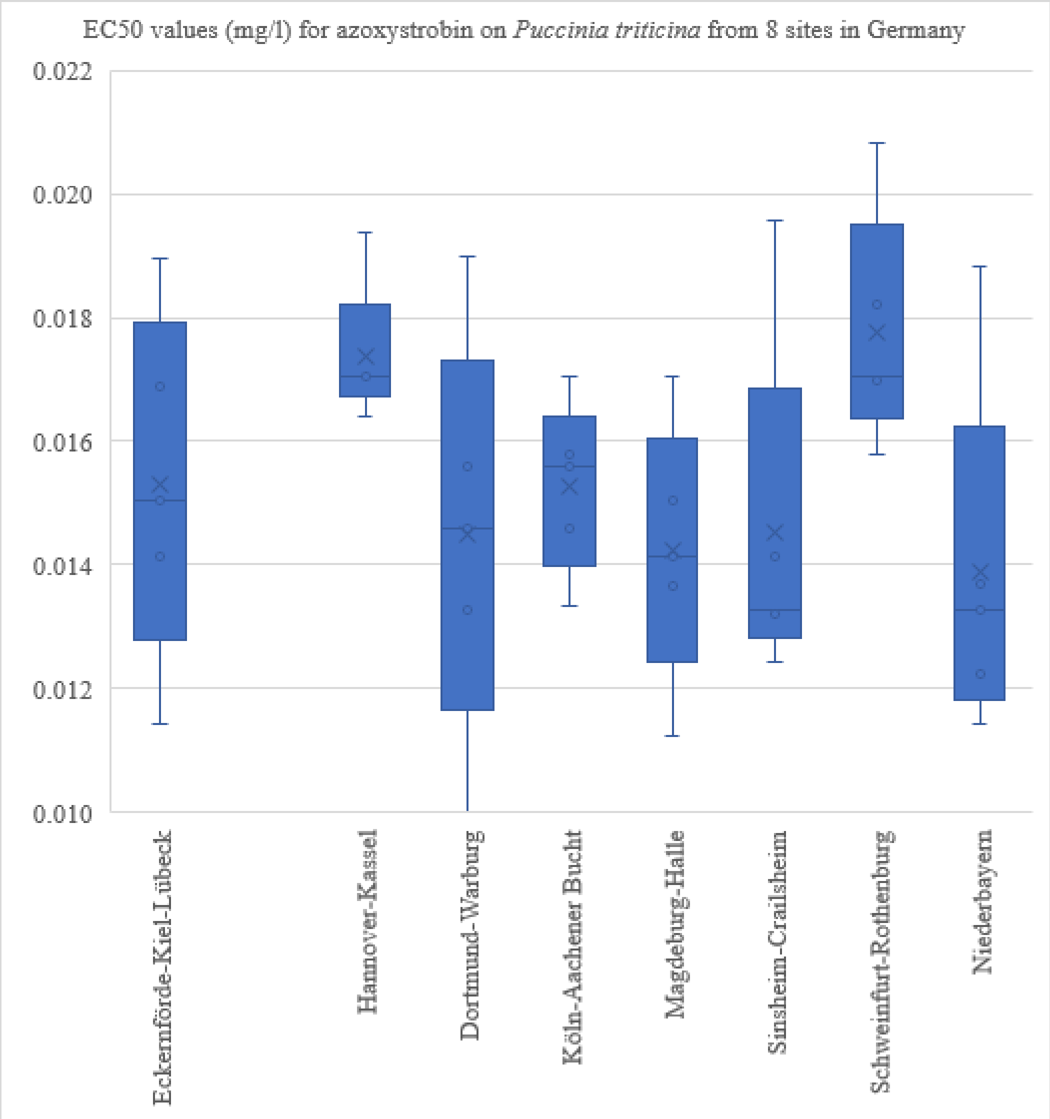

Figure 3.3.5-14: EC_{50} values (mg/l) for azoxystrobin on *Puccinia hordei* strains from 8 sites in Germany in 2016

Table 3.3.5-7: Sensitivity (EC_{50} in mg/l a.i.) of *Puccinia triticina* in samples from Germany towards azoxystrobin, 2016

Region	**Date**	**n**	**MEC_{50}**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Airborne samples						
Eckernförde-Kiel-Lübeck	07/07/16	5	0.015	0.011	0.019	***1.73***
Hannover-Kassel	29/06/16	5	0.017	0.016	0.019	***1.19***
Dortmund-Warburg	29/06/16	5	0.014	0.010	0.019	***1.90***
Köln-Aachener Bucht	22/06/16	5	0.015	0.013	0.017	***1.31***
Magdeburg-Halle	29/06/16	5	0.014	0.011	0.017	***1.55***
Sinsheim-Crailsheim	22/06/16	5	0.014	0.012	0.020	***1.67***
Schweinfurt-Rothenburg	01/07/16	5	0.018	0.016	0.021	***1.31***
Niederbayern	27/06/16	5	0.014	0.011	0.019	***1.73***
Among isolates	2016	40	0.015	0.010	0.021	***2.1***
				MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2016	8		0.014	0.018	***1.3***

Diversity factor = max EC_{50}/ min EC_{50}

Results 2020

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-8. The range of EC_{50} from the test samples was from 0.011 to 0.032 mg/l. The overall mean EC_{50} value from all regions was 0.024 mg/l.

As shown in Figure 3.3.5-15 below, the majority of results were for EC_{50} values between 0.025 and 0.028 mg/l.

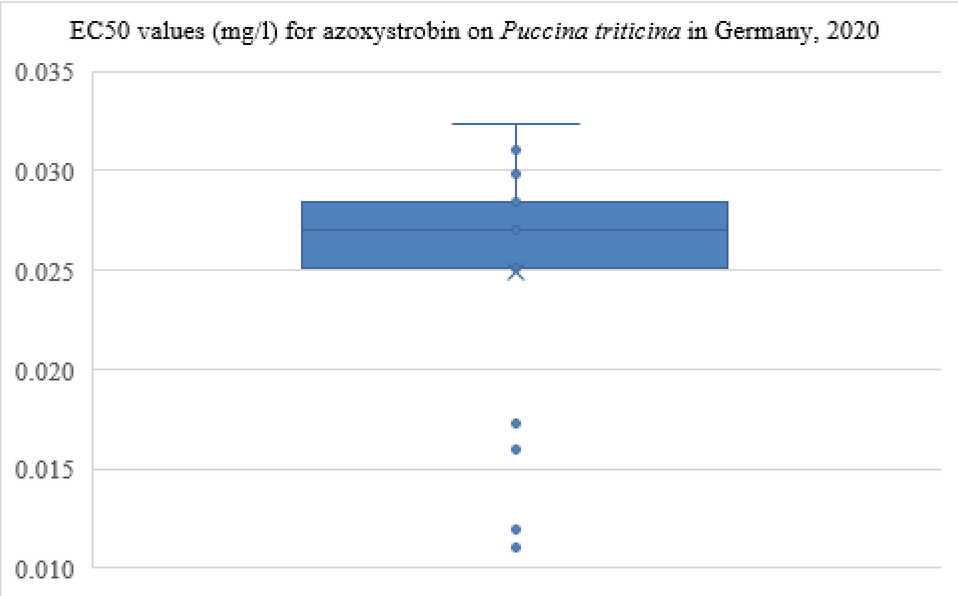

Figure 3.3.5-15: EC_{50} values (mg/l) for azoxystrobin on *Puccinia triticina* strains from all sites in Germany in 2020

No sensitive reference strains were available for comparison to the sampled strains for this pathogen, therefore it is not possible to calculate Resistance factors. However, the values from the samples from 2020 are comparable to the results from 2016, with a mean EC_{50} value from all regions of 0.015 in 2016 and 0.024 in 2020, and ranges of 0.010 to 0.021 mg/l in 2016 and 0.011 to 0.032 in 2020. In addition, comparing overall diversity factors between the 2 years' data, the diversity among the different samples (sites) was 1.3 in 2016 and 1.4 in 2020 indicating that populations still do not differ greatly. The overall diversity among all isolates increased slightly from 2.1 in 2016 to 2.9 in 2020, although a larger sample group was tested in 2020. Hence the data indicates that there appears to be little shift in sensitivity over the 4 years.

The diversity factor (EC_{50} max/ EC_{50} min) was again low across each of the regions sampled ranging from 1.13 to 2.60. The greatest variability was from the regions of Hofgeismar-Homberg/Efze and Oldenburg i.H.-Hamburg as also presented in Figure 3.3.5-16 below.

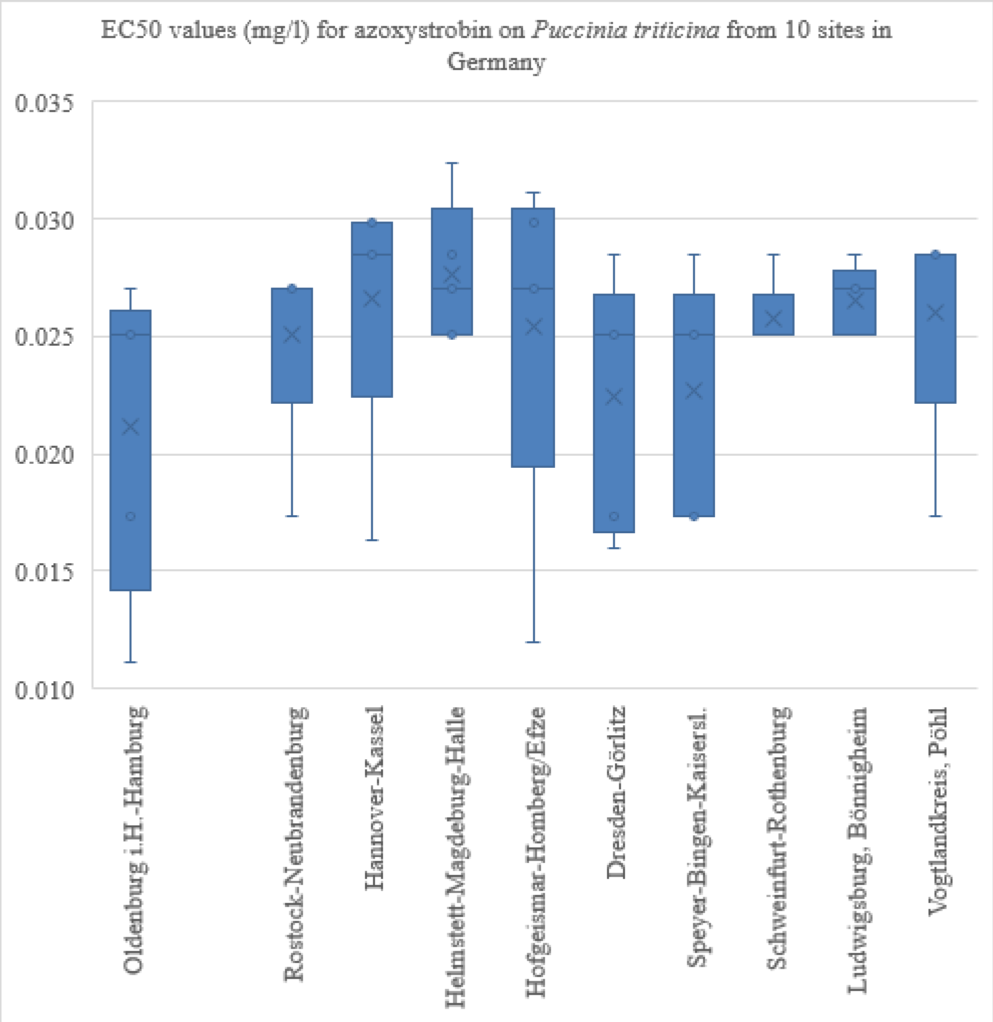

Figure 3.3.5-16: EC_{50} values (mg/l) for azoxystrobin on *Puccinia triticina* strains from 10 sites in Germany in 2020

<u>Conclusion on *Puccinia triticina* in Germany</u>

The data from the samples indicates that strains of *Puccinia triticina* remain sensitive to azoxystrobin, and there is little indication of a shift in sensitivity.

The data from these samples reinforces the fact that no resistance is currently recorded by EPPO or FRAC and also the monitoring studies by FRAC indicating full sensitivity across other European countries.

The data therefore appears to support results from the efficacy trials presented in this dossier demonstrating that azoxystrobin remains effective against *Puccinia triticina*.

Table 3.3.5-8: Sensitivity (EC_{50} in mg/l a.i.) of *Puccinia triticina* in samples from Germany towards azoxystrobin, 2020

Region	**Date**	**n**	**MEC_{50}**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Airborne samples						
Oldenburg i.H.-Hamburg	07/07/20	5	0.020	0.011	0.027	***2.43***
Rostock-Neubrandenburg	07/07/20	5	0.025	0.017	0.027	***1.56***
Hannover-Kassel	09/06/20	5	0.026	0.016	0.030	***1.83***
Helmstett-Magdeburg-Halle	09/06/20	5	0.027	0.025	0.032	***1.29***
Hofgeismar-Homberg/Efze	09/06/20	5	0.024	0.012	0.031	***2.60***
Dresden-Görlitz	30/06/20	5	0.022	0.016	0.028	***1.78***
Speyer-Bingen-Kaisersl.	28/06/20	5	0.022	0.017	0.028	***1.64***
Schweinfurt-Rothenburg	03/06/20	5	0.026	0.025	0.028	***1.13***
Field samples						
Ludwigsburg, Bönnigheim	29/06/20	5	0.027	0.025	0.028	***1.13***
Vogtlandkreis, Pöhl	07/07/20	5	0.026	0.017	0.028	***1.64***
Among isolates	2020	50	0.024	0.011	0.032	***2.9***
				MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2020	10		0.020	0.027	***1.4***

Diversity factor = max EC_{50}/ min EC_{50}

Puccinia striiformis f. sp. tritici

Testing was performed on *Puccinia striiformis f. sp. tritici* from samples from 8 sites in 2017 and 11 sites in 2020.

The data comprises results from 8 isolates from 2017 and 11 isolates from 2020. Field samples were used in the tests.

The test method was bioassay with bulk isolates from infected leaf material - 1 bulk isolate per sample; test method: in vivo, detached leaves, whole (intact) plants treated. In both years the test concentrations were 0.000, 0.001, 0.003, 0.01, 0.03, 0.1, 0.3, 1.0 and 3.0 mg/l of azoxystrobin. The test variety Catargo was used in both years

Results 2017

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-9. The range of EC_{50} from the test samples was from 0.019 to 0.032 mg/l. The overall geometric mean EC_{50} value from all regions was 0.025 mg/l. In this dataset only a single strain was taken from each site sample. The majority of the data was between EC_{50} values of 0.020 and 0.031 as shown in Figure 3.3.5-17.

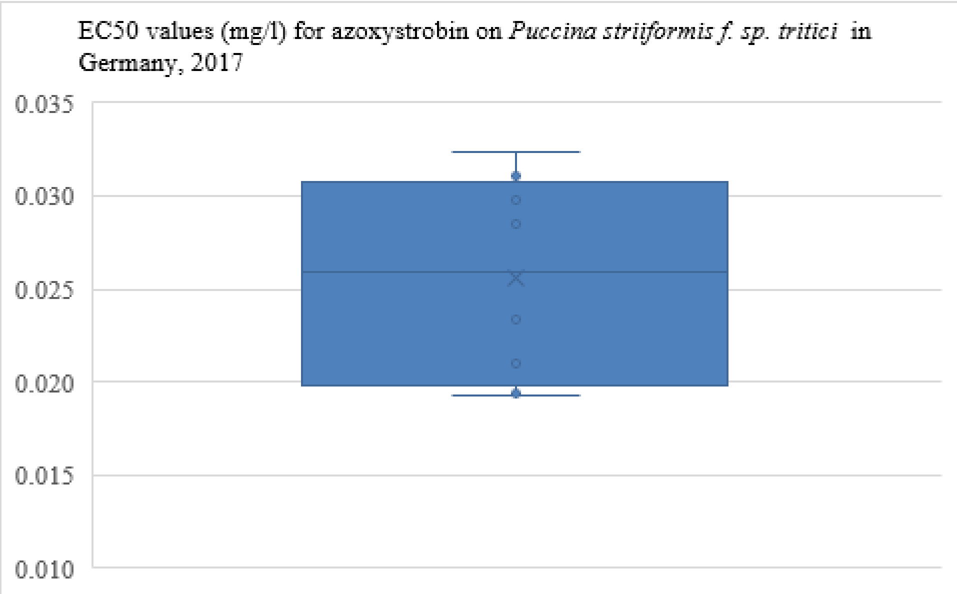

Figure 3.3.5-17: EC_{50} values (mg/l) for azoxystrobin on *Puccinia striiformis f. sp. tritici* strains from all sites in Germany in 2017.

No sensitive reference strains were available for comparison to the sampled strains for this pathogen, therefore it is not possible to calculate Resistance factors.

The diversity factor (EC_{50} max/ EC_{50} min) across the sites was low at 1.68 indicating little variability between the different populations sampled at the sites.

Results 2020

Information on the samples and the mean, minimum and maximum EC_{50} value are presented in Table 3.3.5-10. The range of EC_{50} from the test samples was from 0.022 to 0.045 mg/l. The overall geometric mean EC_{50} value from all regions was 0.033 mg/l. In this dataset only a single strain was taken from each site sample. The majority of the data was between EC_{50} values of 0.027 and 0.043 as shown in Figure 3.3.5-18

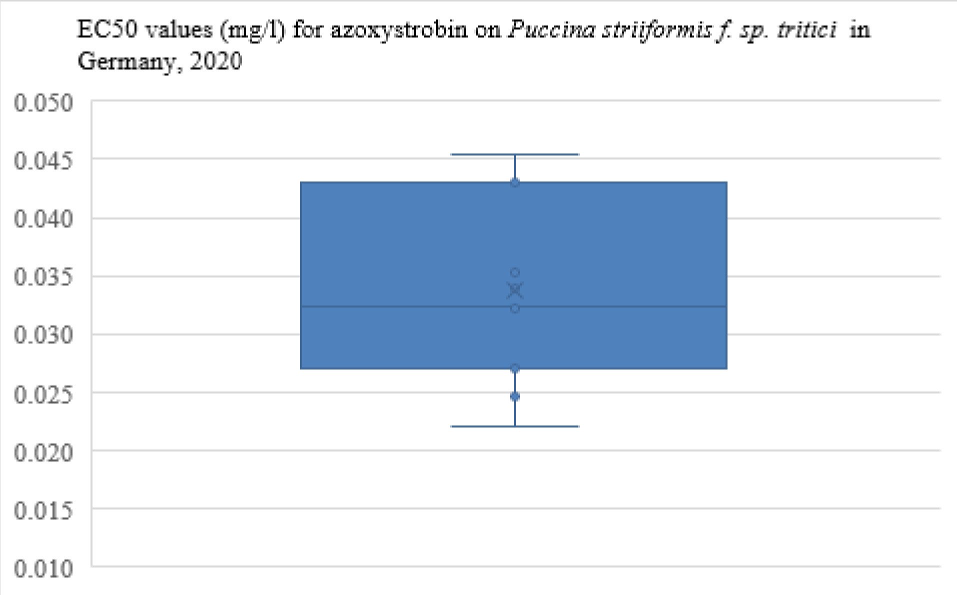

Figure 3.3.5-18: EC_{50} values (mg/l) for azoxystrobin on *Puccinia striiformis f. sp. tritici* strains from all sites in Germany in 2020.

No sensitive reference strains were available for comparison to the sampled strains for this pathogen, therefore it is not possible to calculate Resistance factors.

However, comparison can be made between these samples and the samples from 2017. The mean EC_{50} value from all regions increased somewhat from 0.025 in 2017 to 0.033 in 2020, and the ranges from 0.019 to 0.032 mg/l in 2017 and 0.022 to 0.045 in 2020. The diversity among the different samples (sites) was 1.7 in 2017 and 2.0 in 2020 indicating that populations still do not differ greatly, although a slightly larger sample group was tested in 2020. Hence the data indicates that there appears to be just a small shift in sensitivity over the 3 years.

Conclusion on *Puccinia striiformis f. sp. tritici* in Germany

The data from the samples indicates that strains of *Puccinia striiformis f. sp. tritici* remain sensitive to azoxystrobin, and there is no indication of a significant shift in sensitivity.

The data from these samples reinforces the fact that no resistance is currently recorded by EPPO or FRAC and also the monitoring studies by FRAC indicating full sensitivity across other European countries.

The data therefore appears to support results from the efficacy trials presented in this dossier demonstrating that azoxystrobin remains effective against *Puccinia striiformis f. sp. tritici*.

Table 3.3.5-9: Sensitivity (EC_{50} in mg/l a.i.) of *Puccinia striiformis f. sp. tritici* in samples from Germany towards azoxystrobin, 2017

Region	Date	n	MEC_{50}	EC_{50} min	EC_{50} max	*Diversity factor*
Field samples						
Strenzfeld (Kohlenstraße)	06/06/17	1	0.023	-	-	-
Südliches Anhalt, OT Prosigk	12/06/17	1	0.019	-	-	-
Motterwitz	22/06/17	1	0.031	-	-	-
Bad Lausick, OT Etzoldshain	22/05/17	1	0.032	-	-	-
Hochkirch, OT Pommritz	14/06/17	1	0.030	-	-	-
Pöhl, OT Christgrün	19/06/17	1	0.028	-	-	-
Salching	26/06/17	1	0.019	-	-	-
Niedersunzing	28/06/17	1	0.021	-	-	-
				MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2017	8	0.025	0.019	0.032	***1.68***

Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-10: Sensitivity (EC_{50} in mg/l a.i.) of *Puccinia striiformis f. sp. tritici* in samples from Germany towards azoxystrobin, 2020

Region	Date	n	MEC_{50}	EC_{50} min	EC_{50} max	*Diversity factor*
Field samples						
Reußenköge	30/06/20	1	0.035	-	-	-
Iserlohn-Drüpplingsen	16/06/20	1	0.027	-	-	-
Dülmen	18/06/20	1	0.032	-	-	-
Dorn Assenheim	16/06/20	1	0.022	-	-	-
Thiemensdorf	07/07/20	1	0.045	-	-	-
Beimerstetten	23/06/20	1	0.043	-	-	-
Reichenberg	25/06/20	1	0.043	-	-	-
Reichenberg	29/06/20	1	0.025	-	-	-
Schraudenbach	16/06/20	1	0.032	-	-	-
Rettenbach	25/06/20	1	0.032	-	-	-
Kag	28/06/20	1	0.034	-	-	-
				MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2020	11	0.033	0.022	0.045	***2.05***

Diversity factor = max EC_{50}/ min EC_{50}

Pyrenophora teres

Testing was performed on *Pyrenophora teres* from samples from 10 sites in 2017, 2018, 11 sites in 2019 and 10 sites in 2020.

The data comprises results from 50 isolates from 2017 and 2018, 55 isolates in 2019 and 50 isolates from 2020. Air-borne samples were used in the tests, except for one field sample in 2019 and in 2020.

In all years the test method was bioassay with single-spore progeny - 5 isolates per sample - test method: in vitro (microtiter); in % of isolates per sample with an obviously reduced AZS sensitivity (probably caused by the F129L or G137R mutation or one with a similar dose-response reaction). The test concentrations were 0.0, 0.00128, 0.0064, 0.032, 0.16, 0.8, 4.0, 20.0 mg/l of azoxystrobin.

Results 2017

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-11. The range of EC_{50} from the test samples was from 0.011 to 4.333 mg/l. The overall mean EC_{50} value from all isolates was 0.955 mg/l. The majority of the data was between EC_{50} values of 0.118 and 1.604 as shown in Figure 3.3.5-19.

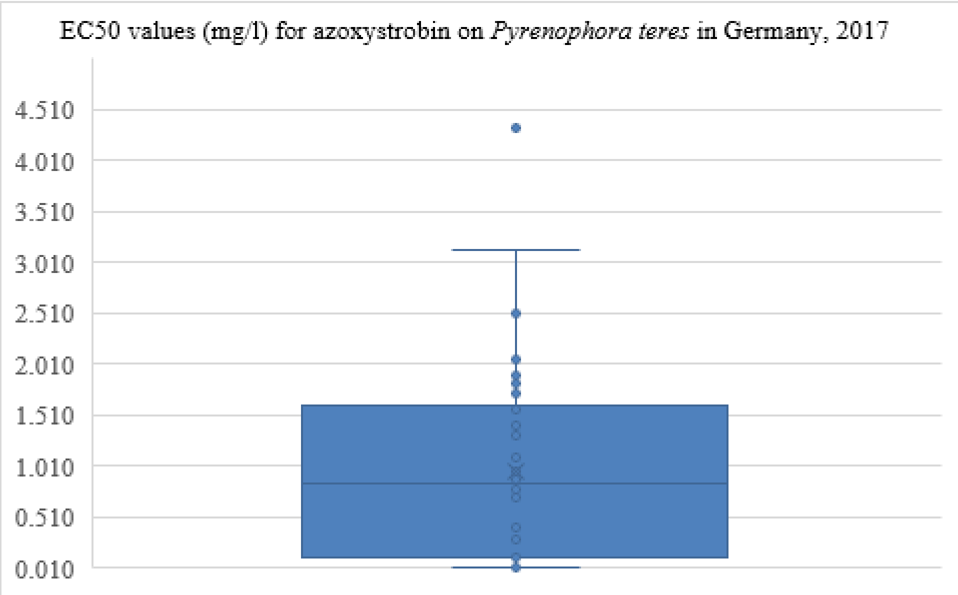

Figure 3.3.5-19: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from all sites in Germany in 2017.

The mean EC_{50} of the reference strains known to be susceptible to QoI fungicides was reported to be 0.015 mg/l azoxystrobin This reference is therefore used as the “baseline” reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 4.1 (Dortmund-Warburg) to 118.4 (Rostock-Greifswald).

The diversity factor (EC_{50} max/ EC_{50} min) varied greatly among the sites ranging from 1.3 to 173.3. The greatest variability was from Unterfranken, whilst the lowest was from Rostock-Greifswald where all strains had high values as presented in Figure 3.3.5-20 below.

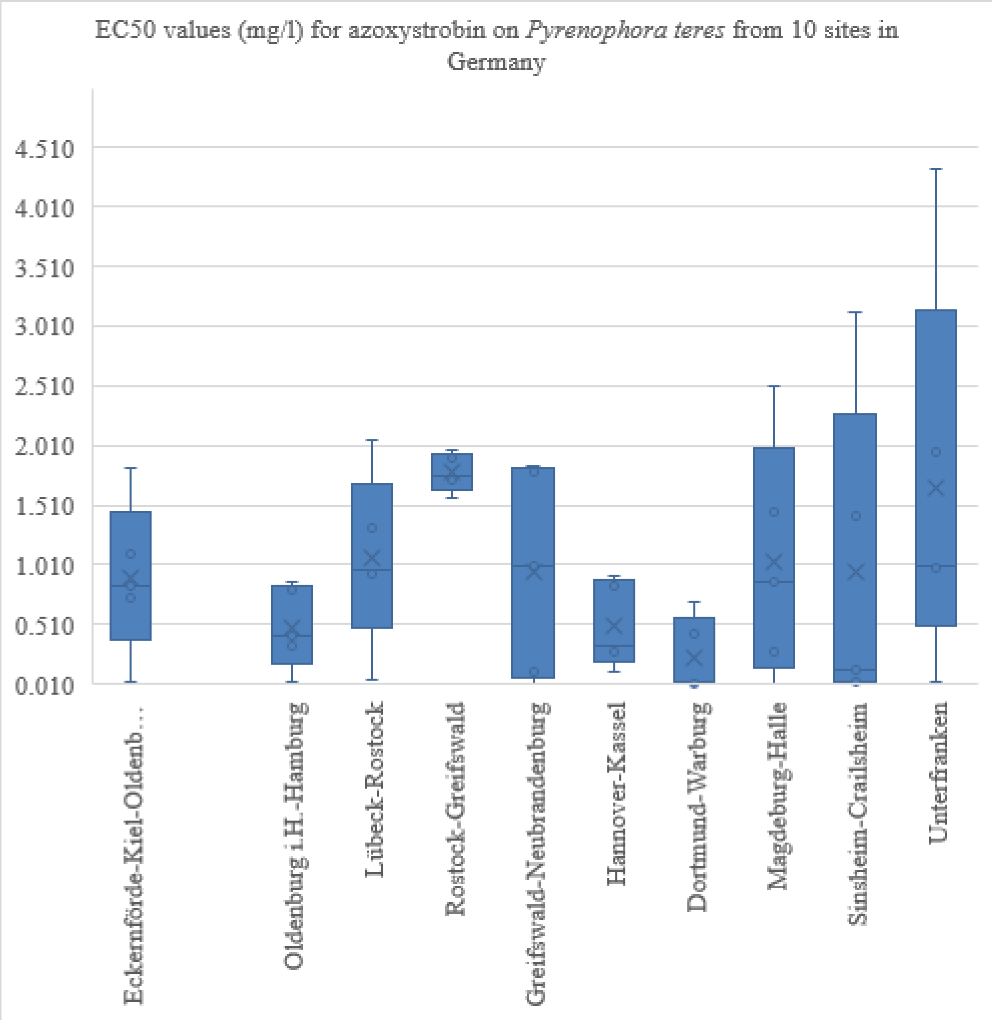

Figure 3.3.5-20: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from 10 sites in Germany in 2017

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). The laboratory determined the proportion of resistant isolates based on a RF value of >20. Across all isolates 68% were calculated to be resistant, however the proportions varied among the sites. Rostock-Greifswald samples were all considered to be resistant with low diversity among the isolates, whereas 40% of isolates from Dortmund-Warburg and Sinsheim-Crailsheim were resistant. However, the diversity factors (63.2-120.2) were high for both of these regions indicating a less stable population.

Results 2018

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-11. The range of EC_{50} from the test samples was from 0.010 to 1.481 mg/l. The overall mean EC_{50} value from all isolates was 0.504 mg/l. The majority of the data was between EC_{50} values of 0.027 and 0.856 as shown in Figure 3.3.5-21.

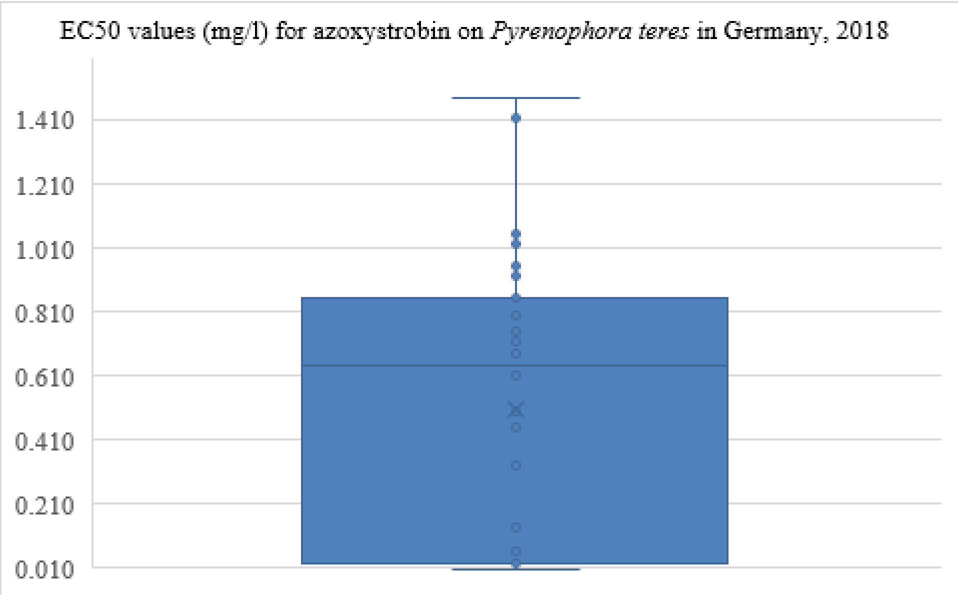

Figure 3.3.5-21: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from all sites in Germany in 2018.

The mean EC_{50} of the reference strains known to be susceptible to QoI fungicides was reported to be 0.011 mg/l azoxystrobin This reference is therefore used as the "baseline" reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 4.2 (Rostock-Greifswald) to 66.2 (Eckernförde-Kiel-Oldenburg i.H).

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). The laboratory determined the proportion of resistant isolates based on a RF value of >20. Across all isolates 60% were calculated to be resistant, however the proportions varied among the sites with only 20% of samples from Rostock-Greifswald, Köln-Aachener Bucht and Unterfranken, and 100% of samples from Eckernförde-Kiel-Oldenburg i.H.

In contrast to data from 2017, the diversity factor among strains from Unterfranken (2.9) was low as shown in Figure 6.3.22. The highest diversity was from Hanover-Kassel at 64.4 whilst the lowest was Eckernförde-Kiel-Oldenburg i.H. at 2.8.

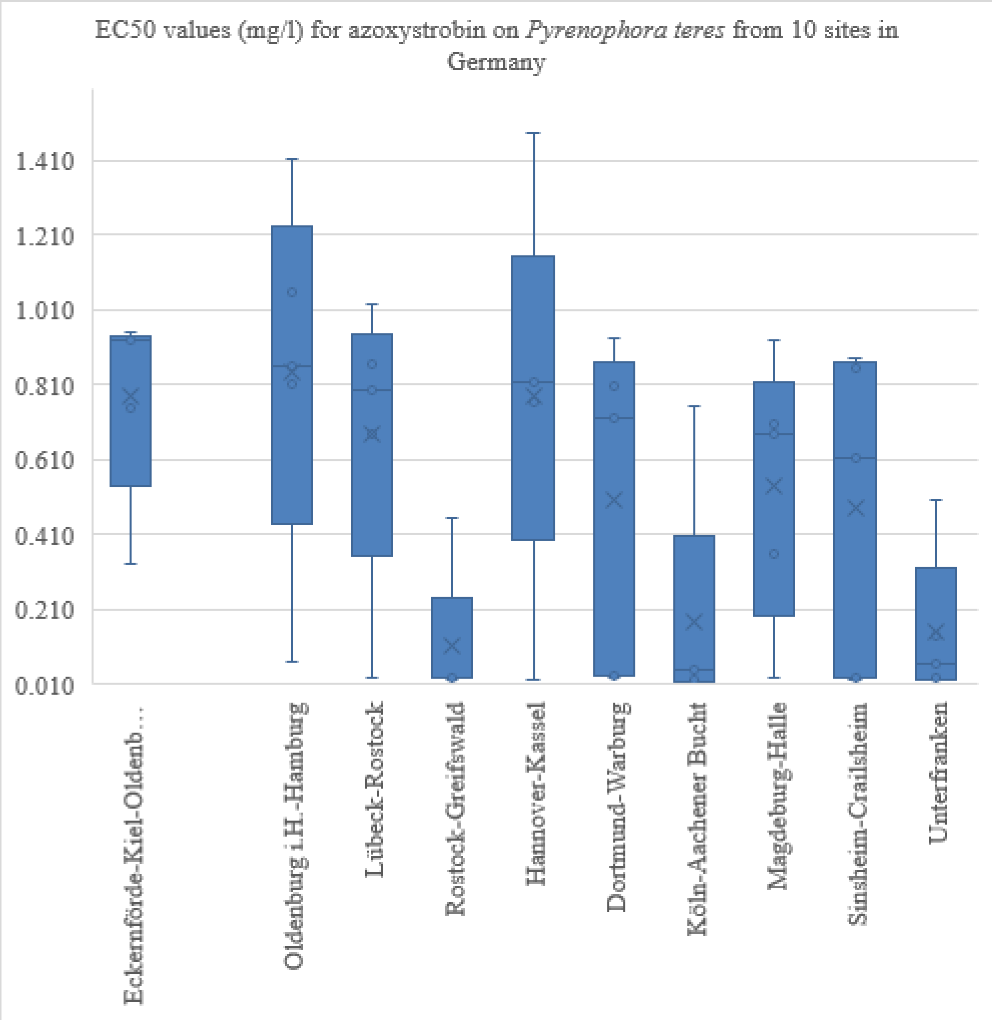

Figure 3.3.5-22: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from 10 sites in Germany in 2018

Results 2019

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-13. The range of EC_{50} from the test samples was from 0.019 to 2.061 mg/l. The overall mean EC_{50} value from all isolates was 0.388 mg/l. The majority of the data was between EC_{50} values of 0.058 and 1.014 as shown in Figure 3.3.5-23.

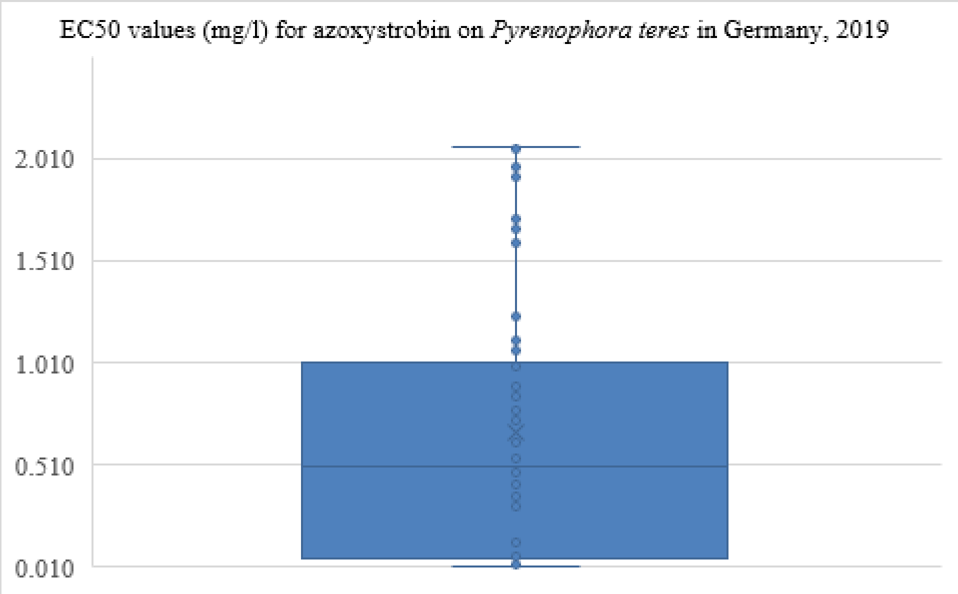

Figure 3.3.5-23: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from all sites in Germany in 2019.

The mean EC_{50} of the reference strains known to be susceptible to QoI fungicides was reported to be 0.012 mg/l azoxystrobin This reference is therefore used as the "baseline" reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 2.4 from the field samples and 7.1 (Lübeck-Rostock) to 117.8 (Hannover-Kassel) from the airborne samples. Samples taken from the field did not demonstrate resistance to azoxystrobin.

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). The laboratory determined the proportion of resistant isolates based on a RF value of >20. Across all isolates 67% were calculated to be resistant, however the proportions varied among the sites with none from the field samples, only 20% of samples from Lübeck-Rostock, 40% from Schweinfurt-Rothenburg and 100% of samples from Rostock-Greifswald, Hannover-Kassel, Dortmund-Warburg and Köln-Aachener Bucht. For all of the latter regions with all resistant samples the diversity values were low at <5, indicating most isolates were similar in their susceptibility values. In addition, a very low diversity value (2.5) was reported for the field samples. For the other regions diversity was higher at 24.6 to 64.9 indicating more variability in these populations. The variability in strains from each site are also presented in Figure 3.3.5-24 below.

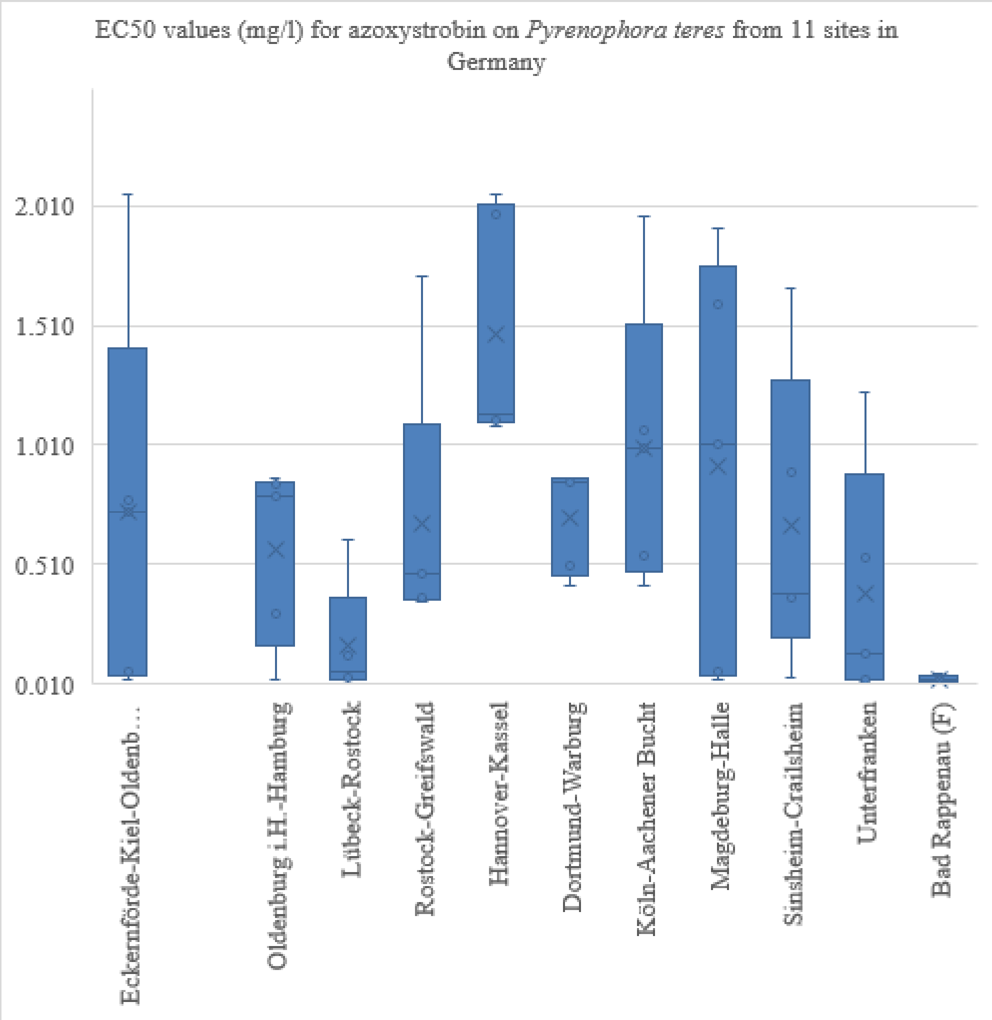

Figure 3.3.5-24: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from 11 sites in Germany in 2019

Results 2020

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-14. The range of EC_{50} from the test samples was from 0.006 to 1.891 mg/l. The overall mean EC_{50} value from all isolates was 0.701 mg/l. The majority of the data was between EC_{50} values of 0.233 and 0.953 as shown in Figure 3.3.5-25.

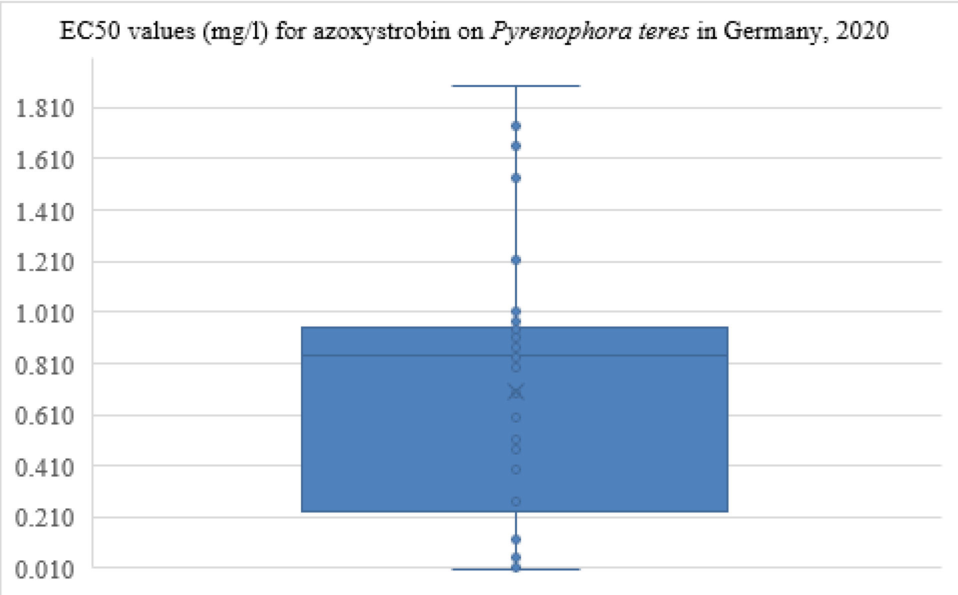

Figure 3.3.5-25: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from all sites in Germany in 2020.

The mean EC_{50} of the reference strains known to be susceptible to QoI fungicides was reported to be 0.016 mg/l azoxystrobin This reference is therefore used as the "baseline" reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 3.9 (Nordhausen-Erfurt) to 65.2 (Hannover-Kassel) from the airborne samples. The field samples from Erftkreis had a RF of 25.6.

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). The laboratory determined the proportion of resistant isolates based on a RF value of >20. Across all isolates 76% were calculated to be resistant, however the proportions varied among the sites with 40% of samples from Rostock-Greifswald, Nordhausen-Erfurt and Schweinfurt-Rothenburg and 100% of samples from Oldenburg i.H.-Hamburg, Greifswald-Neubrandenburg, Hannover-Kassel and Dortmund-Warburg. For all of the latter regions with all resistant samples the diversity values were low at <5, indicating most isolates were similar in their susceptibility values. For all of the other regions, including the field samples, diversity was higher at 29.7 to 162.5 indicating more variability in these populations.

The highest diversity factor was for Nordhausen-Erfurt, which also had the lowest mean EC_{50} value, and Magdburgh-Halle also showed large variability in values as presented in Figure 3.3.5-26.

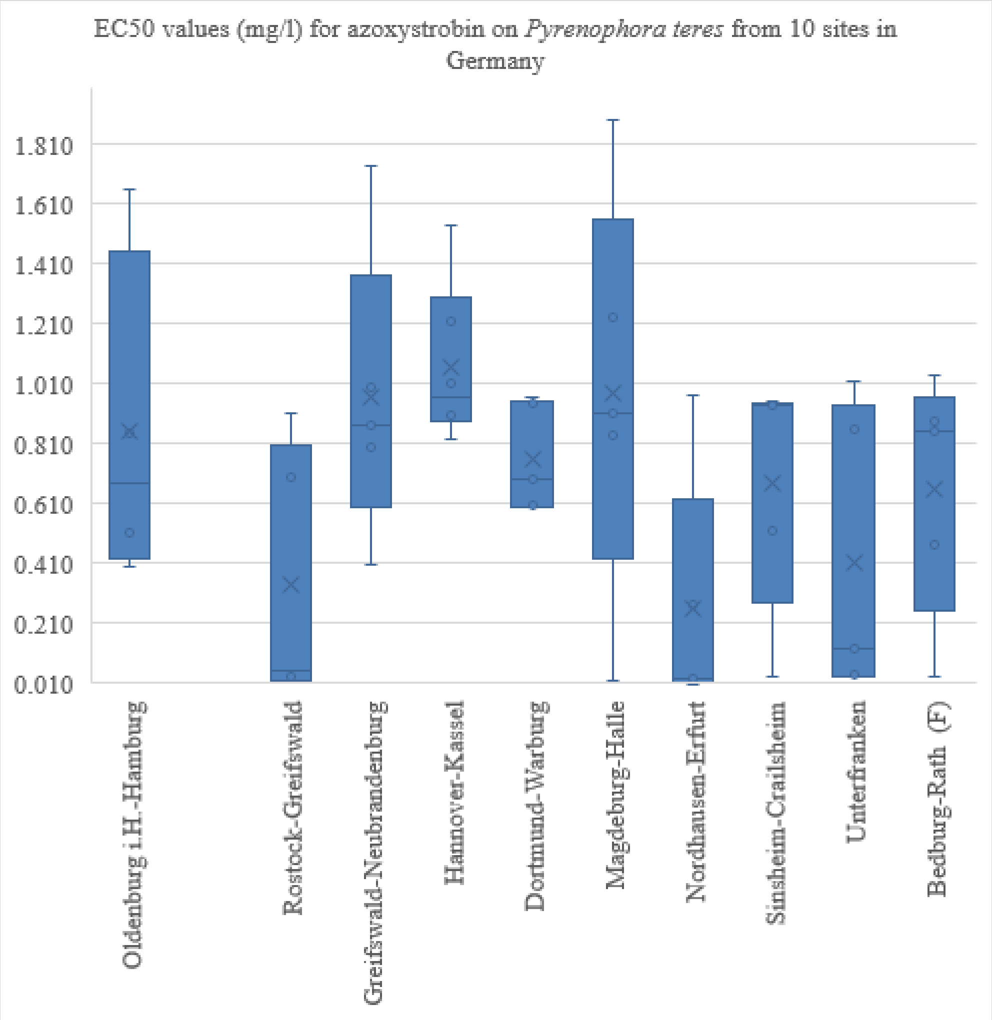

Figure 3.3.5-26: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora teres* strains from 10 sites in Germany in 2020

Table 3.3.5-11: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora teres* in samples from Germany towards azoxystrobin, 2017

Region	**Date**	**n**	**MEC_{50}**	***Mean RF****	**No/% resistant isolates**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Airborne samples								
Eckernförde-Kiel-Oldenburg i.H.	28.06.17	5	0.504	***33.5***	4/80	0.026	1.817	***69.9***
Oldenburg i.H.-Hamburg	28.06.17	5	0.313	***20.8***	4/80	0.032	0.862	***26.9***
Lübeck-Rostock	28.06.17	5	0.635	***42.3***	4/80	0.042	2.053	***48.9***
Rostock-Greifswald	28.06.17	5	1.776	***118.4***	5/100	1.566	1.967	***1.3***
Greifswald-Neubrandenburg	28.06.17	5	0.387	***25.8***	3/60	0.022	1.844	***83.8***
Hannover-Kassel	10.06.17	5	0.379	***25.5***	3/60	0.108	0.925	***8.6***
Dortmund-Warburg	28.06.17	5	0.062	***4.1***	2/40	0.011	0.695	***63.2***
Magdeburg-Halle	10.06.17	5	0.446	***29.7***	3/60	0.019	2.510	***132.1***
Sinsheim-Crailsheim	22.06.17	5	0.210	***14.0***	2/40	0.026	3.125	***120.2***
Unterfranken	10.06.17	5	0.729	***48.5***	4/80	0.025	4.333	***173.3***
Among isolates	2017	50	0.955	***63.7***	3.4/68	0.011	4.333	***393.9***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2017	10				0.062	1.776	***28.6***
Standard isolates								
Standard isolates possessing an original unselected 'wild-type' sensitivity towards QoIs		2	**0.015**	-		0.009	0.025	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-12: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora teres* in samples from Germany towards azoxystrobin, 2018

Region	Date	n	MEC_{50}	*Mean RF**	No/% resistant isolates	EC_{50} min	EC_{50} max	*Diversity factor*
Airborne samples								
Eckernförde-Kiel-Oldenburg i.H.	01/07/18	5	0.728	***66.2***	5/100	0.334	0.951	***2.8***
Oldenburg i.H.-Hamburg	17/06/18	5	0.590	***53.6***	4/80	0.069	1.414	***20.5***
Lübeck-Rostock	30/06/18	5	0.415	***37.7***	4/80	0.026	1.023	***39.3***
Rostock-Greifswald	30/06/18	5	0.046	***4.2***	1/20	0.023	0.451	***19.6***
Hannover-Kassel	16/06/18	5	0.443	***40.3***	4/80	0.023	1.481	***64.4***
Dortmund-Warburg	17/06/18	5	0.217	***19.7***	3/60	0.028	0.932	***33.3***
Köln-Aachener Bucht	22/06/18	5	0.055	***5.0***	1/20	0.010	0.752	***75.2***
Magdeburg-Halle	16/06/18	5	0.332	***30.2***	4/80	0.025	0.931	***37.2***
Sinsheim-Crailsheim	23/06/18	5	0.195	***17.7***	3/60	0.024	0.879	***36.6***
Unterfranken	16/06/18	5	0.076	***6.9***	1/20	0.024	0.502	***2.9***
Among isolates	2018	50	0.504	***45.8***	30/60	0.010	1.481	***148.1***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2018	10				0.046	0.728	***15.8***
Standard isolates								
Standard isolates possessing an original unselected 'wild-type' sensitivity towards QoIs		2	**0.011**	-		0.011	0.012	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-13: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora teres* in samples from Germany towards azoxystrobin, 2019

Region	**Date**	**n**	**MEC_{50}**	***Mean RF****	**No/% resistant isolates**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Airborne samples								
Eckernförde-Kiel-Oldenburg i.H.	01/07/19	5	0.302	***25.2***	3/60	0.033	2.053	***62.2***
Oldenburg i.H.-Hamburg	13/06/19	5	0.352	***29.3***	4/80	0.030	0.869	***29.0***
Lübeck-Rostock	02/07/19	5	0.085	***7.1***	1/20	0.025	0.615	***24.6***
Rostock-Greifswald	02/07/19	5	0.554	***46.2***	5/100	0.357	1.713	***4.8***
Hannover-Kassel	14/06/19	5	1.413	***117.8***	5/100	1.091	2.061	***1.9***
Dortmund-Warburg	13/06/19	5	0.673	***56.1***	5/100	0.420	0.875	***2.1***
Köln-Aachener Bucht	15/06/19	5	0.861	***71.8***	5/100	0.417	1.966	***4.7***
Magdeburg-Halle	14/06/19	5	0.355	***29.6***	3/60	0.031	1.917	***61.8***
Sinsheim-Crailsheim	18/06/19	5	0.376	***31.3***	4/80	0.035	1.664	***47.5***
Unterfranken	12/06/19	5	0.140	***11.7***	2/40	0.019	1.233	***64.9***
Field samples								
Bad Rappenau	11/07/19	5	0.029	***2.4***	0/0	0.020	0.050	***2.5***
Among isolates	2019	55	0.388	***32.3***	37/67	0.019	2.061	***108.5***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2019	11				0.029	1.413	***48.7***
Standard isolates								
Standard isolates possessing an original unselected 'wild-type' sensitivity towards QoIs		2	**0.012**	-		0.010	0.014	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-14: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora teres* in samples from Germany towards azoxystrobin, 2020

Region	Date	n	MEC_{50}	*Mean RF**	No/% resistant isolates	EC_{50} min	EC_{50} max	*Diversity factor*
Airborne samples								
Oldenburg i.H.-Hamburg	06/07/20	4	0.730	***45.6***	4/100	0.398	1.658	***4.2***
Rostock-Greifswald	07/07/20	5	0.101	***6.3***	2/40	0.012	0.910	***75.8***
Greifswald-Neubrandenburg	07/07/20	5	0.868	***54.3***	5/100	0.407	1.740	***4.3***
Hannover-Kassel	09/06/20	6	1.043	***65.2***	6/100	0.823	1.537	***1.9***
Dortmund-Warburg	06/07/20	5	0.744	***46.5***	5/100	0.600	0.962	***1.6***
Magdeburg-Halle	09/06/20	5	0.288	***18.0***	4/80	0.016	1.891	***118.2***
Nordhausen-Erfurt	09/06/20	5	0.062	***3.9***	2/40	0.006	0.975	***162.5***
Sinsheim-Crailsheim	28/06/20	5	0.426	***26.6***	4/80	0.032	0.949	***29.7***
Unterfranken	03/06/20	5	0.162	***10.1***	2/40	0.030	1.018	***33.9***
Field samples								
Erftkreis	15/06/20	5	0.409	***25.6***	4/80	0.031	1.039	***33.5***
Among isolates		50	0.701	***43.8***	48/76	0.006	1.891	***315.2***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)		10				0.062	1.043	***16.8***
Standard isolates								
Standard isolates possessing an original unselected 'wild-type' sensitivity towards QoIs		2	**0.016**	-		0.013	0.019	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-15: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora teres* in samples from Germany towards azoxystrobin, 2017-20

Region	MEC50				Mean RF*				% resistant isolates				Diversity factor			
	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019	2020
Airborne samples																
Eckernförde-Kiel-Oldenburg i.H.	0.504	0.728	0.302	-	33.5	66.2	25.2	-	80	100	80	-	69.9	2.8	62.2	-
Oldenburg i.H.-Hamburg	0.313	0.590	0.352	0.730	20.8	53.6	29.3	45.6	80	80	60	100	26.9	20.5	29.0	4.2
Lübeck-Rostock	0.635	0.415	0.085	-	42.3	37.7	7.1	-	80	80	20	-	48.9	39.3	24.6	-
Rostock-Greifswald	1.776	0.046	0.554	0.101	118.4	4.2	46.2	6.3	100	20	100	40	1.3	19.6	4.8	75.8
Greifswald-Neubrandenburg	0.387	-	-	0.868	25.8	-	-	54.3	60	-	-	100	83.8	-	-	4.3
Hannover-Kassel	0.379	0.443	1.413	1.043	25.5	40.3	117.8	65.2	60	80	100	100	8.6	64.4	1.9	1.9
Dortmund-Warburg	0.062	0.217	0.673	0.744	4.1	19.7	56.1	46.5	40	60	100	100	63.2	33.3	2.1	1.6
Magdeburg-Halle	0.446	0.332	0.355	0.288	29.7	30.2	29.6	18.0	60	80	60	80	132.1	37.2	61.8	118.2
Sinsheim-Crailsheim	0.210	0.195	0.376	0.426	14.0	17.7	31.3	26.6	40	60	80	80	120.2	36.6	47.5	29.7
Unterfranken	0.729	0.076	0.140	0.162	48.5	6.9	11.7	10.1	80	20	40	40	173.3	2.9	64.9	33.9
Köln-Aachener Bucht	-	0.055	0.861	-	-	5.0	71.8	-	-	20	100	-	-	75.2	4.7	-
Nordhausen-Erfurt	-	-	-	0.062	-	-	-	3.9	-	-	-	40	-	-	-	162.5
Field samples																
Bad Rappenau	-	-	0.029	-	-	-	2.4	-	-	-	0	-	-	-	2.5	-
Erftkreis	-	-	-	0.409	-	-	-	25.6	-	-	-	80	-	-	-	33.5

	Year	n	mean MEC50	mean RF	EC50 min	EC50 max	% resistant isolates	Diversity factor
Among isolates - 2017	2017	50	0.955	63.7	0.011	4.333	68	393.9
Among isolates - 2018	2018	50	0.504	45.8	0.010	1.481	60	148.1
Among isolates - 2019	2019	55	0.388	32.2	0.019	2.061	67	108.5
Among isolates - 2020	2020	50	0.701	43.8	0.006	1.891	76	315.2

Standard isolates					
Standard isolates possessing an original unselected 'wild-type' sensitivity towards QoIs	n	EC50	EC50 min	EC50 max	Diversity factor
	2	0.011-0.016	0.009	0.025	2.78

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Conclusion on *Pyrenophora teres* in Germany

The results from 4 years of monitoring show large variability within different populations of *Pyrenophora teres*, and also variability in results from different years from the same regions as summarised in Table 3.3.5-15. Where samples contained primarily resistant isolates the diversity was low, whereas populations taken from regions (samples) with lower mean resistance factors had higher diversity indicating a range of sensitivities.

Shifts in sensitivities are observed from the data, however, the trends are not consistent. Whilst it might be expected that resistance would increase over time, the samples taken from the same regions on consecutive years often showed contrasting results. For examples the first samples from Rostock-Greifswald in 2017 were reported to have all resistant isolates with a very high mean RF value of 118.4, but in 2018 only 20% of the isolates were resistant and the mean RF value was 4.2. In 2019 the RF value increased to 46.2 but then fell to 6.3 in 2020. Similarly, in Lübeck-Rostock, EC_{50} values and RF values decreased over the 3 years of assessment.

In five of the ten areas assessed from 2017 the mean RF value was lower in the final years' assessment compared to the value in 2017. In the other five areas, although the final assessment gave higher RF values compared to those from 2017, there was fluctuation in the interceding years with values decreasing then increasing or vice versa.

These inconsistencies may be explained by the resistance mechanism most commonly found in *P. teres* which is the F129L mutation, which is reported to induce more variable levels of resistance, usually not leading to the in-field effects observed from the G143A mutation in other species.

Pyrenophora tritici-repentis

Testing was performed on *Pyrenophora tritici-repentis* from samples from 7 sites in 2017, 4 sites in 2018 and 6 sites in 2019.

The data comprises results from 22 isolates from 2017, 20 from 2018 and 26 isolates in 2019. Field samples were used in the tests in all years

In all years the test method in vitro (microtiter); in % of isolates per sample with an obviously reduced AZS sensitivity (probably caused by the G143A or G137R mutation or one with a similar dose-response reaction). The test concentrations were 0.0, 0.001, 0.003, 0.010, 0.030, 0.100, 0.300, 1.000, 3.000, 10.000, 30.000, 100.000 mg/l mg/l of azoxystrobin.

Results 2017
Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-16. The range of EC_{50} from the test samples was from 0.004 to 4.5 mg/l. The overall mean EC_{50} value from all isolates was 1.064 mg/l. The majority of the data was between EC_{50} values of 0.005 and 1.708 as shown in Figure 3.3.5-27.

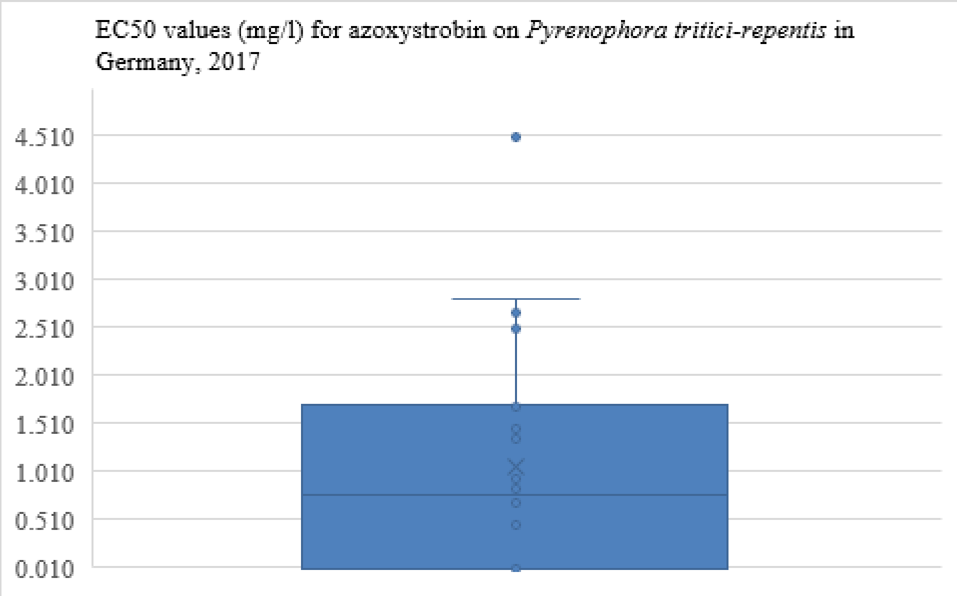

Figure 3.3.5-27: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora tritici-repentis* strains from all sites in Germany in 2017.

The mean EC_{50} of the reference strains known to be susceptible to QoI fungicides was reported to be 0.017 mg/l azoxystrobin This reference is therefore used as the “baseline” reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 0.2 (Riesigk) to 120.3 (Wilsdruff).

According to FRAC RF values of up to 10 are considered small (Fungicide resistance: The assessment of risk, FRAC Monograph No.2 second, (revised) edition). The laboratory determined the proportion of resistant isolates based on a RF value of >20. Across all isolates 59% were calculated to be resistant, however the proportions varied among the sites with neither of the samples from Riesigk showing resistance, 3 of 8 (37%) from Niedersemsing, 30 of 5 (60%) from Berßel and 100% of samples from the remaining regions which had 1-2 isolates per site classed as resistant. Diversity values were low for most sites (also possibly due to the low number of isolates), and very high for Berßel (704.5) and Niedersemsing (626.8). The variation in values per site is presented in Figure 3.3.5-28.

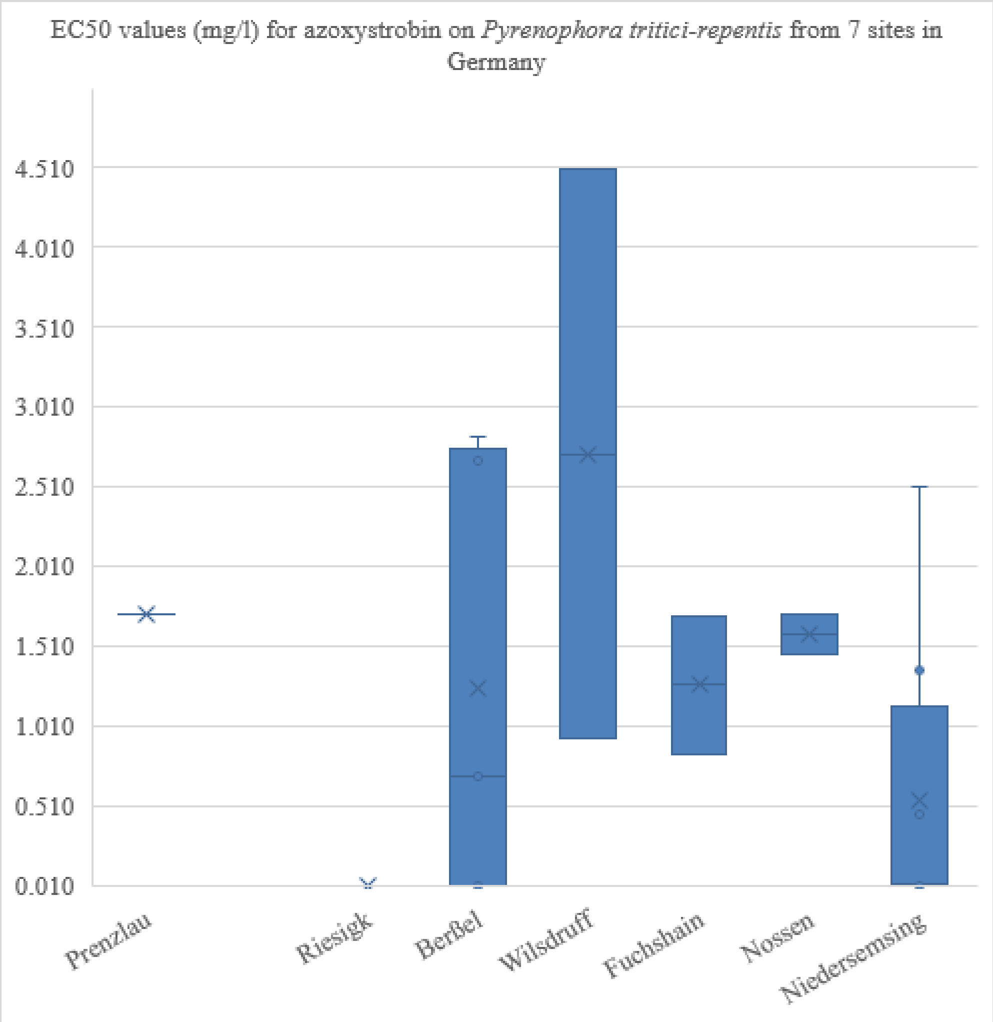

Figure 3.3.5-28: EC$_{50}$ values (mg/l) for azoxystrobin on *Pyrenophora tritici-repentis* strains from 7 sites in Germany in 2017

<u>Results 2018</u>

Information on the samples and the mean, minimum and maximum EC$_{50}$ and EC$_{98}$ value are presented in Table 3.3.5-17. The range of EC$_{50}$ from the test samples was from 0.005 to 15.154mg/l. The overall mean EC$_{50}$ value from all isolates was 4.277 mg/l. The majority of the data was between EC$_{50}$ values of 1.357 and 5.092 as shown in Figure 3.3.5-29.

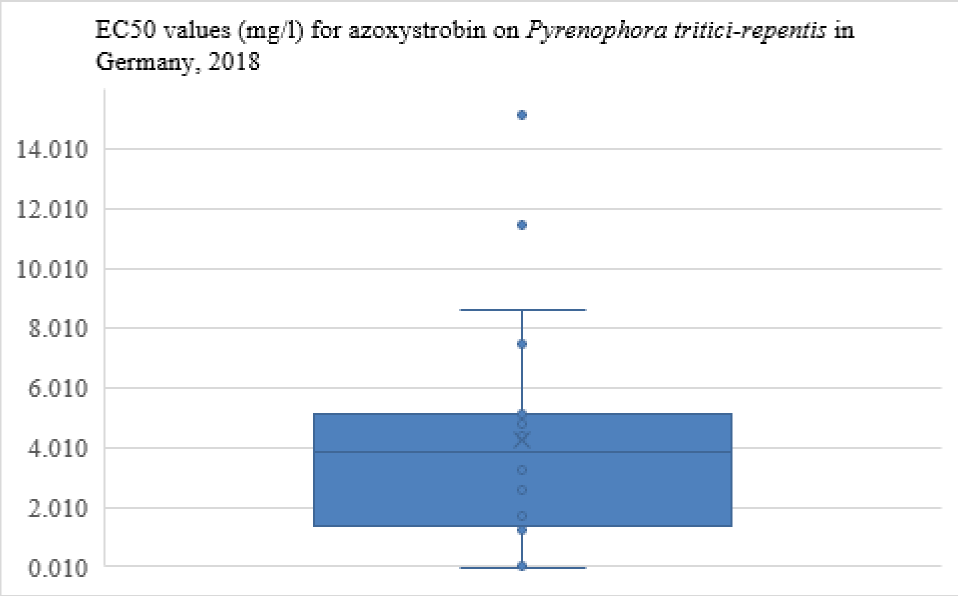

Figure 3.3.5-29: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora tritici-repentis* strains from all sites in Germany in 2018.

The mean EC_{50} of the reference strains known to be susceptible to QoI fungicides was reported to be 0.007 mg/l azoxystrobin This reference is therefore used as the “baseline” reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC_{50} values for the different regions ranged from 22.7 (Angermünde /Gellmesdorf) to 442.6 (Grünsfeld).

Two resistant reference strains were used for comparison in the results analysis. One reference strain with a G143A mutation and EC_{50} of 3.208 mg/l azoxystrobin, and one reference strain with mutation F129L/G137R and EC_{50} of 0.109 mg/l azoxystrobin. However, the mutations F129L/G137R do not necessarily lead to levels of resistance which result in field effects. Hence for calculations of the proportion of resistant individuals, values up to 0.251 mg/l are classed as having only a slight resistance and values of 1.234 and above classed as fully resistant.

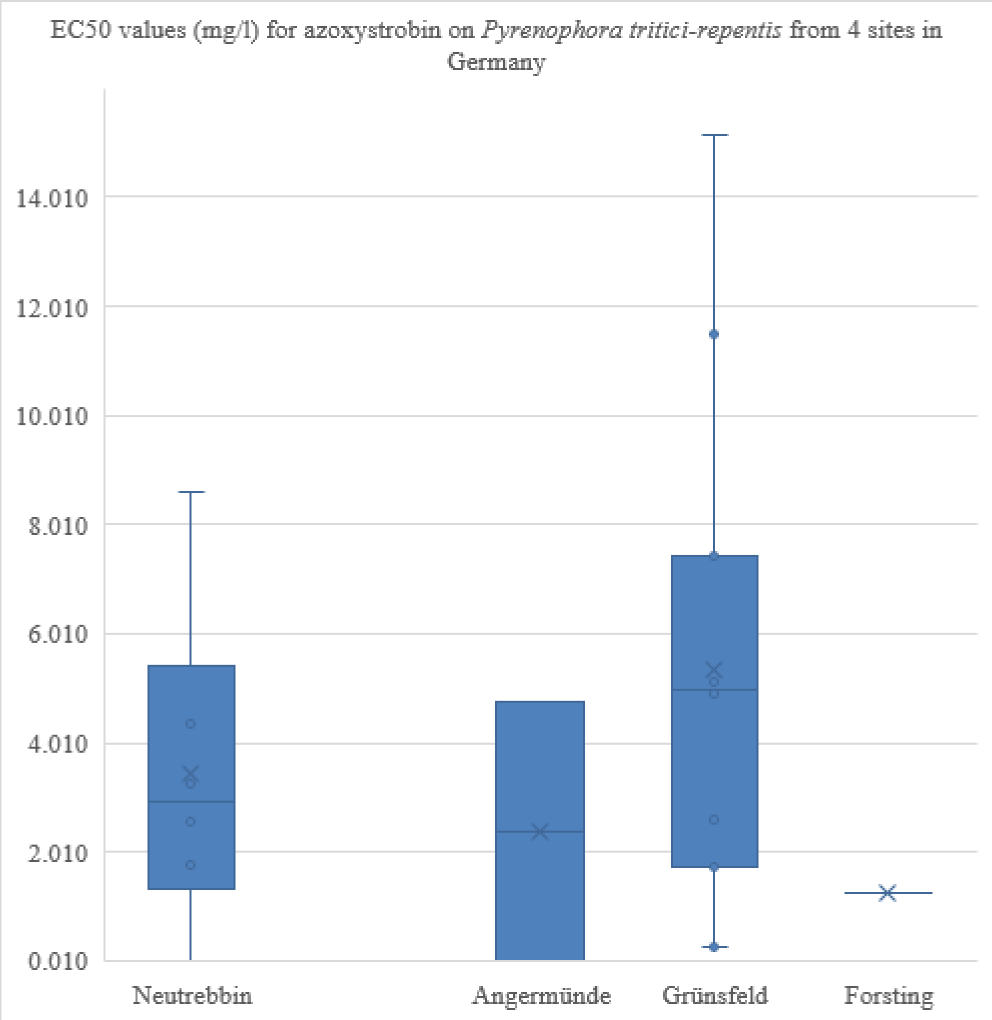

Figure 3.3.5-30: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora tritici-repentis* strains from 4 sites in Germany in 2018

Across all isolates 80% were calculated to be resistant, however the proportions varied among the sites from 50% in Angermünde / Gellmesdorf, where only 1 sample was resistant, to 82% in Grünsfeld (with a sample size of 11), 83% in Neutrebbin (with a sample size of 6) and the sole sample from Forsting, giving a 100% proportion for that site.

Diversity values were high for all sites which had more than one sample as shown in Figure 3.3.5-30.

<u>Results 2019</u>

Information on the samples and the mean, minimum and maximum EC_{50} and EC_{98} value are presented in Table 3.3.5-18. The range of EC_{50} from the test samples was from 0.005 to 15.279 mg/l. The overall mean EC_{50} value from all isolates was 4.711 mg/l. The majority of the data was between EC_{50} values of 1.304 and 7.591 as shown in Figure 3.3.5-31.

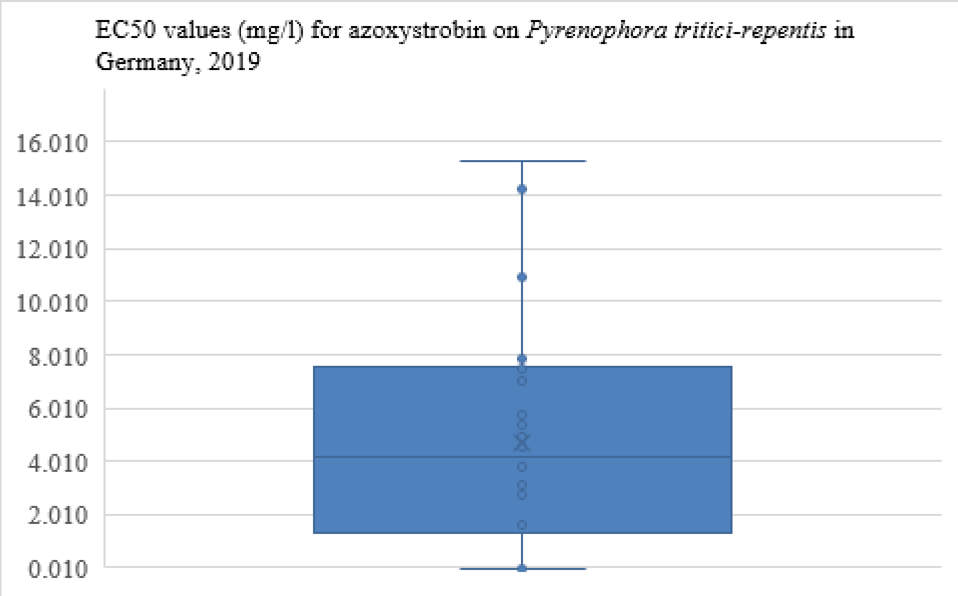

Figure 3.3.5-31: EC$_{50}$ values (mg/l) for azoxystrobin on *Pyrenophora tritici-repentis* strains from all sites in Germany in 2019.

The mean EC$_{50}$ of the reference strains known to be susceptible to QoI fungicides was reported to be 0.0055 mg/l azoxystrobin This reference is therefore used as the "baseline" reference in this analysis. The majority of samples were less sensitive to azoxystrobin compared to the reference strains and the Resistance Factor (RF) based on mean EC$_{50}$ values for the different regions ranged from 1.5 (Hipoltstein) to 1006 (Poppenhausen).

In this year also two resistant reference strains were used for comparison in the results analysis. One reference strain with a G143A mutation and EC$_{50}$ of 4.804 mg/l azoxystrobin, and one reference strain with mutation F129L/G137R and EC$_{50}$ of 0.128 mg/l azoxystrobin. As stated above and described further in Section 6.3, the mutations F129L/G137R do not necessarily lead to in-field resistance.

For calculations of the proportion of resistant individuals, values up to 0.301 mg/l are classed as having only a slight resistance and values of 1.639 and above classed as fully resistant.

Across all isolates 77% were calculated to be resistant, however the proportions varied among the sites with Haby, Poppenhausen, Schwarzach and Ehlheim having all (100%) resistant samples from sample sizes of 9, 3, 2 and 1 respectively, and Werneck having 63% (5 of 8), whilst none (0%) of the 3 samples from Hipoltstein showed resistance.

Diversity values were low for all sites except Werneck, which had a very low minimum EC$_{50}$ of 0.010. The variability is also presented in Figure 3.3.5-32.

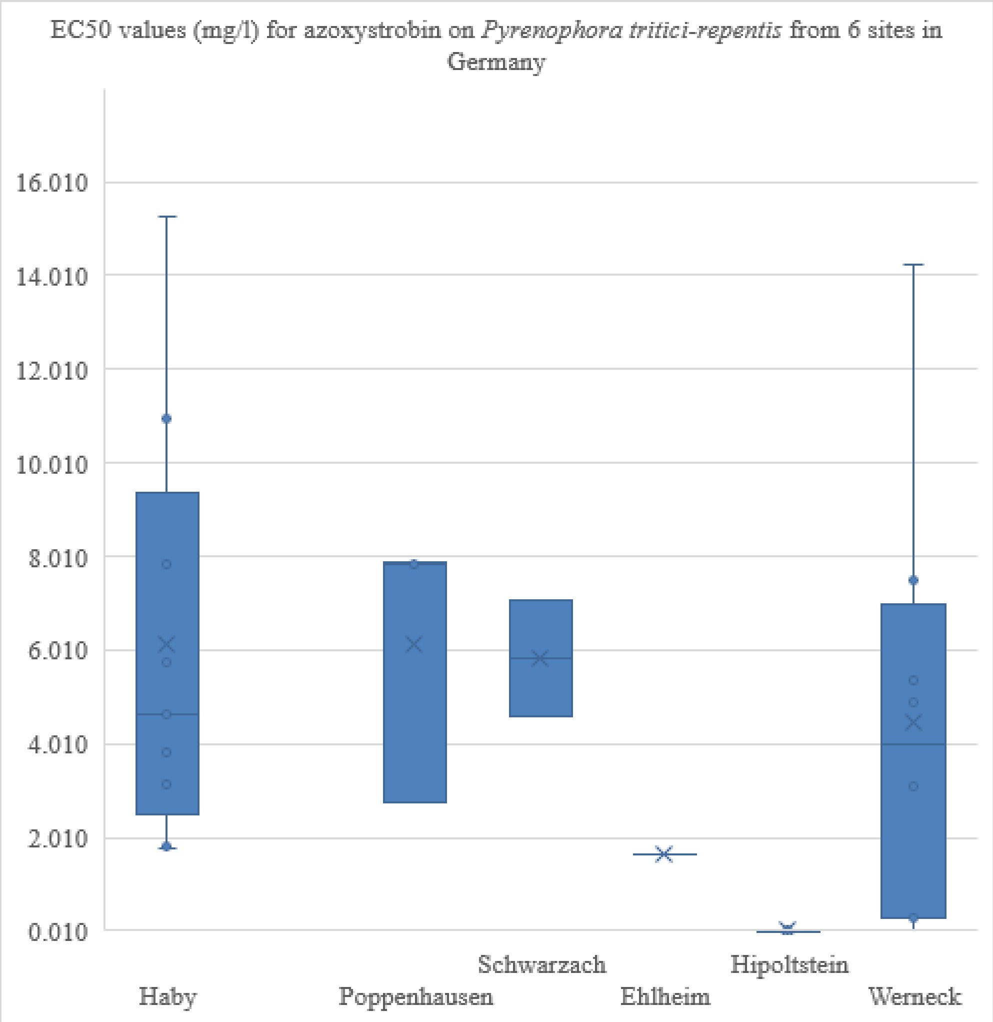

Figure 3.3.5-32: EC_{50} values (mg/l) for azoxystrobin on *Pyrenophora tritici-repentis* strains from 6 sites in Germany in 2019

Table 3.3.5-16: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora tritici-repentis* in samples from Germany towards azoxystrobin, 2017

Region	**Date**	**n**	**MEC_{50}**	***Mean RF****	**No/% resistant isolates**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Field samples								
Prenzlau	20/06/17	1	1.707	***100.44***	1/100	-	-	-
Riesigk	19/06/17	2	0.005	***0.2***	0/0	0.004	0.005	***1.3***
Berßel	20/06/17	5	0.163	***9.61***	3/60	0.004	2.818	***704.5***
Wilsdruff	09/06/17	2	2.045	***120.31***	2/100	0.930	4.500	***4.8***
Fuchshain	27/06/17	2	1.188	***69.9***	2/100	0.834	1.694	***2.0***
Nossen	05/07/17	2	1.576	***92.71***	2/100	1.454	1.708	***1.2***
Niedersemsing	26/06/17	8	0.053	***3.12***	3/37.5	0.004	2.507	***626.8***
Among isolates	2017	22	1.064	***62.59***	13/59	0.004	4.50	***1125.0***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2017	7	-	-	-	0.005	2.045	***1022.5***
Standard isolates								
Standard isolate possessing an original unselected 'wild-type' sensitivity towards QoIs		1	**0.017**	-	-	-	-	-
Standard isolate with mutation G143A with resistance to QoIs		1	**2.055**	-	-	-	-	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-17: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora tritici-repentis* in samples from Germany towards azoxystrobin, 2018

Region	**Date**	**n**	**MEC_{50}**	***Mean RF****	**No/% resistant isolates all mutations**	**EC_{50} min**	**EC_{50} max**	***Diversity factor***
Field samples								
Neutrebbin	12/06/18	6	1.444	***206.3***	5/83	0.016	8.617	***538.6***
Angermünde / Gellmesdorf	18/06/18	2	0.159	***22.7***	1/50	0.005	4.756	***951.2***
Grünsfeld	15/06/18	11	3.098	***442.6***	9/82	0.251	15.154	***60.4***
Forsting	05/07/18	1	1.234	***176.3***	1/100	-	-	-
Among isolates	2018	20	4.277	***611.0***	16/80	0.005	15.154	***3030.8***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2018	4	-	-	-	0.159	3.098	***19.5***
Standard isolates								
Standard isolate possessing an original unselected 'wild-type' sensitivity towards QoIs		2	**0.007**	-	-	0.005	0.010	-
Standard isolate with mutation F129L/G137R with resistance to QoIs		1	**0.109**	-	-	-	-	-
Standard isolate with mutation G143A with resistance to QoIs		1	**3.208**	-	-	-	-	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Table 3.3.5-18: Sensitivity (EC_{50} in mg/l a.i.) of *Pyrenophora tritici-repentis* in samples from Germany towards azoxystrobin, 2019

Region	Date	n	MEC_{50}	*Mean RF**	No/% resistant isolates	EC_{50} min	EC_{50} max	*Diversity factor*
Field samples								
Haby	15/07/19	9	4.809	***874.4***	9/100	1.787	15.279	***8.6***
Poppenhausen	25/06/19	3	5.533	***1006.0***	3/100	2.750	7.862	***2.9***
Schwarzach	16/06/19	2	5.688	***1034.2***	2/100	4.583	7.060	***1.5***
Ehlheim	01/07/19	1	1.639	***298.0***	1/100	-	-	-
Hipoltstein	01/07/19	3	0.008	***1.5***	0/0	0.005	0.013	***2.6***
Werneck	02/07/19	8	1.283	***233.3***	5/63	0.010	14.225	***1422.5***
Among isolates	2019	26	4.711	***856.5***	20/77	0.005	15.279	***3055.8***
						MEC_{50} min	**MEC_{50} max**	
Among sites (samples)	2019	6	-	-	-	0.008	5.688	***711.0***
Standard isolates								
Standard isolate possessing an original unselected 'wild-type' sensitivity towards QoIs		2	**0.0055**	-	-	0.005	0.006	-
Standard isolate with mutation F129L/G137R with resistance to QoIs		1	**0.128**	-	-	-	-	-
Standard isolate with mutation G143A with resistance to QoIs		1	**4.804**	-	-	-	-	-

*RF= resistance factor: MEC_{50}/Reference EC_{50}
Diversity factor = max EC_{50}/ min EC_{50}

Conclusion on *Pyrenophora tritici-repentis* in Germany

Sensitivity data from 3 consecutive years is presented for *Pyrenophora tritici-repentis* from samples taken across various regions in Germany. The dataset is somewhat limited however as not all field samples provided viable isolates for assessment.

Samples were taken from different sites over the years hence it is not possible to present a comparison over the 3 years.

For this pathogen there were large variability in sensitivities among different regions, and also among isolates from the same region in some instances. In contrast, other samples provided consistently low resistance values across all isolates as observed from Riesigk in 2017 and Hipoltstein in 2019.

For this pathogen the lab considered an isolate to be resistant when the EC_{50} values were equal to or above those of the resistant reference strains with either G143A mutation or in 2018-2019 also compared to strains with F129L/G137R mutations. For the latter strain the EC_{50} values were not always significantly higher than the sensitive strains. It is worth considering also the effect these mutations have on field resistance. As discussed in section 6.3.2 above the F129L and G137R mutations result in lower resistance effects which are usually not discernible in field effects.

Nevertheless, the majority of samples had higher EC_{50} values compared to the sensitive standard isolates, and many samples had values comparable with that of the G143A mutation strains.

The data therefore supports the reports of resistance development of PYRNTR to azoxystrobin in some areas of Germany in the EPPO database as presented in Table 3.3.3-4.

Overall conclusions on sensitivity data

Testing was undertaken in the CEU regulatory zone on the sensitivity of azoxystrobin and prothioconazole against a range of target pathogens between 2016 and 2021. All testing was undertaken by Epilogic in Germany. Sensitivity data is presented on *Puccinia hordei, Puccinia triticina, Puccinia striiformis f. sp. tritici*, *Pyrenophora teres* and *Pyrenophora tritici-repentis* for azoxystrobin and on *Zymoseptoria tritici*, *Erysiphe graminis f.sp. tritici* and *Pyrenophora teres* for prothioconazole.

The findings from the monitoring support the information presented in the rest of this section from EPPO, FRAC and other verified sources.

Prothioconazole remains effective against the tested pathogens with low RF values and low diversity, which is supported by no EPPO reports of resistance in the CEU area for *Pyrenophora teres* and *Erysiphe graminis f.sp. tritici* against this substance, and the reports that *Zymoseptoria tritici* has higher sensitivity to prothioconazole compared to other Group 3 fungicides.

Similarly, for azoxystrobin, the data shows no current resistance risk from *Puccinia* spp., with low diversity, low EC_{50} values and no significant increase over the years tested, and no EPPO reports of resistance from these species with the exception of 1 single isolated case in the UK. However, against *Pyrenophora* spp., some resistant populations were found. For *Pyrenophora teres*, there was variation among the different sites, inconsistent trends over time from the same site, and inconsistent overall mean values across the years, with a higher MEC in 2017 compared to later years. For *Pyrenophora tritici-repentis*, there was also variation among the different sites in terms of RF values and diversity, but for this species the mean EC_{50} values and RF values increased over time. These findings tie in with the EPPO reporting whereby resistance in *P. tritici-repentis*, is reported in Germany with the G143A mutation at a moderate level and for *P. teres*, the reports from Germany identify the F129L mutation which is established to have more variable field effects.

These findings also support the use of the combination of these 2 modes of action against the common target pathogens to ensure more effective control and reduce the risk of resistance development.

3.3.6 Use pattern

The proposed use for CA3642 is for 1-2 applications against a range of pathogens in cereals and oilseed rape. These crops are usually grown in rotation. It is anticipated that CA3642 would be used in a disease control programme with other products with differing modes of action.

3.3.7 Resistance risk assessment of unrestricted use pattern

In order to evaluate the risk of pathogens to develop resistance to fungicides under specific agronomic conditions, the Fungicide Resistance Action Committee (FRAC) established a classification based on experience and reported resistance claim over the past 45 years. Information is taken from FRAC pathogen risk list 2019.
Generally, the risk increases when a pathogen undergoes many and short disease cycles per season, when the dispersal through spores over time and space is high, when sexual recombination is mandatory in the disease cycle and the competitive ability of resistant individual is at least as high as that of the wild type (in the absence of selection pressure). Furthermore the risk is considered as high when resistance evolved already after few years of product use.

Inherent risk of pathogen
According to these criteria, the FRAC defined 3 pathogen risk classes:

- High risk of resistance development: Plant pathogens from major world markets have evolved resistance to fungicides in a time span sufficiently short to be serious threat to the commercial success of more than one fungicide class.
- Medium risk of resistance development: Pathogens posing a much lower risk because resistance is not a major problem or has been slow to develop. In some cases this due to the pattern of product use.
- Low risk of resistance development: resistance occurred only to one chemical class but not to others and therefore, the pathogen is considered as low risk pathogen. Pathogens of local importance but considered as minor pathogens in commercial market terms.

Table 3.3.7-1 summarizes the risk of the targeted pathogens to develop a resistance to fungicides, according to the information in the FRAC pathogen risk list (2019).

Table 3.3.7-1: Risk of pathogens to develop a resistance to fungicides

Target disease	Target crop	Pathogen risk class
Alternaria brassicae	Oilseed rape	Medium risk
Blumeria graminis	Wheat/barley	High risk
Erysiphe cruciferarum	Powdery mildew	Medium risk
Fusarium spp	Wheat	Low risk
Leptosphaeria maculans	Oilseed rape	Low risk
Oculimacula spp.	Wheat / barley	Medium risk
Parastagonospora nodorum	Wheat	Low risk
Puccinia spp.	Wheat / barley, various	Low risk
Pyrenopeziza brassicae	Oilseed rape	Medium risk
Pyrenophora teres	Barley	Medium risk
Pyrenophora tritici-repentis	Wheat	Medium risk
Ramularia collo-cygni	Barley	High risk
Rhynchosporium secalis	Barley	Low risk
Sclerotinia sclerotiorum	Oilseed rape	Low risk
*Zymoseptoria tritici**	Wheat	Medium risk

* EPPO standard lists this as high risk

Inherent risk of fungicide

As presented above in evidence of resistance, cases of resistance have been reported for Group 3 (DMI) and Group 11 (QoI) fungicides. According to the FRAC, the DMI group of fungicides belongs to the medium risk class for resistance, and QoI fungicides are classes as high risk:

Group name	**Active substance risk class**
DMI Group 3	Medium risk
QoI Group 11	High risk

<u>Combined risk</u>

The FRAC established a combined risk diagram based on inherent fungicide risk and inherent pathogen risk. The combined risk diagram for prothioconazole and azoxystrobin versus the targeted diseases of the GAP is summarized in Table 3.3.7-2.

Table 3.3.7-2: Combined resistance risk

Fungicide risk		**Combined risk**		
Prothioconazole	**MEDIUM** = 2	2 x 1 = **2**	2 x 2 = **4**	2 x 3 = **6**
Azoxystrobin	**HIGH = 3**	3 x 1 = **3**	3 x 2 = **6**	3 x 3 = **9**
Pathogen risk		**LOW = 1**	**MEDIUM** = 2	**HIGH** = 3
		Fusarium spp. *Leptosphaeria maculans* *Parastagonospora nodorum* *Puccinia spp.,* *Rhynchosporium secalis* *Sclerotinia sclerotiorum*	*Alternaria brassicae* *Erysiphe cruciferarum* *Oculimacula spp.* *Pyrenopeziza brassicae* *Pyrenophora teres* *Pyrenophora tritici-repentis*	*Blumeria graminis* *Ramularia collo-cygni* *Zymoseptoria tritici**

Combined risk: 0.5-1.5: Low; 2-6: Medium; 9: High
Fungicide risk: 1: low / 2: medium / 3: high
Pathogen risk: 1: low / 2: medium / 3: high

According to the risk matrix for unmodified use the highest risk occurs when azoxystrobin is applied to control *Blumeria graminis* or *Zymoseptoria tritici* on cereals and *Ramularia collo-cygni* on barley with a combined risk of 9, indicating a high risk. For the remaining pathogens and for all pathogens for azoxystrobin the combined risk is medium.

However, as CA3642 is a coformulation with 2 different modes of action, there is some modification of the risk. Nevertheless, for the purposes of the risk assessment the unmodified use of CA3642 is considered medium to high.

3.3.8 Test methods

The resistance risk assessment has been undertaken according to the EPPO standard PP 1/213, covering all aspects indicated in this document. The evidence of resistance provided has been sourced from the EPPO resistance database with the inclusion of additional information provided by FRAC.

3.3.9 Acceptability of the resistance risk

EPPO standard PP 1/213 indicates that the acceptability of the resistance risk should take into account the inherent risk of the active substance and targets and also the agronomic risk. The agronomic risk depends on a number of factors as stated in the standard:

The risk of resistance inherent in the plant protection product and the pest can be increased by certain conditions of use. This agronomic risk affects selection pressure on the development of resistance and is influenced by the particular characteristics of the crop, the geographic area in which the product is applied and the use pattern. The factors influencing the agronomic risk may include:

- *widely grown crop with short rotations;*
- *monocropping or continuous cropping;*
- *application techniques;*
- *other cultural practices (e.g. fertilizers, cultivation);*
- *need for high numbers of applications or long exposure to obtain control, because of the features of the crop environment;*
- *use of transgenic plants with genes expressing pesticidal activity;*
- *use of cultivars susceptible to the pest(s);*
- *geographic isolation of populations preventing the re-entry of sensitive forms;*
- *environmental conditions favouring more frequent generations or higher population densities of the pest e.g. in protected crops; a greater risk of resistance has been demonstrated where fungicides are used on protected crops (defined as a crop grown in a glasshouse or polytunnel) than on outdoor crops. This is known also for insecticides.*
- *exclusive reliance on a single active substance;*
- *lack of diversity of available control measures.*

Considering the proposed uses for CA3642 the overall agronomic risk is considered low to medium since the crops are grown in rotation and grown outside rather than being in protected/isolated conditions, other active substances with different modes of action are available to use against the pathogens, resistant cultivars are available and there are cultural methods to reduce disease infestation such as removal of debris. In addition, the applications are restricted to 1 or 2 applications.

Taking into account that the inherent risk of the active substances is **medium to high**, the inherent risk of the target pathogens is **low to high** and the agronomic risk is **low to medium,** it is considered that for some pathogens the resistance risk of unmodified use may be unacceptable, therefore a management strategy is proposed to reduce the risk of resistance development.

3.3.10 Resistance management strategy

Managing the risk of resistance for any PPP relies on using good agricultural practice and the core aspects of this are appropriate to any crop/pest pairing. The management of resistance risk involves a number of key aspects, FRAC provide the following critical recommendations for the management of resistance risk for fungicides:

- Do not use the same product exclusively
- Restrict the number of treatments applied per season
- Maintain manufacturers’ recommended dose
- Avoid eradicant use
- Employ integrated disease management e.g. variety choice, rotation, crop hygiene, biopesticides
- Maintain chemical diversity

Prothioconazole

Specific advice is also provided by FRAC on the use of the group of fungicides to which prothioconazole belongs, and following for the use of these on cereals.

General recommendations for use of SBI (Group G) fungicides:

- Repeated application of SBI fungicides alone should not be used on the same crop in one season against a high-risk pathogen in areas of high disease pressure for that particular pathogen.
- For crop/pathogen situations where repeated spray applications (e.g. orchard crops/powdery mildew) are made during the season, alternation (block sprays or in sequence) or mixtures with an effective non cross-resistant fungicide are recommended.
- Where alternation or the use of mixtures is not feasible because of a lack of effective or compatible non cross-resistant partner fungicides, then input of SBI's should be reserved for critical parts of the season or crop growth stage.
- If the performance of SBIs should decline and sensitivity testing has confirmed the presence of less sensitive isolates, SBIs should only be used in mixture or alternation with effective non cross-resistant partner fungicides.
- The introduction of new classes of chemistry offers opportunities for more effective resistance management. The use of different modes of action should be maximized for the most effective resistance management strategies.
- Users must adhere to the manufacturers' recommendations. In many cases, reports of "resistance" have, on investigation, been attributed to cutting recommended use rates, or to poorly timed applications.
- Fungicide input is only one aspect of crop management. Fungicide use does not replace the need for resistant crop varieties, good agronomic practice, plant hygiene/sanitation, etc.
- Exclusive frequency measurements of single cyp51 mutations are not sufficient to describe the sensitivity situation towards DMIs but can help to better understand the background of sensitivity shifts.

Specific recommendations for SBI fungicides on cereals (FRAC, 2022)

- Follow strictly the manufacturer's and FRAC recommendations.
- Repeated application of DMI fungicides alone should not be used on the same crop in one season against risky pathogens (e.g. cereal powdery mildews, barley net blotch, scald) in areas of high disease pressure for that particular pathogen.
- Reduced rates of DMIs can contribute to accelerate the shift to less sensitive populations. It is critical to use effective rates of DMIs in order to ensure robust disease control and effective resistance management. DMIs must provide effective disease control and be used at manufacturers recommended rates.
- When used in mixture recommended effective rates of the SBI must be maintained. Split and reduced rate programmes, using multiple repeated applications at dose rates below manufacturer's recommendations, provide continuous selection pressure and accelerate the development of resistant populations, and therefore must not be used.
- To ensure good performance and particularly resistance management in situations of even low disease pressure it is essential to adhere to dosages and spray timings as recommended by manufacturers. Curative applications should be avoided. Application timing has to be appropriate to all mix partners' characteristics. Mixing with a non-cross resistant fungicide at effective dose rates contributes to a more effective disease control and resistance management.
- The amine fungicides are effective non-cross-resistant partner fungicides for DMIs on cereals for the control of pathogens included in the label recommendation of each respective product.

<u>Azoxystrobin</u>

General advice is also provided by FRAC on the use of the QoI fungicides, and specific advice for the use of these in crop types:

Strategies for the management of QoI fungicide resistance, in all crops, are based on the statements listed below. These statements serve as a fundamental guide for the development of local resistance management programs. Resistance management strategies have been further enhanced in order to be proactive and to prevent the occurrence of resistance to QoI fungicides developing in other areas and pathogens. Specific guidelines by crop follow the general guidelines given here.

General guidelines for the use of QoI fungicides

A fundamental principle that must be adhered to when applying resistance management strategies for QoI fungicides is that:

- The QoI fungicides (azoxystrobin, coumoxystrobin, dimoxystrobin, enoxastrobin, famoxadone, fenamidone, fenaminostrobin, fluoxastrobin, flufenoxystrobin, kresoxim-methyl, mandestrobin, metominostrobin, orysastrobin, pyraoxystrobin picoxystrobin, pyraclostrobin, pyrametastrobin, pyribencarb, triclopyricarb trifloxystrobin) are in the same cross-resistance group; ; FRAC Code 11
- The QoI fungicide in subgroup A (metyltetraprole), Code 11A fungicide, is not cross resistant with Code 11 fungicides in pathogens with G143A mutation.
- Fungicide programmes must deliver effective disease management. Apply QoI fungicide based products at effective rates and intervals according to manufacturers' recommendations. Effective disease management is a critical component to delay the build-up of resistant pathogen populations. The number of applications of QoI fungicide based products within a total disease management program must be limited whether applied solo or in mixtures with other fungicides. This limitation is inclusive to all QoI fungicides. Limitation of QoI fungicides within a spray programme provides time and space when the pathogen population is not influenced by QoI fungicide selection pressure.
- Limitation of the total number of QoI applications is detailed in the specific crop recommendations. In consideration of the cross-resistance profile of subgroups 11 and 11A, the maximum allowed number of QoI-containing sprays is increased by one, where both QoI fungicides (code 11) and QoI fungicides in subgroup A (code 11A) are included in a spray program in a given cropping season. All crop-specific recommendations will be regularly reviewed based on sensitivity monitoring.
- A consequence of limitation of QoI fungicide based products is the need to use it in a spray program with effective fungicides from different cross-resistance groups (refer to the specific crop recommendations).
- QoI products, containing only the solo QoI fungicide, should be used in single or block applications in alternation with fungicides from a different cross-resistance group. Specific recommendation on the number of consecutive treatments (size of blocks) is given for specific crops.
- Mixture partners for QoI fungicides should be chosen carefully to contribute to effective control of the targeted pathogen(s). The mixture partner must have a different mode of action, and in addition it may increase spectrum of activity or provide needed curative activity. Use of mixtures containing only QoI fungicides (including two-way mixtures of code 11 fungicide and code 11A fungicide) must not be considered as an anti-resistance measure.
- An effective partner for a QoI fungicide is one that provides satisfactory disease control when used alone on the target disease.
- QoI fungicides are very effective at preventing spore germination and should therefore be used at the early stages of disease development (preventive treatment).

Guidelines for using QoI fungicides on cereal crops

1. Apply QoI fungicides always in mixtures with non-cross resistant fungicides to control cereal pathogens. At the rate chosen the respective partner(s) on its/ their own has/ have to provide effective disease control. Refer to manufacturers recommendations f or rates.
2. The maximum number of QoI-containing sprays is 3, but only when QoI fungicides belonging to both QoI Groups (code 11 and 11A) are included in a spray program. QoI fungicides belonging to the individual Codes (11 or 11A) should not be applied more than 2 times either individually or when mixed together.

3. Apply QoI fungicides according to manufacturer's recommendations for the target disease (or complex) at the specific crop growth stage indicated.
4. Apply the QoI fungicide preventively or as early as possible in the disease cycle. Do not rely only on the curative potential of QoI fungicides.
5. Split / reduced rate programmes, using repeated applications, which provide continuous selection pressure, accelerate the development of resistant populations and therefore must not be used.

The recommendations for both Group 3 and Group 11 fungicides follow the same principles, i.e preventative applications, rotation of different modes of action, use more than one mode of action and apply according to manufacturers recommendations. These principles also match the proposed use of CA3642, since th product is a co-formulation of 2 different modes of action at optimum rates and applications are limited to a maximum of 2 per crop.

Integrated disease management is also recommended in terms of reducing the infection of the crop by cleaning machinery and removing crop debris; using cultivars which are less susceptible to disease, practising crop rotation; considering drilling times and density in relation to disease development; frequent monitoring of crop and use of disease forecast information to allow optimal application timing of pesticides and the use of biopesticides where available.

In conclusion the management strategy is based on ensuring that users follow label advice and good agricultural practices and consider an integrated approach to disease management.

3.3.11 Implementation of the management strategy

The resistance management strategy will be implemented through label advice, supported by local recommendations from distributors and technical advisers. Labels will clearly indicate the mode of action of the active substances.

Directions for use on the product label clearly present Good Agricultural Practice as outlined in Table 3.1-1 i.e. dose rate, application timing and number of applications. The mode of action group of the product components is clearly shown on the product label in order to enable users to rotate with different fungicide groups. A resistance statement on the label directs users to consider suitable resistance strategies. Resistance management advice will be included on Member State product labels in accordance with this strategy and national guidelines.

3.3.12 Monitoring, reporting and reaction to changes in performance

In addition to the preventive management of risk of resistance, Nufarm is committed to reporting any developments related to the efficacy of CA3642 based on resistance arising to prothioconazole or azoxystrobin to the regulatory authorities of concerned Member States according to Article 56 4 of Regulation EU 1107/2009.

Comments of zRMS:

CA3642 contains two active substances of prothioconazole and azoxystrobin. Prothioconazole belongs to the chemical group of triazolinthiones (FRAC Group 3, DMI-fungicides) with medium risk class for resistance. Azoxystrobin belongs to the chemical group of methoxy-acrylates (FRAC Group 11, QoI-fungicides) with high risk class for resistance. According to the EPPO database, there are reported 5 confirmed cases of resistance on prothioconazole which relate to SEPTTR on wheat (in Belgium and Denmark) and RAMUCC on barley (in Germany, Denmark and Austria). For the DMI-fungicides there are total of 27 cases reported on the database. However, only 13 cases relevant for CA3642 are for FUSACU on winter wheat, RHYNSE on barley, ERYSGR/ERYSGH on winter wheat and barley, RAMUCC on barley and SEPTTR on wheat. Furthermore, 28 confirmed cases of resistance are reported on the EPPO database for QoI-fungicides. Of these, 27 cases specifi-

cally include azoxystrobin. The remaining cases related to ERYSGR/ERYSGH on wheat and barley, MONGNI on wheat, PUCCHD on barley, PYRNSP on wheat or barley, RAMUCC on barley, RHYNSE on barley and SEPTTR on wheat. Based on information presented by the applicant, there are reported a number of cases of incomplete cross-resistance among the DMI-fungicides. Positive corelation between propiconazole, tebuconazole and epoxiconazole has been observed but prothioconazole remained effective. According to FRAC cross-resistance has been shown between all members of the Group 11 fungicides, although not to members of Group 11A, which are also QoI fungicides. Sensitivity data presents that prothioconazole remains effective against the tested pathogens with low RF values and low diversity. Similarly, for azoxystrobin, the data shows no current resistance risk from *Puccinia* spp., with low diversity, low EC_{50} values and no significant increase over the years tested, and no EPPO reports of resistance from these species with the exception of 1 single isolated case in the UK. According to FRAC Pathogen Risk List (2019) two claimed pathogens of *Blumeria graminis* and *Ramularia collo-cygni* belong to high risk class. Also several pathogens are included to medium risk class. Based on the risk matrix for unmodified use, CA3642 is considered medium to high. Taking into account that the inherent risk of the active substances is medium to high, the inherent risk of the target pathogens is low to high and the agronomic risk is low to medium, the anti-resistance strategy should be included to the product label. The below recommendations are justified in opinion of zRMS:
- the higher dose rate is recommended to use at higher disease pressure
- do not exceed the maximum recommended number of applications (2 applications per growing season for cereals and 1 application for winter oilseed rape)
- use CA3642 in rotation with other products containing active substances belonging to other chemical group with a different MoA
- use other than chemical methods of protection against diseases, compliant principles of integrated pest management

3.4 Adverse effects on treated crops (KCP 6.4)

All trials were also used for efficacy evaluation. Therefore, detailed information on trial methodology is available in Table 3.2-252 and distribution of trials is displayed in Table 3.2-14.

3.4.1 Phytotoxicity to host crop (KCP 6.4.1)

Wheat (TRZAW)

TRZAW – Maritime EPPO zone

Table 3.4-1: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total (No. Trials)	No. trials where phytotox was observed	Varieties tested (No. trials)
41	0	Akteur, Apache (2), Basset, Belepi(2), Bennington(2), Boregar, Butterfly, CHEVRON, Claire, Elation, ES Cesario, EXPERT, Firefly, Gleam, Gravity(2), KWS Santiago, Monopol(3), OREGRAIN(2), Revelation, Ritmo, RUBISKO, Siskin, Skyfall(6), Skyscraper, SU Tobak, Tobak(3), WINNER

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha. Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter wheat varieties in the Maritime EPPO Zone.

Table 3.4-2: Phytotoxicity of CA3642 observed in winter wheat – Maritime EPPO zone

		Efficacy trials (41 trials)	
		CA3642	**Reference**
		1-2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	41	41
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	41	41
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 41 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter wheat.

TRZAW – North-East EPPO zone

Table 3.4-3: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total (No. Trials)	No. trials where phytotox was observed	Varieties tested (No. trials)
38	0	ARKADIA(3), Artist, Banderola(2), DELAWAR, Edvins, Emil, Etana(3), Etna, Euforia, Famulus, Hondia(2), Jantarka, Kilimandzaro, KWS Emil, Markiza, Medalistka, Ozon(5), Skagen(7), Solechio, Urbanus, WILEJKA(2)

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha. Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter wheat varieties in the North-East EPPO Zone.

Table 3.4-4: Phytotoxicity of CA3642 observed in winter wheat – North-East EPPO zone

		Efficacy trials (38 trials)	
		CA3642	**Reference**
		1-2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	38	38
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	38	38
	>5% to 10%	0	0

		Efficacy trials (38 trials)	
		CA3642	**Reference**
		1-2-1.4 L/ha	**N**
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 38 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter wheat.

TRZAW – South-East EPPO zone

Table 3.4-5: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total (No. Trials)	No. trials where phytotox was observed	Varieties tested (No. trials)
25	0	Antonius, Avenue, Bernstein, Capo, Complice, EMILIO, Exotic, FALADO, Farmeur, GK Csillag, GLOSA(2), IZALKO, IZVOR, LENNOX, Levante, MIDAS, MIRANDA(2), MV Ikva, MV NÁDOR, PG102, REBELL, Sorialis, Spontan

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha. Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter wheat varieties in the South-East EPPO Zone.

Table 3.4-6: Phytotoxicity of CA3642 observed in winter wheat – South-East EPPO zone

		Efficacy trials (25 trials)	
		CA3642	**Reference**
		1-2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	25	25
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	25	25
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 25 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter wheat.

Summary Wheat (TRZAW)

The application of CA3642 at rates of 1.2-1.4 L/ha (180-200 g azoxystrobin and 180-200 g prothioconazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to winter wheat.

Spelt (TRZSP)

TRZSP – North-East EPPO zone

In a total of one trial from the North-East EPPO zone, potential phytotoxic symptoms were assessed. The trial was carried out in Poland in 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-7 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-7: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
1	0	Wirtas

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha. Therefore, it can be concluded that CA3642 is safe for application to a wide range of Spelt varieties in the North-East EPPO Zone.

Table 3.4-8: Phytotoxicity of CA3642 observed in Spelt – North-East EPPO zone

		Efficacy trials (2 trials)	
		CA3642	Reference
		1.2-1.4 L/ha	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	1	1
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	1	1
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 1 efficacy trial. No negative symptoms were observed in this trial. CA3642 is safe for spelt wheat.

Summary Spelt (TRZSP)

The application of CA3642 at rates of 1.2-1.4 L/ha (180-200 g azoxystrobin and 180-200 g prothioconazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to Spelt.

Durum Wheat (TRZDU)

TRZDU – Maritime EPPO zone

In a total of five trials from the Maritime EPPO zone, used for efficacy evaluation, potential phytotoxic symptoms were assessed on winter-sown durum wheat. Trials were carried out in Germany 3 trials) and France (2 trials) in 2019 and 2021. Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.

Table 3.4-9 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-9: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
5	0	Wintergold (3), Voilur, Anvergur

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-10). Therefore, it can be concluded that CA3642 is safe for application to a wide range of durum wheat varieties in the Maritime EPPO Zone.

Table 3.4-10: Phytotoxicity of CA3642 observed in durum wheat – Maritime EPPO zone

		Efficacy trials (5 trials)	
		CA3642	Reference
		1.2-1.4 L/ha	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	5	5
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	5	5
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 5 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter durum wheat.

TRZDU (spring sown) – Maritime EPPO zone

In one trial durum wheat-spring sown (TRZDU) from the Maritime EPPO zone, used for efficacy evaluation, potential phytotoxic symptoms were assessed. This trial was carried out in Germany in 2021.

Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.

Table 3.4-11 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-11: Durum wheat-spring sown (TRZDU) - Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
1	0	Duramonte

At dose rates of up to 1.4 L/ha phytotoxicity symptoms were not observed (Table 3.4-12). Therefore, it can be concluded that CA3642 is safe for application in durum wheat-spring in the Maritime EPPO Zone.

Table 3.4-12: Phytotoxicity of CA3642 observed in Durum wheat-spring – Maritime EPPO zone

		Efficacy trials (1 trial)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	1	1
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	1	1
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 1 efficacy trial. No negative symptoms were observed in this trial. CA3642 is safe for spring durum wheat.

TRZDU – South-East EPPO zone

In a total of three trials from the South-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Hungary (2) and Romania (1) in 2019 and 2020.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-7 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-13: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
3	0	Atoudur, Wintergold (2)

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-14). Therefore, it can be concluded that CA3642 is safe for application in durum wheat in the South-East EPPO Zone.

Table 3.4-14: Phytotoxicity of CA3642 observed in durum wheat – South-East EPPO zone

		Efficacy trials (2 trials)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	3	3
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	3	3
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 3 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter durum wheat.

Summary Durum Wheat (TRZDU)

The application of CA3642 at rates of 1.2-1.4 L/ha (180-200 g azoxystrobin and 180-200 g prothio-conazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to wheat durum.

Triticale (TTLWI)

TTLWI – Maritime EPPO zone

In a total of seven trials from the Maritime EPPO zone, used for efficacy evaluation, potential phyto-toxic symptoms were assessed. Trials were carried out in France and Germany between 2019 and 2020.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applica-tions of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-11 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-15: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
7	0	Lombardo (2), Talentro (2), Triskell, Temuco, Brehat

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-16). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter triticale varieties in the Maritime EPPO Zone.

Table 3.4-16: Phytotoxicity of CA3642 observed in winter triticale – Maritime EPPO zone

		Efficacy trials (7 trials)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	7	7
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	7	7
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 7 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter triticale.

TTLWI – North-East EPPO zone

In a total of two trials from the North-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Poland in 2019.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-7 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-17: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
2	0	Rotondo, Orinoko

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-18). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter triticale varieties in the North-East EPPO Zone.

Table 3.4-18: Phytotoxicity of CA3642 observed in winter triticale – North-East EPPO zone

		Efficacy trials (2 trials)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	2	2
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	2	2
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 2 efficacy trials. No negative symptoms were observed in both trials. CA3642 is safe for winter triticale.

TTLWI – South-East EPPO zone

In a total of five trials from the South-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Hungary and Romania between 2019 and 2020.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-19 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-19: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
5	0	Haiduc (2), Gorun, GK Szemes, *(Farmer's source (unknown))*

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-20). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter triticale varieties in the South-East EPPO Zone.

Table 3.4-20: Phytotoxicity of CA3642 observed in winter triticale – South-East EPPO zone

		Efficacy trials (5 trials)	
		CA3642	Reference
		1.2-1.4 L/ha	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	5	5
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	5	5
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 5 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter triticale.

Summary Triticale (TTLWI)

The application of CA3642 at rates of 1.2-1.4 L/ha (180-200 g azoxystrobin and 180-200 g prothioconazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to winter triticale.

Rye (SECCW)

SECCW – Maritime EPPO zone

In a total of five trials from the Maritime EPPO zone, used for efficacy evaluation, potential phytotoxic symptoms were assessed. Trials were carried out in Denmark, Great Britain and Germany between 2019 and 2021. One trial from France was excluded from efficacy evaluation due to low disease pressure, but still can be used for phytotoxicity assessments.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-11 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-21: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
6	0	Bendix, Benito, Binntto, Ducato, Danielo, Mephisto

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-16). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter rye varieties in the Maritime EPPO Zone.

Table 3.4-22: Phytotoxicity of CA3642 observed in winter rye – Maritime EPPO zone

		Efficacy trials (6 trials)	
		CA3642	Reference
		1.2-1.4 L/ha	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	6	6
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	6	6
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 6 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter rye.

SECCW – North-East EPPO zone

In a total of four trials from the North-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Poland and Latvia between 2019 and 2020.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-7 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-23: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
4	0	Dańkowskie Rubin, KWS Serafino, Tur, TUR F1

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-14). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter rye varieties in the North-East EPPO Zone.

Table 3.4-24: Phytotoxicity of CA3642 observed in winter rye – North-East EPPO zone

		Efficacy trials (2 trials)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	4	4
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	4	4
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 4 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter rye.

SECCW – South-East EPPO zone

In a total of three trials from the South-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Hungary and Romania between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.4 L/ha.
Table 3.4-19 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-25: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
3	0	Binnto, Dankowskie Diament, SUCEVEANA

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-26). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter rye varieties in the South-East EPPO Zone.

Table 3.4-26: Phytotoxicity of CA3642 observed in winter rye – South-East EPPO zone

		Efficacy trials (3 trials)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
Maximum of phytotoxicity	0% to 5%	3	3

		Efficacy trials (3 trials)	
		CA3642	**Reference**
		1.2-1.4 L/ha	**N**
recorded during the trials	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	3	3
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 3 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter rye.

Summary Rye (SECCW)

The application of CA3642 at rates of 1.2-1.4 L/ha (180-200 g azoxystrobin and 180-200 g prothioconazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to winter rye.

Oat (AVESS)

Oats (AVESS) - Maritime EPPO zone

In a total of four trials, potential phytotoxic symptoms were assessed. Trials were scattered across the Maritime (Germany) and carried out in 2019- 2020. Assessments included general phytotoxicity (PHYGEN) at different timings after 2 applications of CA3642 at dose rates of up to 1.0 L/ha.
Table 3.4-27 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-27: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total No. Trials	No. trials where phytotoxicity was observed	Varieties tested (No. trials)
4	0	Max, Prokop (2), Troll

In none of the trials were any phytotoxicity symptoms observed, at dose rates of up to 1.0 L/ha (Table 3.4-28). Therefore, it can be concluded that CA3642 is safe for application to a wide range oat varieties in the Maritime EPPO Zone.

Table 3.4-28: Phytotoxicity of CA3642 observed in oat-– Maritime EPPO zone

		Efficacy trials (4 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity	0% to 5%	4	4

		Efficacy trials (4 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
recorded during the trials	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	4	4
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 4 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for oat.

Oats (AVESS) - North-East EPPO zone

In a total of six trials, potential phytotoxic symptoms were assessed. Trials were scattered across the North-East zone (Poland and Latvia) and carried out in 2018 to 2020. Assessments included general phytotoxicity (PHYGEN) at different timings after two applications of CA3642 at dose rates of up to 1.0 L/ha.
Table 3.4-29 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-29: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total No. Trials	No. trials where phytotoxicity was observed	Varieties tested (No. trials)
6	0	KOZAK (2), Bingo, Breton, Gallant, Edivinis

In none of the trials were any phytotoxicity symptoms observed, at dose rates of up to 1.0 L/ha (Table 3.4-30). Therefore, it can be concluded that CA3642 is safe for application to a wide range oat varieties in the North-East EPPO Zone.

Table 3.4-30: Phytotoxicity of CA3642 observed in oat - North-East EPPO zone

		Efficacy trials (6 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	6	6
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	6	6
	>5% to 10%	0	0
	>10% to 15%	0	0

		Efficacy trials (6 trials)	
		CA3642	Reference
		1.0 L/ha	N
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 6 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for oat.

Oats (AVESS) - South-East EPPO zone

In a total of three trials, potential phytotoxic symptoms were assessed. Trials were scattered across the South-East zone (Romania) and carried out in 2019 to2021. Assessments included general phytotoxicity (PHYGEN) at different timings after two applications of CA3642 at dose rates of up to 1.0 L/ha. Table 3.4-31 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-31: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total No. Trials	No. trials where phytotoxicity was observed	Varieties tested (No. trials)
3	0	Prokop, Expresso, Mureseanca

In none of the trials were any phytotoxicity symptoms observed, at dose rates of up to 1.0 L/ha (Table 3.4-32). Therefore, it can be concluded that CA3642 is safe for application to a wide range oat varieties in the South-East EPPO Zone.

Table 3.4-32: Phytotoxicity of CA3642 observed in oat - South-East EPPO zone

		Efficacy trials (3 trials)	
		CA3642	Reference
		1.0 L/ha	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	3	3
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	3	3
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 3 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for oat.

Summary Oat (AVESS)

The application of CA3642 at a rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to oat.

Winter barley (HORVW)

In a total of 36 trials from the Maritime EPPO zone, used for efficacy evaluation, potential phytotoxic symptoms were assessed. Trials were carried out in Czech Republic, Germany, France and Great Britain and between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.0 L/ha.
Table 3.4-33 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-33: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
36	0	Beckenbauer (1), Carat (1), Etincel (4), Etincelle (2), Hawking (1), Kingsbarn (1), Kosmos (2), KWS Cassia (2), KWS Jaguar (1), KWS Meridian (1), KWS Orwell (2), KWS Wallace (1), Lomerit (2), Maltesse (1), Meridian (3), Orbit (2), Orwell (2), Rafaela (1), Sandra (1), SU Ellen (1), SU Virenni (1), Titus (1), Tonic (1), Triumf (1)

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.0 L/ha (Table 3.4-34). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter barley varieties in the Maritime EPPO Zone.

Table 3.4-34: Phytotoxicity of CA3642 observed in winter barley – Maritime EPPO zone

		Efficacy trials (36 trials)	
		CA3642	Reference
		1.0 L/ha	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	36	36
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	36	36
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 36 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter barley.

Winter barley (HORVW) – North-East EPPO zone

In a total of 26 trials from the North-East EPPO zone, potential phytotoxic symptoms were assessed.

Trials were carried out in Poland, Lithuania and Latvia between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.0 L/ha.
Table 3.4-35 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-35: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
26	0	Mercurio (1), Meridian (1), Tenor (1), Torerro (1), KWS Tenor (2), Meridian (6), Arenia (1), Concordia (1), Holmes (1), Impala (1), Jakubus (1), Kosmos (2), KWS Kosmos (2), Quadriga (2), Wootan (1), Zenek (2).

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-36). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter barley varieties in the North-East EPPO Zone.

Table 3.4-36: Phytotoxicity of CA3642 observed in winter barley – North-East EPPO zone

		Efficacy trials (26 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	26	26
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	26	26
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 26 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter barley.

Winter barley (HORVW) – South-East EPPO zone

In a total of 27 trials from the South-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Bulgaria, Hungary, Slovakia and Romania between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at dose rates of up to 1.0 L/ha.
Table 3.4-37 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-37: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total No. Trials	No. trials where phytotox was observed	Varieties tested (No. trials)
27	0	Obzor (7), Alora (1), Antonella (1), Etincel (1), GK Judy (1),

		KWS Meridian (1), SU Ellen (1), Ametist (1), Bravo (1), Carolina (1), Gerhart (1), JUP (1), Saphira (1), Saturn (1), Wendy (1), JUP (3), LG Triumph (3)

In none of the trials any phytotoxicity symptoms were observed, at dose rates of up to 1.4 L/ha (Table 3.4-38). Therefore, it can be concluded that CA3642 is safe for application to a wide range of winter barley varieties in the South-East EPPO Zone.

Table 3.4-38: Phytotoxicity of CA3642 observed in winter barley – South-East EPPO zone

		Efficacy trials (27 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	27	27
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	27	27
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 27 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter barley.

Summary Winter barley (HORVW)

The application of CA3642 at rates of 1.0 L/ha (180-200 g azoxystrobin and 180-200 g prothioconazole per hectare) did not cause any phytotoxicity symptoms in all of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to winter barley.

Spring barley (HORVS)

Spring barley (HORVW) – Maritime EPPO zone

In a total of 25 valid trials from the Maritime EPPO zone, used for efficacy evaluation, potential phytotoxic symptoms were assessed. Trials were carried out in the Czech Republic, Denmark, Great Britain and Germany between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at the proposed dose rate of 1.0 L/ha.
Table 3.4-11 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-39: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total no. trials	No. trials where phytotox was observed	Varieties tested (No. trials)
25	0	Avalon (2), Beckie, Concerto (2), Grace (2), Kampa, KWS Jessie, Laureate, LG Planet, Marthe,

		Planet (5), Propino (4), Quench, RGT Planet (3)

CA3642 applied twice at the proposed dose rate of 1.0 L/ha caused no symptoms of phytotoxicity in any of the 25 trials in spring barley in the Maritime EPPO zone. Therefore, it can be concluded that CA3642 is safe for application to a wide range of spring barley varieties in the Maritime EPPO Zone.

Table 3.4-40: Phytotoxicity of CA3642 observed in spring barley – Maritime EPPO zone

		Efficacy trials (25 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	25	25
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15%	0	0
Level of symptoms at the last assessments	0% to 5%	25	25
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15%	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 25 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for spring barley.

Spring barley (HORVS) – North-East EPPO zone

In a total of 39 trials (32 valid trials and 7 trials excluded from efficacy analysis) from the North-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Poland, Latvia or Lithuania between 2019 and 2020.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at the proposed dose rate of 1.0 L/ha.
Table 3.4-7 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-41: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total no. trials	**No. trials where phytotox was observed**	**Varieties tested (No. trials)**
39	0	Abava (3), Ansis, Atrika (2), Avalon (1), Avatar, Conchita (2), Ella (4), Harris, Kucyk, KWS Atrika, Luoke (2), Nagradowicki (2), Nokia (2), Planet, RGT Planet (2), Propino, Rufus, Soldo (5), Stratus (4), Teksas, Tesla

CA3642 applied twice at the proposed dose rate of 1.0 L/ha caused no symptoms of phytotoxicity in any of the 39 trials in spring barley in the North-East EPPO zone. Therefore, it can be concluded that CA3642 is safe for application to a wide range of spring barley varieties in the North-East EPPO Zone.

Table 3.4-42: Phytotoxicity of CA3642 observed in spring barley – North-East EPPO zone

		Efficacy trials (39 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	39	39
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15%	0	0
Level of symptoms at the last assessments	0% to 5%	39	39
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15%	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 39 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for spring barley.

Spring barley (HORVS) – South-East EPPO zone

In a total of 22 valid trials from the South-East EPPO zone, potential phytotoxic symptoms were assessed. Trials were carried out in Hungary, Romania and Slovakia between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at the proposed dose rate of 1.0 L/ha.
Table 3.4-19 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-43: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total no. trials	No. trials where phytotox was observed	Varieties tested (No. trials)
22	0	Alastro, Aligator (2), Boios (4), Donau, Elektra, Kangoo (2), Maltea, Malz (3), Planet, Pribina (2), Romanita (2), Thuringia, Xandu

CA3642 applied twice at the proposed dose rate of 1.0 L/ha caused no symptoms of phytotoxicity in any of the 22 trials in spring barley in the South-East EPPO zone. Therefore, it can be concluded that CA3642 is safe for application to a wide range of spring barley varieties in the South-East EPPO Zone.

Table 3.4-44: Phytotoxicity of CA3642 observed in spring barley – South-East EPPO zone

		Efficacy trials (22 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	22	22
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15%	0	0

		Efficacy trials (22 trials)	
		CA3642	**Reference**
		1.0 L/ha	**N**
Level of symptoms at the last assessments	0% to 5%	22	22
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15%	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 22 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for spring barley.

Summary Spring barley (HORVS)

The application of CA3642 at the proposed rate of 1.0 L/ha (150 g azoxystrobin and 150 g prothioconazole per hectare) caused no phytotoxicity symptoms in any of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety and may be safely applied to spring barley.

Oilseed rape (BRSNW)

Winter oilseed rape (BRSNW) – Maritime EPPO zone

In a total of 35 trials from the Maritime EPPO zone, including all those used for efficacy evaluation (32 trials) and those excluded due to no / low disease or no differences between the treatments and the untreated control (3 trials), potential phytotoxic symptoms were assessed. Trials were carried out in the Czech Republic, France, Great Britain and Germany between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at the proposed dose rate range of 1.0-1.2 L/ha.
Table 3.4-11 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-45: Number of trials and varieties where phytotoxicity was evaluated – Maritime EPPO zone

Total no. trials	No. trials where phytotox was observed	Varieties tested (No. trials)
35	2	Acacia (2), Advocat LG, Architect (3), Avatar (2), Bender, Crocodile, Crome, Croozer, DK Exception (2), DK Expression (3), Elevation, Expansion (2), Feliciano KWS, Flamingo, Hattrick (2), Kicker, KWS Digger (2), Nikita (3), Picto, Pioneer PT271, Recordie, SY Vesuvio, TREZZOR

CA3642 applied twice at the proposed dose rate of 1.0 L/ha caused no symptoms of phytotoxicity in 33 of the 35 trials in winter oilseed rape in the Maritime EPPO zone.

In Trial EU20-014-01 conducted in Maritime France on BRSNW variety Nikita, low levels of phytostunting was apparent at 13 DA-A at crop stage BBCH 18 in November. CA3642 applied at 1.2 L/ha caused 4.3 % phyto-stunting while 3.8 % was recorded for the 0.8 L/ha rate and no symptoms were seen in the plots treated with the 1.0 L/ha rate. The same symptoms at levels of 1.3-5.3 % were observed for the standard reference products CA2445, CA2702 and Bistro. None of the treatments caused symptoms that were significantly greater than the untreated control according to statistical analysis. At a later timing 48 DA-A at crop BBCH 18 in December, the same symptoms had become apparent in the 1.0 L/ha CA3642 plots at non-significant levels, and symptoms had increased in severity for the standard reference products (but not for CA3642). These symptoms were transient and no longer apparent at later assessment timings.

In Trial EU21-021-03 conducted in Germany on BRSNW variety Architect, significant levels (7%) of phyto-stunting were apparent at 21 DA-A at crop stage BBCH 57 in April following treatment with the 1.2 L/ha rate of CA3642. There were no similar symptoms at the lower rate of 1.0 L/ha CA3642, or for the standard reference products CA2702 and Pecari. These symptoms were transient and no longer apparent at later assessment timings.

In summary, it has been demonstrated that CA3642 causes no long-lasting or permanent phytotoxicity to treated BRSNW plants. Therefore, it can be concluded that CA3642 is safe for application to a wide range of BRSNW varieties in the Maritime EPPO zone.

Table 3.4-46: Phytotoxicity of CA3642 observed in winter oilseed rape – Maritime EPPO zone

		Efficacy trials (35 trials)	
		CA3642	**Reference**
		1.0-1.2 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	~~34~~ 33	~~34~~ 33
	>5% to 10%	~~1~~ 2	~~1~~ 2
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	35	35
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the Maritime EPPO climatic zone. Phytotoxicity assessment was provided in 35 efficacy trials. No negative symptoms were observed in 33 trials. Acceptable level of phytotoxicity has been noted in 2 trials, either for CA3642 and the reference product. These symptoms were transient and did not affect the yield. CA3642 is safe for winter oilseed rape.

Winter oilseed rape (BRSNW) – North-East EPPO zone

In a total of 35 trials from the North-East EPPO zone, including all those used for efficacy evaluation (26 trials) and those excluded due to no / low disease or no differences between the treatments and the untreated control (9 trials), potential phytotoxic symptoms were assessed. Trials were carried out in Latvia. Lithuania and Poland between 2019 and 2020.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at the proposed dose rate range of 1.0-1.2 L/ha.
Table 3.4-7 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-47: Number of trials and varieties where phytotoxicity was evaluated – North-East EPPO zone

Total no. trials	**No. trials where phyto-tox was observed**	**Varieties tested (No. trials)**
35	0	Absolut (2), Acapulco, Alabama, Cult, DK Explicit, DK Extract, DK Imistar, Einstein, Epure, ES Cesario, Exotter, Feliciano, Finley, HERAKLES F1, Ilona, Kuga (3), Mercedes (2), Mondit (3), NK Technic, Panama, PT264, Rohan (2), Severnij, Sherpa, Taifun, Thure, Umberto (2)

CA3642 applied 1-2 times at the proposed dose rate range of 1.0-1.2 L/ha caused no symptoms of phytotoxicity in any of the 35 trials in BRSNW in the North-East EPPO zone.

In summary, it has been demonstrated that CA3642 causes no phytotoxicity to treated BRSNW plants. Therefore, it can be concluded that CA3642 is safe for application to a wide range of BRSNW varieties in the North-East EPPO zone.

Table 3.4-48: Phytotoxicity of CA3642 observed in BRSNW – North-East EPPO zone

		Efficacy trials (35 trials)	
		CA3642	**Reference**
		1.0-1.2 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	35	35
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	35	35
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the North-East EPPO climatic zone. Phytotoxicity assessment was provided in 35 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter oilseed rape.

Winter oilseed rape (BRSNW) – South-East EPPO zone

In a total of 42 trials from the South-East EPPO zone, including all those used for efficacy evaluation (40 trials) and those excluded due to no / low disease or no differences between the treatments and the untreated control (2 trials), potential phytotoxic symptoms were assessed. Trials were carried out in Hungary, Romania and Slovakia between 2019 and 2021.
Assessments included general phytotoxicity (PHYGEN) at different timings after up to two applications of CA3642 at the proposed dose rate range of 1.0-1.2 L/ha.
Table 3.4-19 lists the number of trials and varieties where phytotoxicity was evaluated either as a data set containing ratings or within the comments section of the trial report.

Table 3.4-49: Number of trials and varieties where phytotoxicity was evaluated – South-East EPPO zone

Total no. trials	**No. trials where phytotox was observed**	**Varieties tested (No. trials)**
42	0	Alicante, Arabella (5), Compass, Dekalb Expression, DK Exception, DK Exterior Mécses (2), DK Extron, Es Danube, Exception, Factor, Florida, Hybrirock (7), Imperio, Iowa, KWS HYBRIROCK, KWS Umberto, LG Architect, Mazari CS, Nelson (2), PR46W21, PT225, PT264, PT271, Rapool Shrek, Round, Sherpa, SHREK, Triangle, Visby

CA3642 applied twice at the proposed dose rate of 1.0-1.2 L/ha caused no symptoms of phytotoxicity in any of the 42 trials in BRSNW in the South-East EPPO zone. Therefore, it can be concluded that CA3642 is safe for application to a wide range of BRSNW varieties in the South-East EPPO zone.

Table 3.4-50: Phytotoxicity of CA3642 observed in BRSNW – South-East EPPO zone

		Efficacy trials (42 trials)	
		CA3642	**Reference**
		1.0-1.2 L/ha	**N**
Maximum of phytotoxicity recorded during the trials	0% to 5%	42	42
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	42	42
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

Comments of zRMS:

No special selectivity trials have been submitted in the South-East EPPO climatic zone. Phytotoxicity assessment was provided in 42 efficacy trials. No negative symptoms were observed in all trials. CA3642 is safe for winter oilseed rape.

Summary Oilseed rape (BRSNW)

The application of CA3642 at the proposed rate range of 1.0-1.2 L/ha (150-180 g azoxystrobin and 150-180 g prothioconazole per hectare) caused no long-lasting or permanent phytotoxicity symptoms in any of the trials. Thus, it can be concluded that CA3642 provides an excellent crop safety when used according to all label recommendations and may be safely applied to winter oilseed rape.

~~3.3.13 Effect on the yield of treated plants or plant product (KCP 6.4.2)~~

~~No specific selectivity trials for the evaluation of yield were conducted. For yield results of the efficacy trials please refer to 3.2.3 Efficacy tests (KCP 6.2). In the efficacy tests no unacceptable symptoms caused by the product application were observed during the trials summarized in this document~~

~~3.3.14 Effects on the quality of plants or plant products (KCP 6.4.3)~~

~~No specific selectivity trials for the evaluation of yield quality were conducted. For yield results of the efficacy trials please refer to 3.2.3 Efficacy tests (KCP 6.2). In the efficacy tests no unacceptable symptoms caused by the product application were observed during the trials summarized in this document~~

~~3.3.15 Effects on transformation processes (KCP 6.4.4)~~

~~No specific studies investigating the effects of CA3642 on transformation processes were implemented.~~
~~However, considering that CA3642 did not induce phytotoxicity symptoms it is logically expected that CA3642 sprayed at maximum of 1.4 L/ha according to the application timing claimed will not negatively impact transformation processes.~~

~~3.3.16 Impact on treated plants or plant products to be used for propagation (KCP 6.4.5)~~

~~The impact of CA3642 on treated plants or plant products used for propagation was not specifically investigated. However, considering that CA3642 does not induce phytotoxicity symptoms and did not negatively impact treated plants and plant products, it is assumed that the test product will not negatively affect plants or plant products used for propagation.~~

3.4.2 Effect on the yield of treated plants or plant product (KCP 6.4.2)

No specific selectivity trials for the evaluation of yield were conducted. For yield results of the efficacy trials please refer to 3.2.3 Efficacy tests (KCP 6.2). In the efficacy tests no unacceptable symptoms caused by the product application were observed during the trials summarized in this document

Comments of zRMS:

Accepted.

3.4.3 Effects on the quality of plants or plant products (KCP 6.4.3)

No specific selectivity trials for the evaluation of yield quality were conducted. For yield results of the efficacy trials please refer to 3.2.3 Efficacy tests (KCP 6.2). In the efficacy tests no unacceptable symptoms caused by the product application were observed during the trials summarized in this document

Comments of zRMS:

Accepted.

3.4.4 Effects on transformation processes (KCP 6.4.4)

No specific studies investigating the effects of CA3642 on transformation processes were implemented.
However, considering that CA3642 did not induce phytotoxicity symptoms it is logically expected that CA3642 sprayed at maximum of 1.4 L/ha according the application timing claimed will not negatively impact transformation processes.

Comments of zRMS:

According to the EPPO guideline PP 1/243(2), the main crops which may be subjected to transformation processes include cereals (baking and brewing). However, no phytotoxicity symptoms have been observed in the submitted efficacy trials. Furthermore, the mixture of AZX and PTZ contained in CA3642 is known in many EU countries. The use of the product in accordance with the recommendations in the label causes that the negative impact on transformation processes is not expected.

3.4.5 Impact on treated plants or plant products to be used for propagation (KCP 6.4.5)

The impact of CA3642 on treated plants or plant products used for propagation was not specifically investigated. However, considering that CA3642 did not induce phytotoxicity symptoms and did not negatively impact treated plants and plant products, it is assumed that the test product will not negatively affect plants or plant products used for propagation.

Comments of zRMS: Accepted.

3.5 Observations on other undesirable or unintended side-effects (KCP 6.5)

3.5.1 Impact on succeeding crops (KCP 6.5.1)

During several years of commercial use of azoxystrobin and prothioconazole, no negative effects on succeeding crops have been observed. Due to the good selectivity of both active ingredients, no negative impacts on succeeding crops can be expected if the product is applied according to good agricultural practice (GAP).

Comments of zRMS: Accepted.

3.5.2 Impact on other plants including adjacent crops (KCP 6.5.2)

In none of the trials summarized in this dossier, any impact on other plants including adjacent crops was observed. Due to the good selectivity of azoxystrobin and prothioconazole observed over many years on several crops, no negative impacts on adjacent crops can be expected if the CA3642 is applied according to good agricultural practice (GAP). This is further supported by the studies on non-target plants presented in **Part B, Section 9** (Ecotoxicology).
Long-standing practical experiences from uses of the single active substances in other products in numerous other crops have up to date not revealed any problems with phytotoxicity in any of these crops. Hence, even if spray drift on adjacent crops occurs it is unlikely that this causes any negative impacts. Nevertheless, aim of any plant protection product application must be to avoid spray drift as far as possible.

<u>Tank cleaning</u>
As no adverse effects are expected on crops based on the phytotoxicity results presented here and on the long-standing use of each active substance, no studies were undertaken to assess the residues remaining in tank. However, it is recommended to triple rinse the tank after use, according to good agricultural practice.

Comments of zRMS: Accepted.

3.5.3 Effects on beneficial and other non-target organisms (KCP 6.5.3)

No impacts on the fauna in general and/or beneficials in particular were observed, nor could any negative impacts on the environment be noticed in the trials summarized in this dossier.
Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in **Part B, Section 9** (Ecotoxicology).

Comments of zRMS:
Accepted.

Summary and conclusion

A total of 506 trials were undertaken in support of the proposed uses of CA3642 on cereals and oilseed rape in the CEU regulatory zone. In each of the crop sections CA3642 application resulted in significant reduction in disease for the target pathogens compared to untreated plots and was comparable to the efficacy provided by the authorised reference products.

In all trials, efficacy was compared to authorised reference standards, and in the majority of cases these were comparable prothioconazole EC or azoxystrobin SC formulations of 250 g/l. Prothioconazole and azoxystrobin have been used for many years in cereals and oilseed rape against the proposed pathogens and is well established as being effective against these diseases. The efficacy of CA3642 has been demonstrated to be greater or equivalent to that of the authorised reference products across the proposed uses in a large number of valid trials across each of the EPPO climatic zones.

For some crop/pathogen combinations a limited number of valid trials was available and reference has been made to the data on the same pathogen on a similar cereal crop. As, on the whole, similar reference products have the same dose rate approved for use on the same pathogens across different cereal crops it is considered that this extrapolation is acceptable.

In this dossier data the majority of efficacy assessments are where 2 applications of the test product were made, with some additional data assessing efficacy only after the first application However, according to disease development conditions, a single application may provide sufficient disease control, therefore users should not be restricted to always applying twice, hence in the GAP the proposed use is for 1-2 applications. In addition, crop pathogens are commonly controlled using a programme of different fungicides with varied modes of action, therefore the choice should be available to growers to make a single application of CA3642, followed by application of a different appropriate fungicide. Prothioconazole and azoxystrobin are well established over a number of years in providing good broad-spectrum efficacy across a range of common crop pathogens, with either 1 or more applications appropriate according to disease development conditions, risk of resistance development and local conditions. Considering these elements, and that data in the efficacy section shows comparability of CA3642 to these authorised products, registration of CA3642 at the proposed minimum effective dose rate and with a number of applications of 1- 2, is requested.

3.6 Other/special studies

Not applicable.

3.7 List of test facilities including the corresponding certificates

The following table gives information about the testing facilities where GEP trials mentioned in this document were done. All facilities are certified and trials were done according to GEP. All corresponding certificates are available in the GEP Certificate Database System (Certibase) via the hyperlinks provided in the table below (http://www.gepcertibase.eu). In addition, certificates are provided in the individual trial reports.

Table 3.7-1: List of test facilities

Country	Test Facility	N trials (Total = 109)	Years	Hyperlink
Wheat				
Bulgaria	ANADIAG BULGARIA LTD Bul. Vasil levski № 244 4000 Plovdiv,Bulgaria	1	2019	1d6cf50dc94
		2	2021	
Czech Republic	ANADIAG SA, CZ osp. 517 54 Chleny 47	1	2019	1d6cf50dda8
France	ANADIAG FRANCE 13, rue de la Bourbre, 38300 Ruy – France	5	2019	1d6cf50dbb6
	SynTech Research France 613 route du bois de Loyse, La Chapelle de Guinchay, 71570, France	1	2019	1d6cf50dc6f
	ANADIAG SAS 174 impasse du Plan d'Eau, 38300 Ruy-Montceau, France	2	2020	1d6cf50dcc4
		1	2021	
Germany	ANADIAG DEUTSCHLAND Lebacherstrasse 4, D-66113 Saarbrücken	2	2019	Please see certificate below
	QUINTUS GmbH LIEPEN 7, 17194 Hohen Wangelin OT Liepen, Germany	3	2019	1d6cf50debf
	SynTech Research Germany Industriestraße 3, Preetz, 24211 Schleswig-Holstein, Germany	2	2019	1d6cf50dab1
	QUINTUS GmbH LIEPEN 7, 17194 Hohen Wangelin OT Liepen, Germany	2	2020	1d6cf50d96e
		3	2021	
Great Britain	Oxford Agricultural Trials Limited West Farm Barns – Launton Road - Stratton Audley – Bicester OXON - OX279AS – United Kingdom	6	2019	1d6cf50dbeb
	SynTech Research UK 2 Old Hall Farm Barns, Thurston Road, Pakenham, Bury St Edmunds, Suffolk, IP31 2NG, UK	1	2019	1d6cfc65993
	Oxford Agricultural Trials Limited West Farm Barns – Launton Road - Stratton Audley – Bicester OXON - OX279AS – United Kingdom	11	2020	1d6cf50de83
		3	2021	
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67	6	2019	1d6cf50dda8
		5	2020	1d6cf50dbeb
Latvia	SIA Agrolab Baltic Ozoli, Kursisi pagast LV-3890 Latvia	2	2019	1d6cf50dcc4
		2	2020	1d6cf50dc47
		3	2021	
Lithuania	Institute of Agriculture, LRCAF Instituto al. 1, Instituto al. 1, LT-58344, Lithuania	4	2019	1d6cf50d96e
		1	2020	
		3	2021	
Poland	ANADIAG POLSKA Ul. Sadowa 16/22, 95-100 Zgierz, POLAND	7	2019	1d6cf50de83
	SynTech Research Poland Sp. z o.o. 69/1 Jagiellonska 85-027 Bydgoszcz Poland	3	2019	1d6cf50dd2e
	ANADIAG POLSKA Ul. Sadowa 16/22, 95-100 Zgierz, POLAND	9	2020	1d6cf50dda8
		5	2021	1d6cf50dc94
Romania	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, Entrance F, 1st Floor, 011469, Bucharest, ROMANIA	6	2019	1d6cf50d9fc
		3	2020	1d6cf50dc0f
	Agroblu Romania SRL Calea Bucureștilor nr. 30 B Săftica (Balotești) 077015, Ilfov, Romania	2	2021	1d6cf50dc0f
Slovakia	GEMERPRODUKT VALICE OVD	2	2020	1d6cfc65a2f

	Okruzna 3771, Rimavska Sobota, Rimavska Sobota			
Spelt				
Poland	ANADIAG POLSKA Ul. Sadowa 16/22, 95-100 Zgierz, POLAND	1	2021	1d6cf50de83
Durum wheat				
France	ANADIAG FRANCE 13, rue de la Bourbre 38300 RUY – France	2	2019	1d6cf50dbb6
Germany	QUINTUS GmbH LIEPEN 7 17194 Hohen Wangelin OT Liepen GERMANY	1	2019	1d6cf50debf
		2	2021	
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67	2	2019	1d6cf50dda8
Romania	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, Entrance F, 1st Floor 011469, Bucharest, ROMANIA	1	2020	1d6cf50d9fc
Triticale				
France	ANADIAG FRANCE 13, rue de la Bourbre 38300 RUY – France	1	2019	1d6cf50dbb6
	ANADIAG SAS 174 impasse du Plan d'Eau, 38300 RUY-MONTCEAU FRANCE	1	2020	
Germany	QUINTUS GmbH 17194 Hohen Wangelin OT Liepen GERMANY	3	2019	1d6cf50debf
		2	2020	
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67	1	2019	1d6cf50dda8
		1	2020	
Poland	ANADIAG POLSKA Ul. Sadowa 16/22, 95-100 Zgierz, POLAND	2	2019	1d6cf50de83
Romania	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, Entrance F, 1st Floor 011469, Bucharest, ROMANIA	3	2019	1d6cf50d9fc
Rye				
Denmark	Agrolab A/S Røjleskovvej 18 5500 Middelfart Denmark	1	2019	1d6cf50d9c8
France	ANADIAG SAS 174 impasse du Plan d'Eau, 38300 RUY-MONTCEAU FRANCE	1	2021	1d6cf50dbb6
Germany	QUINTUS GmbH LIEPEN 7 17194 Hohen Wangelin OT Liepen GERMANY	2	2020	1d6cf50debf
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67	1	2019	1d6cf50dda8
Latvia	SIA Agrolab Baltic Ozoli, Kursisi, pagast, LV-3890, Latvia	1	2020	1d6cf50dcc4
Poland	ANADIAG POLSKA Ul. Sadowa 16/22, 95-100 Zgierz, POLAND	1	2019	1d6cf50de83
		1	2020	
Romania	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, Entrance F, 1st Floor, 011469, Bucharest, ROMANIA	1	2019	1d6cf50d9fc
	AGROBLU ROMANIA Srl Calea Bucureștilor nr. 30 B Săftica (Balotești) 077015, Ilfov, Romania	1	2021	1d6cf50dc47
United Kingdom	Oxford Agricultural Trials Limited West Farm Barns – Launton Road - Stratton Audley – Bicester OXON - OX279AS – UNITED KINGDOM	1	2019	1d6cf50dbeb
		1	2021	
Oat				
Germany	QUINTUS GmbH LIEPEN 7, 17194 Hohen Wangelin OT Liepen, GERMANY	2	2019	1d6cf50debf
		2	2020	

Latvia	SIA Agrolab Baltic Ozoli, Kursisi pagast, LV-3890, Latvia	1	2019	1d6cf50dcc4
Winter barley				
Bulgaria	Anadiag Bulgaria LTD Bul. Vasil levski № 244, 4000 Plovdiv, Bulgaria	7	2019	1d6cf50dc94
Czech Republic	ANADIAG SA, CZ osp. 517 54 Chleny 47, Czech Republic	2	2019	1d6cf50dda8
		1	2020	
		1	2021	
France	ANADIAG FRANCE 13, rue de la Bourbre, 38300 RUY – France	5	2019	1d6cf50dbb6
	ANADIAG SAS 174, impasse du Plan d'Eau, 38300 RUY-MONTCEAU FRANCE	8	2019	
		19	2020	
		6	2021	
Germany	QUINTUS GmbH LIEPEN 7, 17194 Hohen Wangelin OT Liepen, GERMANY	7	2019	1d6cf50debf
	ANADIAG Deutschland GmbH Lebacherstrasse 4 D-66113 Saarbrücken	1	2019	
	QUINTUS GmbH LIEPEN 7, 17194 Hohen Wangelin OT Liepen, GERMANY	3	2020	1d6cf50debf
		2	2021	
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67, Hungary	4	2019	1d6cf50dda8
		2	2020	
		4	2021	
Latvia	Sia Agrolab Baltic Ozoli, Kursīšu pagasts LV-3890 Saldus novads, Latvia	5	2019	1d6cf50dcc4
		3	2020	
Latvia	SIA Agrolab Baltic Ozoli, Kursīšu pagasts LV-3890 Saldus novads, Latvia	2	2021	
Lithuania	Institute of Agriculture, LRCAF Instituto al. 1, Akademija, Kedainiai, LT-58344 , Lithuania	2	2019	1d6cf50d96e
		3	2021	
Poland	ANADIAG POLSKA Ul. Sadowa 16/22, 95-100 Zgierz, POLAND	11	2019	1d6cf50de83
		12	2020	
		9	2021	
		2	2020	
Romania	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, Entrance F, 1st Floor 011469, Bucharest, ROMANIA	2	2019	1d6cf50d9fc
		7	2020	
Slovakia	GEMERPRODUKT VALICE OVD Okružná 3771, 979 01 Rimavská Sobota, Slovakia	6	2020	1d6cf50dc0f
United Kingdom	Oxford Agricultural Trials Limited West Farm Barns – Launton Road - Stratton Audley – Bicester OXON - OX279AS – UNITED KINGDOM	4	2019	1d6cf50dbeb
Spring barley				
Czech Republic	ANADIAG SA, CZ osp. 517 54 Chleny 47 Czech Republic	2	2019	1d6cf50dda8
Denmark	Agrolab A/S Røjleskovvej 18 5500 Middelfart Denmark	1	2019	1d704d8c4e8
Germany	Quintus GmbH, Hohen Wangelin, Germany	9	2019-21	1d704d8c70d 1d704d8c858
Great Britain	Oxford Agricultural Trials Limited West Farm Barns – Launton Road - Stratton Audley – Bicester OXON - OX279AS – United Kingdom	13	2019-21	1d6cf50dbeb
				1d6cf50de83
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67	6	2019-20	1d6cf50dda8
			2020	1d6cf50dbeb
Romania	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, En-	9	2019	1d6cf50d9fc
			2020	1d6cf50dc0f

	trance F, 1st Floor, 011469, Bucharest, ROMANIA			
Slovakia	GEMERPRODUKT VALICE OVD Okruzna 3771, Rimavska Sobota, Rimavska Sobota	7	2019-20	1d6cfc65a2f
Poland	Anadiag Polska, Zgierz, Poland	34	2019-21	1d704d74196
Lithuania	LRCAF, Institute of Agriculture, Kedainiu r, Lithuania	4	2019-20	1d704d7423f
Latvia	SIA Agrolab Baltic, Ozoli, Kursisi pagast, Latvia	7	2019-21	1d704d8c7e5
Lithuania	Agrolab Baltic, Bugenių km. LT-89452 Mažeikių raj.	1	2021	1d704d8c7e5
Oilseed rape				
Czech Republic	ANADIAG SA, CZ osp. 517 54 Chleny 47 Czech Republic	6	2019-20	1d6cf50dda8
	Agriculture Research Institute Ltd Sumperk Czech Republic	1	2019	1d704d74225
	Zkusebni stanice Nechanice Czech Republic	1	2019-	1d704d73f09
	InTec Agro Trials Ostrožské Předměstí Blatnická 179 687 24 Uherský Ostroh	1	2019	1d704d74008
France	ANADIAG FRANCE 13, rue de la Bourbre 38300 RUY – France	10	2019-20	1d6cf50dbb6
	ANADIAG SAS 174, Impasse du Plan d'Eau 38300 RUY-MONTCEAU, France	13	2020-21	1d6cf50dcc4
Germany	Trialtec GMBH Holtsee Germany	10	2020-21	1d704d7412b
	BioChem agrar GmbH Uedem Germany	3	2019	1d704d73f0c
Great Britain	Oxford Agricultural Trials Limited West Farm Barns – Launton Road - Stratton Audley – Bicester OXON - OX279AS – United Kingdom	7	2019-21	1d6cf50dbeb 1d6cf50de83
Hungary	Anadiag Hungary Kft. H2921, Komárom, Petőfi Sándor 67	15	2019-21	1d6cf50dda8
			2020	1d6cf50dbeb
Romania	Agroblu Romania SRL Calea Bucureștilor nr. 30 B Săftica (Balotești) 077015, Ilfov, Romania	2	2021	1d6cf50dc0f
	ANADIAG ROMANIA SRL Piata Montreal no. 10, World Trade Centre, Entrance F, 1st Floor, 011469, Bucharest, ROMANIA	6	2019	1d6cf50d9fc
		3	2020	1d6cf50dc0f
Slovakia	GEMERPRODUKT VALICE OVD Okruzna 3771, Rimavska Sobota, Rimavska Sobota	2	2020	1d6cfc65a2f
Poland	Anadiag Polska, Zgierz, Poland	26	2019-21	1d704d74196
Lithuania	LRCAF, Institute of Agriculture, Kedainiu r, Lithuania	4	2019-20	1d704d7423f
Latvia	Agrolab Baltic Riga Latvia	5	2019-20	1d704d74145

ANADIAG DEUTCHLAND

Ministerium für Umwelt und Verbraucherschutz

SAARLAND

GEP-Anerkennungs-Zertifikat / Recognition Certificate

Anerkennungsbescheinigung		Recognition Certificate
Die Versuchseinrichtung	**Anadiag Deutschland GmbH Versuchsstation Bondorf Haitinger Höfe 4 D-71149 Bondorf**	The testing facility
mit Hauptsitz in	**Lebacherstraße 4 D-66113 Saarbrücken**	with headquarters in
und organisatorisch zugehörigen Arbeitseinheiten in	./.	and subsidiary testing units in
ist auf Antrag vom und nach durchgeführter Besichtigung	**30.06.2017**	on application from and after inspection
durch	**Dr. Friedrich Merz und Frank Mohr**	by
vom	**Regierungspräsidium Stuttgart und Ministerium für Umwelt und Verbraucherschutz Saarland**	dated
am	**22.09.2017**	on
in den Versuchskategorien	**Ackerbau, Gemüsebau, Weinbau, Obstbau und Sonstige (Nichtkulturland: Rasen, Gleisanlagen, Wege und Plätze)**	in the trial categories
bis zum	**21.09.2022**	until

als Einrichtung für die Prüfung der Wirksamkeit von Pflanzenschutzmitteln im Sinne des § 8 Abs. 6 der Pflanzenschutzmittelverordnung und gemäß Verordnung (EU) Nr. 284/2013 für 5 Jahre amtlich anerkannt worden.

has been officially recognised as an organisation for efficacy testing facility of plant protection products according to § 8 par. 6 of the Plant Protection Products Ordinance and the Commission Regulation (EU) No 284/2013 for 5 years.

Datum date	Unterschrift sign	Adresse der anerkennenden Behörde address of the recognising authority	Stempel stamp
18.12.2017		Ministerium für Umwelt und Verbraucherschutz Referat B/2 Keplerstraße 18 D-66 117 Saarbrücken	

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

Annex Point	Authors	Year	**Source** **Company report** **Source** **GLP** **Published**	Vertebrate Study	Owner
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Wheat, Spelt, Durum wheat) GEP: No Unpublished	N	Nufarm
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Triticale) GEP: No Unpublished	N	Nufarm
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Rye) GEP: No Unpublished	N	Nufarm
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Oat) GEP: No Unpublished	N	Nufarm
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Winter barley) GEP: No Unpublished	N	Nufarm
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Spring barley) GEP: No Unpublished	N	Nufarm
KCP 6	Anonymous	2023	Biological Assessment Dossier Joust Pro (Prothioconazole, Azoxystrobin) (Oilseed rape) GEP: No Unpublished	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Audrey Meyer	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-01 Source: ANADIAG DEUTSCHLAND GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-02 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm

KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-03 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-04 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-05 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-06 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Audrey Meyer	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-07 Source: ANADIAG DEUTSCHLAND GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-08 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-09 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-10 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2	Lucy Stokes	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-11	N	Nufarm

KCP 6.2.3 KCP 6.4.1			Source: Oxford Agricultural Trials Limited GLP: Yes Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-12 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Lucy Stokes	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-13 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-14 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-15 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-16 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Iva SIMEK	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-17 Source: ANADIAG SA, CZ osp. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-48 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-49 Source: ANADIAG POLSKA GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-50 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-51 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-52 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-53 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-54 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-55 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Antanina Ušinskiene	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-56 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-57 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat	N	Nufarm

KCP 6.2.2 KCP 6.2.3 KCP 6.4.1			Company report: EU19-067-58 Source: ANADIAG POLSKA GLP: Yes Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Antanina Ušinskiene	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-59 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-60 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-65 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-66 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-67 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-68 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-69 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-70 Source: Anadiag Hungary Kft.	N	Nufarm

			GLP: Yes Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-71 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-72 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-73 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-74 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-75 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-76 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-067-77 Source: ANADIAG BULGARIA LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-01 Source: SynTech Research Germany GLP: Yes Published: No	N	Nufarm

KCP 6.2.3 KCP 6.4.1	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-02 Source: SynTech Research Germany GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-04 Source: SynTech Research UK GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-05 Source: SynTech Research France GLP: Yes Published: No	N	Nufarm
KCP 6.2.3 KCP 6.4.1	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-12 Source: SynTech Research Poland Sp. z o.o. GLP: Yes Published: No	N	Nufarm
KCP 6.2.3 KCP 6.4.1	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-13 Source: SynTech Research Poland Sp. z o.o. GLP: Yes Published: No	N	Nufarm
KCP 6.2.3 KCP 6.4.1	Karine Faye	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU19-068-14 Source: SynTech Research Poland Sp. z o.o. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-02 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-03 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-04	N	Nufarm

KCP 6.2.3 KCP 6.4.1			Source: Oxford Agricultural Trials Limited GLP: Yes Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-05 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-06 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-07 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-08 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-09 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-10 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-11 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-12 Source: Oxford Agricultural Trials Limited GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-13 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-15 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-16 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-21 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-56 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-57 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-58 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-59 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.2	Guillaume Cardiet	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat	N	Nufarm

KCP 6.2.3 KCP 6.4.1			Company report: EU20-035-60 Source: ANADIAG POLSKA GLP: Yes Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume Cardiet	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-61 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-62 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-63 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-64 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-65 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-66 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU20-035-67 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against Puccinia recondita Company report: EU20-035-70 Source: Anadiag Hungary Kft.	N	Nufarm

KCP 6.4.1			GLP: Yes Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against Puccinia recondita Company report: EU20-035-71 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against Puccinia recondita Company report: EU20-035-72 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-73 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-74 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-75 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-79 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-80 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-81 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm

KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Soft Wheat against powdery mildew Company report: EU20-035-82 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-01 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-02 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Hannah Erb	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-03 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-04 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-05 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-06 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Sabrina DUCROT	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-08 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-34	N	Nufarm

KCP 6.4.1			Source: ANADIAG POLSKA GLP: Yes Published: No		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume Cardiet	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-35 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-37 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Roma Semaškienė	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-38 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Roma Semaškienė	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-39 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anna Marija Firere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-40 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anna Marija Firere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-41 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-42 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-43 Source: ANADIAG POLSKA GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Roma Semaškienė	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-44 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2.1 KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Anna Marija Firere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-45 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Amandine HEYERE	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-50 Source: Agroblu Romania SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Amandine HEYERE	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-54 Source: Agroblu Romania SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Filaretos VOURKOS	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-56 Source: ANADIAG BULGARIA LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	Filaretos VOURKOS	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Wheat Company report: EU21-019-57 Source: ANADIAG BULGARIA LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Bese Gábor	2019	Title: Mycotoxin Analytical Report Company report: EU19-068-01 Source: SynTech Research Hungary Kft. Analytical Lab GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Bese Gábor	2019	Title: Mycotoxin Analytical Report Company report: EU19-068-02 Source: SynTech Research Hungary Kft. Analytical Lab GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2.3	Bese Gábor	2019	Title: Mycotoxin Analytical Report Company report: EU19-068-04 Source: SynTech Research Hungary Kft. Analytical Lab GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Bese Gábor	2019	Title: Mycotoxin Analytical Report Company report: EU19-068-12 Source: SynTech Research Hungary Kft. Analytical Lab GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Bese Gábor	2019	Title: Mycotoxin Analytical Report Company report: EU19-068-13 Source: SynTech Research Hungary Kft. Analytical Lab GLP: Yes Published: No	N	Nufarm
KCP 6.2.3	Bese Gábor	2019	Title: Mycotoxin Analytical Report Company report: EU19-068-14 Source: SynTech Research Hungary Kft. Analytical Lab GLP: Yes Published: No	N	Nufarm
KCP 6.3	FRAC	2022	Mechanisms of resistance www.frac.info/fungicide-resistance-management/background Not GEP/GLP Published	N	Public domain
KCP 6.3	Cools, H.J., Hawkins, N.J. &. Fraaije, B.A.	2013	Constraints on the evolution of azole resistance in plant pathogenic fungi. Plant Pathology (2013) 62 (Suppl. 1), 36–42 Not GEP/GLP Published	N	Public domain
KCP 6.3	Kuck., K.H.	2007	QoI Fungicides: Resistance Mechanisms and Its Practical Importance. Pesticide Chemistry Crop Protection, Public Health, Environmental Safety (Wiley VCH, 2007) pp 275-283. Not GEP/GLP Published	N	Public domain
KCP 6.3	Sierotzki, H, Frey, R, Wullschleger J, Palermo S, Karlin S, Godwin, J, Gisi, U	2007	Cytochrome b gene sequence and structure of *Pyrenophora teres* and *P. tritici-repentis* and implications for QoI resistance. Pest Manag Sci 63:225-233 Not GEP/GLP Published	N	Public domain
KCP 6.3	Grasso, V., Palermo, S.,	2006	Cytochrome b gene structure and consequences for resistance to Qo inhibitor fungicides in plant path-	N	Public domain

	Sierotzki, H., Garibaldi, A. & Gisi, U.		ogens. Pest Manag. Sci. 62, 465–472. Not GEP/GLP Published		
KCP 6.3	Fernández-Ortuño, D., Torés, J.A., de Vicente, A., Pérez-García, A.	2008	Mechanisms of resistance to QoI fungicides in phytopathogenic fungi. INTERNATIONAL MICRO-BIOLOGY (2008) 11:1-9 Not GEP/GLP Published	N	Public domain
KCP 6.3	Roohparvar R, De Waard M, Kema GHJ, Zwiers L-H	2007	MgMfs1, a major facilitator superfamily transporter from the fungal wheat pathogen *Mycosphaerella gramicola*, is a strong protectant against natural toxic compounds and fungicides. Fungal Genet Biol 44:378-388 Not GEP/GLP Published	N	Public domain
KCP 6.3	EPPO	2022	EPPO resistance database https://resistance.eppo.int/database/cases_list non GEP Public access	N	Public domain
KCP 6.3	R4P	2022	R4P resistance database https://www.r4p-inra.fr/wp-content/uploads/2020/07/List-I_Fungi_EN_Jul20.pdf non GEP Public access	N	Public domain
KCP 6.3	FRAC	2022	Minutes of the 2022 SBI TelCo Meeting Recommendations for 2022 from Jan 21st 2022. FRAC. 2022. Not GEP/GLP Published	N	Public domain
KCP 6.3	FRAC	2022	Minutes of the 2022 QoI WG Meeting and Recommendations for 2022 on 20th of Jan 2022. FRAC. 2022. Not GEP/GLP Published	N	Public domain
KCP 6.3	FRAC	2020	List of first confirmed cases of plant pathogenic organisms resistant to disease control agents. Revised May 2020. FRAC Not GEP/GLP Published	N	Public domain
KCP 6.3	FRAC	2022	FRAC code list: Fungal control agents sorted by cross-resistance pattern and mode of action FRAC.2022. Not GEP/GLP Published	N	Public domain
KCP 6.3	Kiiker, R., Juurik, M., Heick, T.M. & Mäe, A.	2021	Changes in DMI, SDHI, and QoI Fungicide Sensitivity in the Estonian *Zymoseptoria tritici* Population between 2019 and 2020. Microorganisms 2021, 9, 81 Not GEP/GLP Published	N	Public domain
KCP 6.3	Mae, A., Fillinger, S., Sooväli, P. & Heick, T.	2020	Fungicide Sensitivity Shifting of *Zymoseptoria tritici* in the Finnish-Baltic Region and a Novel Inser-tion in the MFS1 Promoter. Front. Plant Sci., 15 April 2020	N	Public domain

			Not GEP/GLP Published		
KCP 6.3	FRAC	2019	FRAC pathogen risk list Not GEP/GLP Published	N	Public domain
KCP 6.3	FRAC	2020	Management of resistance risk for fungicides Not GEP/GLP Published	N	Public domain
KCP 6.3	FRAC	2022	FRAC Recommendations for QoI fungicides Not GEP/GLP Published	N	Public domain
3.3	FRAC	2022	FRAC Recommendations for SBI Fungicides Not GEP/GLP Published	N	Public domain
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Spelt Company report: EU21-019-47 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina Ducrot	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU19-067-18 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina Ducrot	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU19-067-19 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU19-067-20 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU21-019-09 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU21-019-10 Source: QUINTUS GmbH	N	Nufarm

			GLP: Yes Published: No		
~~KCP 6.2~~ ~~KCP 6.4~~	~~Manuela Delpero~~	~~2019~~	~~Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat~~ ~~Company report: EU19-067-41~~ ~~Source: ANADIAG ITALIA SRL~~ ~~GLP: Yes~~ ~~Published: No~~	~~N~~	~~Nufarm~~
~~KCP 6.2~~ ~~KCP 6.4~~	~~Manuela Delpero~~	~~2019~~	~~Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat~~ ~~Company report: EU19-067-42~~ ~~Source: ANADIAG ITALIA SRL~~ ~~GLP: Yes~~ ~~Published: No~~	~~N~~	~~Nufarm~~
~~KCP 6.4~~	~~Cécile Villeton~~	~~2019~~	~~Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat~~ ~~Company report: EU19-067-43~~ ~~Source: ANADIAG FRANCE~~ ~~GLP: Yes~~ ~~Published: No~~	~~N~~	~~Nufarm~~
~~KCP 6.2~~ ~~KCP 6.4~~	~~Manuela Delpero~~	~~2020~~	~~Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat~~ ~~Company report: EU20-035-49~~ ~~Source: ANADIAG ITALIA SRL~~ ~~GLP: Yes~~ ~~Published: No~~	~~N~~	~~Nufarm~~
~~KCP 6.2~~ ~~KCP 6.4~~	~~Manuela Delpero~~	~~2020~~	~~Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat~~ ~~Company report: EU20-035-50~~ ~~Source: ANADIAG ITALIA SRL~~ ~~GLP: Yes~~ ~~Published: No~~	~~N~~	~~Nufarm~~
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU19-067-78 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU19-067-79 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi Della	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat against Zymoseptoria tritici Company report: EU20-035-84 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm

KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Durum Wheat Company report: EU20-035-23 Source: QUINTUS GMBH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-21 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-22 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-23 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Triticale Company report: EU20-035-24 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Triticale Company report: EU20-035-25 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Triticale Company report: EU20-035-26 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Triticale Company report: EU20-035-27 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-61	N	Nufarm

			Source: ANADIAG POLSKA GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-62 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-80 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-81 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale Company report: EU19-067-82 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale against *Zymoseptoria tritici* Company report: EU20-035-85 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Triticale against *Zymoseptoria tritici* Company report: EU20-035-86 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter rye Company report: EU19-067-24 Source: Agrolab A/S GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter rye Company report: EU19-067-25 Source: Oxford Agricultural Trials Limited GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU19-067-63 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU19-067-83 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU19-067-84 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU20-035-28 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU20-035-29 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU20-035-68 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU20-035-69 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Hannah Erb	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU21-019-11 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2	Amandine HEYERE	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye	N	Nufarm

KCP 6.4			Company report: EU21-019-60 Source: AGROBLU ROMANIA Srl GLP: Yes Published: No		
KCP 6.4	Alessandro SPAGNOLO	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU21-019-12 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.4	Guillaume Cardiet	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter Rye Company report: EU19-067-64 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU19-069-01 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU19-069-02 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU19-069-106 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2019	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU19-069-73 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU20-037-121 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU20-037-122 Source: ANADIAG POLSKA	N	Nufarm

			GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU20-037-123 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU20-037-28 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU20-037-29 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Oat Company report: EU21-020-44 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Amandine HEYERE	2021	Title: REG: Efficacy of CA3301 and CA3642 on Oat Company report: EU21-020-77 Source: Agroblu Romania Srl GLP: Yes Published: No	N	Nufarm
KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Oat Company report: EU19-069-72 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Spring Oat Company report: EU19-069-107 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-03 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm

KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-04 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-05 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-06 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-07 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-08 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-09 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-10 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-109 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Iva SIMEK	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-11	N	Nufarm

			Source: ANADIAG SA, CZ osp. GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-110 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-111 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-112 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-113 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-114 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-115 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-116 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-12 Source: Oxford Agricultural Trials Limited GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-120 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-121 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-122 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-124 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-125 Source: Anadiag Bulgaria LTD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-13 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-14 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-15 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley	N	Nufarm

KCP 6.4			Company report: EU19-069-16 Source: ANADIAG FRANCE GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Sabrina DUCROT	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-17 Source: ANADIAG FRANCE GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Julie Denuelle	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-19 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Audrey Meyer	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-20 Source: ANADIAG Deutschland GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Iva SIMEK	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-21 Source: ANADIAG SA, CZ osp. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Lucy STOKES	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-22 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-74 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-76 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-77 Source: Sia Agrolab Baltic	N	Nufarm

			GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-78 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-80 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-82 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-83 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-84 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-85 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-86 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-87 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm

KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-88 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-89 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-90 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU19-069-92 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-01 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-02 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-03 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-05 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-06	N	Nufarm

			Source: ANADIAG SAS GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-07 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-08 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-100 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-11 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	David BLASKO	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Ramularia collo-cygni Company report: EU20-037-124 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Ramularia collo-cygni Company report: EU20-037-128 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Hannah Erb	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-13 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Ramularia collo-cygni Company report: EU20-037-131 Source: ANADIAG ROMANIA SRL GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Ramularia collo-cygni Company report: EU20-037-132 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Ramularia collo-cygni Company report: EU20-037-133 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Ramularia collo-cygni Company report: EU20-037-134 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Puccinia hordei Company report: EU20-037-136 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Puccinia hordei Company report: EU20-037-137 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Puccinia hordei Company report: EU20-037-138 Source: ANADIAG ROMANIA SRL GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Puccinia hordei Company report: EU20-037-139 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Gabriela Kubickova	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-14 Source: ANADIAG SA, CZ osp. GLP: Yes Published: No	N	Nufarm
KCP 6.2	Anthi DELLA	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Rhynchosporium secalis	N	Nufarm

KCP 6.4			Company report: EU20-037-147 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No		
KCP 6.2 KCP 6.4	František Tóth	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter Barley against Rhynchosporium secalis Company report: EU20-037-148 Source: GEMERPRODUKT VALICE OVD GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-16 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-79 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-80 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-81 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-82 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-83 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-85 Source: SIA Agrolab Baltic	N	Nufarm

			GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-86 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-91 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-92 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-93 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-95 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Jacek JATCZAK	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-96 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-98 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2020	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU20-037-99 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm

KCP 6.2 KCP 6.4	Hannah Erb	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-01 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-02 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Sabrina DUCROT	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-03 Source: ANADIAG SAS GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Gabriela Kubickova	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-05 Source: ANADIAG SA, CZ osp. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Hannah Erb	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-06 Source: Oxford Agricultural Trials Limited GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Franziska Friedrich	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-07 Source: QUINTUS GmbH GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-46 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-47 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-48	N	Nufarm

			Source: ANADIAG POLSKA GLP: Yes Published: No		
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-49 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-50 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-51 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-52 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anna Marija Firere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-53 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Anna Marija Firere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-54 Source: SIA Agrolab Baltic GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-55 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-56 Source: ANADIAG POLSKA GLP: Yes	N	Nufarm

			Published: No		
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-57 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-58 Source: ANADIAG POLSKA GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Guillaume CARDIET	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-59 Source: Institute of Agriculture, LRCAF GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Amandine Heyere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-78 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Amandine Heyere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-80 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Amandine Heyere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-82 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Amandine Heyere	2021	Title: REG: Efficacy of CA3301 and CA3642 on Winter barley Company report: EU21-020-83 Source: Anadiag Hungary Kft. GLP: Yes Published: No	N	Nufarm
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-94 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-95 GEP, Unpublished	N	NUFARM

KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-96 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-97 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	Efficacy of CA3301&CA3642 on Spring Barley. Trial season 2019 LRCAF, EU19-069-102 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-103 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-104 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Iva SIMEK	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (foliar diseases) Trial season 2019 ANADIAG SA, CZ osp., EU19-069-33 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Iva SIMEK	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (foliar diseases) Trial season 2019 ANADIAG SA, CZ osp., EU19-069-35 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Julie Denuelle	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 Quintus, EU19-069-23 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2021 Oxford Agricultural Trials Ltd, EU21-020-12 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Julie Denuelle	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 Quintus, EU19-069-28 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Antanina Ušinskiene	2019	REG: Efficacy of CA3301&CA3642 on Spring barley (Foliar diseases) AUB Agrolab Baltic: EU19-069-100 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 Anadiag Polska, EU21-020-69 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 Anadiag Polska, EU21-020-72 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Gemerproduct Valice – OVD, EU19-069-131 GEP, Unpublished	N	NUFARM

KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Gemerproduct Valice – OVD, EU19-069-132 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Gemerproduct Valice – OVD, EU19-069-138 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Julie Denuelle	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 QUINTUS GMBH, EU19-069-30 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2021 Oxford Agricultural Trials Limited, EU21-020-10 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Lucy Howkins	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 Oxford Agricultural Trials Limited, EU19-069-27 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	REG: EFFICACY of CA3301 & CA3642 on Spring Barley (Foliar diseases) Trial season 2020 QUINTUS GMBH, EU20-037-17 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Franziska Friedrich	2021	REG: EFFICACY of CA3301 & CA3642 on Spring Barley (Foliar diseases) Trial season 2021 QUINTUS GMBH, EU21-020-09 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Franziska Friedrich	2020	REG: EFFICACY of CA3301 & CA3642 on Spring Barley (Foliar diseases) Trial season 2020 QUINTUS GMBH, EU20-037-25 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 ANADIAG POLSKA, EU19-069-99 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anna Marija Firere	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) SIA Agrolab Baltic, EU21-020-73 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Antanina Ušinskienė	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) SIA Agrolab Baltic, EU20-037-117 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Antanina Ušinskienė	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) SIA Agrolab Baltic, EU20-037-112 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 ANADIAG POLSKA, EU21-020-62 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Anadiag Hungary, EU19-069-126 GEP, Unpublished	N	NUFARM

KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against *Ramularia collo-cygni* Trial season 2020 Anadiag Hungary, EU20-037-150 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Gemerproduct Valice, EU19-069-130 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Lucy Howkins	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 Oxford Agricultural Trials Limited, EU19-069-31 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Julie Denuelle	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 Quintus GmbH, EU19-069-34 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Hannah Erb	2020	REG: EFFICACY of CA3301 & CA3642 on Spring Barley (Foliar diseases) Trial season 2020 Oxford Agricultural Trials Limited, EU20-037-27 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Steffen Brockstedt	2019	Efficacy of CA3301&CA3642 on Spring barley in Denmark, 2019 Agrolab A/S, EU19-069-24 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2020	REG: EFFICACY of CA3301 & CA3642 on Spring Barley (Foliar diseases) Trial season 2020 Oxford Agricultural Trials, EU20-037-19 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Lucy Stokes	2019	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2019 Oxford Agricultural Trials, EU19-069-32 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 Anadiag Polska, EU19-069-105 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre Ferran-Terrats	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 Anadiag Polska, EU19-069-93 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Antanina Ušinskienė	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) SIA Agrolab, EU20-037-118 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) REG - EFF - CA3301 & CA3642 Trial season 2020 LRCAF, EU20-037-120 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 Anadiag Polska, EU21-020-67 GEP, Unpublished	N	NUFARM
KCP 6.2	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) REG - EFF - CA3301 &	N	NUFARM

KCP 6.4			CA3642 Trial season 2021 LRCAF, EU21-020-68 GEP, Unpublished		
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 Anadiag Polska, EU21-020-70 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 Anadiag Polska, EU21-020-64 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-~~1120-037-~~119 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-~~1120-037-~~116 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-~~1120-037-~~115 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-~~1120-037-~~110 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Pierre FERRAN-TERRATS	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley (Foliar diseases) Trial season 2019 Anadiag Polska, EU19-069-98 (PL 19 027 PL3) GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-106 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-109 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-103 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-111 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Antanina Ušinskienė	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) SIA Agrolab, EU20-037-108 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-114 GEP, Unpublished	N	NUFARM

KCP 6.2 KCP 6.4	Guillaume Cardiet	2021	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2021 Anadiag Polska, EU21-020-61 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-113 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) Trial season 2020 Anadiag Polska, EU20-037-105 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Antanina Ušinskienė	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley (foliar diseases) SIA Agrolab, EU20-037-107 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Anadiag Romania, EU19-069-136 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Anadiag Romania, EU19-069-137 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Anadiag Hungary, EU19-069-127 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Ramularia collo-cygni Anadiag Hungary, EU20-037-149 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Pyrenophora teres GEMERPRODUKT VALICE OVD, EU20-037-160 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Puccinia hordei Anadiag Hungary, EU20-037-154 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Rhynchosporium secalis Anadiag Hungary, EU20-037-158 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Katrin Torkler	2021	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2021 Quintus GmbH, EU21-020-13 GEP, Unpublished	N	NUFARM
KCP 6.2	Lucy Stokes	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019	N	NUFARM

KCP 6.4			Oxford Agricultural Trials, EU19-069-26 GEP, Unpublished		
KCP 6.2 KCP 6.4	Katrin Torkler	2021	REG: EFFICACY of CA3301 & CA3642 on spring barley (Foliar diseases) Trial season 2021 Quintus GmbH, EU21-020-08 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Lucy Stokes	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Oxford Agricultural Trials, EU19-069-29 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Hannah Erb	2021	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2021 Oxford Agricultural Trials, EU21-020-11 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anna Marija Firere	2021	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Agrolab Baltic, EU21-020-74 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Ramularia collo-cygni Anadiag Romania, EU20-037-152 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Ramularia collo-cygni GEMERPRODUKT VALICE OVD, EU20-037-153 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: Efficacy of CA3301&CA3642 on Spring Barley Trial Season 2019 GEMERPRODUKT VALICE OVD, EU19-069-135 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Ramularia collo-cygni Anadiag Romania, EU20-037-151 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Lucy Stokes	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Oxford Agricultural Trials, EU19-069-25 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Hannah Erb	2020	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2020 Oxford Agricultural Trials, EU20-037-18 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Hannah Erb	2021	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2020 Oxford Agricultural Trials, EU20-037-21 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Anadiag Romania, EU19-069-133 GEP, Unpublished	N	NUFARM

KCP 6.2 KCP 6.4	Guillaume Cardiet	2019	REG: EFFICACY of CA3301 and CA3642 on SPRING BARLEY Trial season 2019 Anadiag Romania, EU19-069-134 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Rhynchosporium secalis Anadiag Romania, EU20-037-155 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Rhynchosporium secalis Anadiag Romania, EU20-037-156 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	Anthi Della	2020	REG: Efficacy of CA3301&CA3642 on Spring Barley against Rhynchosporium secalis Anadiag Romania, EU20-037-157 GEP, Unpublished	N	NUFARM
KCP 6.4	B. LORENZ	2019	Efficacy of CA3301 and CA3642 on wOSR in spring BioChem agrar GmbH EU19-070-01 GEP, Unpublishes	N	NUFARM
KCP 6.2 KCP 6.4	I. SIMEK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring. ANADIAG SA, CZ osp. EU19-070-03 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I. SIMEK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring. ANADIAG SA, CZ osp. EU19-070-07 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I. SIMEK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring. ANADIAG SA, CZ osp. EU19-070-08 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. DELLA	2019	REG: EFFICACY of CA3301 and CA3642 on winter OSR in spring Oxford Agricultural Trials Ltd.	N	NUFARM

			EU19-070-09 GEP, Unpublished		
KCP 6.4	A. DELLA	2019	Reg: Efficacy of CA3301 and CA3642 on wOSR in spring BioChem Agrar GmbH EU19-070-10 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	U. ZICKART	2019	Efficacy of CA3301 and CA3642 on wOSR in spring. BioChem Agrar GmbH EU19-070-11 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	T. SPITZER	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. Agriculture Research Institute Ltd EU19-070-12 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	T. BAUER	2019	Efficacy of CA3301 and CA3642 on wOSR in spring. InTec Agro Trials EU19-070-18 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. REISZOVA	2019	Efficacy of CA3301 & CA3642 on wOSR in spring. Zkusebni stanice Nechanice EU19-070-24 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I. SIMEK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring. ANADIAG SA, CZ osp. EU19-070-27 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	S. LEFEVRE	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA ANADIAG France	N	NUFARM

			EU20-014-01 GEP, Unpublished		
KCP 6.2 KCP 6.4	S. LEFEVRE	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA ANADIAG France EU20-014-02 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. ERB	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA OAT Limited EU20-014-05 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. ERB	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA OAT Limited EU20-014-06 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA Trialtec GMBH EU20-014-07 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA Trialtec GMBH EU20-014-08 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA Trialtec GMBH EU20-014-09 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	S. LEFEVRE	2020	PTZ autumn efficacy trials on OSR with focus on PYRPBR ANADIAG FRANCE	N	NUFARM

			EU20-014-19 GEP, Unpublished		
KCP 6.2 KCP 6.4	S. LEFEVRE	2020	PTZ autumn efficacy trials on OSR with focus on PYRPBR ANADIAG FRANCE EU20-014-20 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. Trialtec GMBH EU20-038-01 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J.ROHR	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. Trialtec GMBH EU20-038-02 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. ERB	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. OAT Limited EU20-038-03 GEP, Unpublished	N	NUFARM
KCP 6.4	I. SIMEK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring ANADIAG CZ EU20-038-08 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I. SIMEK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG CZ EU20-038-13 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	S. DUCROT	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG SAS	N	NUFARM

			EU20-038-14 GEP, Unpublished		
KCP 6.2 KCP 6.4	J. ROHR	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. Trialtec GMBH EU20-038-17 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. Trialtec GMBH EU20-038-18 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. Trialtec GMBH EU20-038-19 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. ERB	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Trial season 2021 Oxford Agricultural Trials Ltd EU21-021-02 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Trialtec GmbH EU21-021-03 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. ERB	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Trial season 2021 Oxford Agricultural Trials Ltd EU21-021-05 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. ROHR	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Trialtec GmbH	N	NUFARM

			EU21-021-06 GEP, Unpublished		
KCP 6.2 KCP 6.4	H. ERB	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Trial season 2021 Oxford Agricultural Trials Ltd EU21-021-07 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	P. FERRAN-TERRATS	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Trial season 2021 Anadiag SAS EU21-021-08 GEP, Unpublished	N	NUFARM
KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-28 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-29 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-30 GEP, Unpublished	N	NUFARM
KCP 6.4	R. SEMASKIENE	2019	Efficacy of CA3301 and CA3642 on wOSR in spring LRCAF, Institute of Agriculture EU19-070-31 GEP, Unpublished	N	NUFARM
KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska	N	NUFARM

			EU19-070-32 GEP, Unpublished		
KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-33 GEP, Unpublished	N	NUFARM
KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-34 GEP, Unpublished	N	NUFARM
KCP 6.4	R. SEMASKIENE	2019	Efficacy of CA3301 and CA3642 on wOSR in spring LRCAF, Institute of Agriculture EU19-070-36 GEP, Unpublished	N	NUFARM
KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-37 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring ANADIAG Polska EU19-070-38 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. USINSKIENE	2019	Efficacy of CA3301 and CA3642 on winter OSR in spring Agrolab Baltic EU19-070-40 GEP, Unpublished	N	NUFARM
KCP 6.4	R. SEMASKIENE	2019	Efficacy of CA3301 and CA3642 on wOSR in spring LRCAF, Institute of Agriculture	N	NUFARM

			EU19-070-41 GEP, Unpublished		
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Autumn efficacy trials on OSR with focus on LEPTMA ANADIAG Polska EU20-014-32 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Autumn efficacy trials on OSR with focus on LEPTMA ANADIAG Polska EU20-014-33 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Autumn efficacy trials on OSR with focus on LEPTMA ANADIAG Polska EU20-014-34 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Autumn efficacy trials on OSR with focus on LEPTMA ANADIAG Polska EU20-014-35 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA ANADIAG Polska EU20-014-36 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA ANADIAG Polska EU20-014-40 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	R. SEMASKIENE	2020	The efficacy of CA3301 and CA3642 against *Leptosphaeria maculans on* wOSR. LRCAF, Institute of Agriculture	N	NUFARM

			EU20-014-41 GEP, Unpublished		
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG Polska EU20-038-49 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG Polska EU20-038-52 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. USINSKIENE	2020	Efficacy of CA3301 & CA3642 on winter Oilseed rape (Foliar diseases). Agrolab Baltic EU20-038-53 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. USINSKIENE	2020	Efficacy of CA3301 & CA3642 on winter Oilseed rape (Foliar diseases). Agrolab Baltic EU20-038-54 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG Polska EU20-038-55 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. USINSKIENE	2020	Efficacy of CA3301 & CA3642 on winter Oilseed rape (Foliar diseases). Agrolab Baltic EU20-038-60 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG Polska	N	NUFARM

			EU20-038-64 GEP, Unpublished		
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG Polska EU20-038-65 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	J. JATCZAK	2020	Efficacy of CA3301 & CA3642 on wOSR in spring. ANADIAG Polska EU20-038-66 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. USINSKIENE	2020	Efficacy of CA3301 & CA3642 on winter Oilseed rape (Foliar diseases). Agrolab Baltic EU20-038-69 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CARDIET	2021	REG: Efficacy of CA3301&CA3642 on Winter Oilseed Rape in Spring Anadiag Polska EU21-021-19 GEP, Unpublished	N	NUFARM
KCP 6.4	G. CARDIET	2021	REG: Efficacy of CA3301&CA3642 on Winter Oilseed Rape in Spring Anadiag Polska EU21-021-20 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CARDIET	2021	REG: Efficacy of CA3301&CA3642 on Winter Oilseed Rape in Spring Anadiag Polska EU21-021-21 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CARDIET	2021	REG: Efficacy of CA3301&CA3642 on Winter Oilseed Rape in Spring Anadiag Polska	N	NUFARM

			EU21-021-23 GEP, Unpublished		
KCP 6.2 KCP 6.4	G. CARDIET	2021	REG: Efficacy of CA3301&CA3642 on Winter Oilseed Rape in Spring Anadiag Polska EU21-021-24 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CARDIET	2021	REG: Efficacy of CA3301&CA3642 on Winter Oilseed Rape in Spring Anadiag Polska EU21-021-25 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Hungary EU19-070-42 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Hungary EU19-070-43 GEP, Unpublished	N	NUFARM
KCP 6.4	H. GALY	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Romania EU19-070-44 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. GALY	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Romania EU19-070-45 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. GALY	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Romania	N	NUFARM

			EU19-070-47 GEP, Unpublished		
KCP 6.2 KCP 6.4	H. GALY	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Romania EU19-070-48 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring, Slovakia 2019 GemerproduktValice, OVD EU19-070-50 GEP, Unpublished	N	NUFARM
KCP 6.4	H. GALY	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Romania EU19-070-51 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	H. GALY	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Romania EU19-070-52 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. Gemerprodukt Valice OVD EU19-070-53 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BASKO	2019	Efficacy of CA3301 & CA3642 on winter OSR in spring. ANADIAG Hungary EU19-070-54 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Hungary	N	NUFARM

			EU20-014-42 GEP, Unpublished		
KCP 6.2 KCP 6.4	D. BLASKO	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Hungary EU20-014-43 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Hungary EU20-014-44 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Hungary EU20-014-45 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Hungary EU20-014-46 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Romania EU20-014-47 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Romania EU20-014-48 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Romania	N	NUFARM

			EU20-014-49 GEP, Unpublished		
KCP 6.2 KCP 6.4	I.ENE	2020	PTZ autumn efficacy trials on OSR with focus on LEPTMA. ANADIAG Romania EU20-014-50 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum.* ANADIAG Hungary EU20-038-71 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Sclerotinia sclerotiorum*. ANADIAG Hungary EU20-038-72 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I. ENE	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Sclerotinia sclerotiorum*. ANADIAG Romania EU20-038-74 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Sclerotinia sclerotiorum*. ANADIAG Romania EU20-038-75 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Sclerotinia sclerotiorum*. Gemerprodukt Valice OVD EU20-038-76 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Sclerotinia sclerotiorum*. Gemerprodukt Valice OVD	N	NUFARM

			EU20-038-77 GEP, Unpublished		
KCP 6.2 KCP 6.4	D. BLASKO	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum* and *Plenodomus lingam* ANADIAG Hungary EU20-038-78 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum.* ANADIAG Romania EU20-038-79 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum.* ANADIAG Romania EU20-038-80 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	I.ENE	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum.* ANADIAG Romania EU20-038-81 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum.* Gemerprodukt Valice OVD EU20-038-82 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum.* Gemerprodukt Valice OVD EU20-038-83 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	D. BLASKO	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Erysiphe crucifearum*	N	NUFARM

			ANADIAG Hungary EU20-038-84 GEP, Unpublished		
KCP 6.2 KCP 6.4	I.ENE	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Alternaria brassicae.* ANADIAG Romania EU20-038-86 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	F. TOTH	2020	Efficacy of CA3301 & CA3642 on winter OSR in spring against *Alternaria brassicae*. Gemerprodukt Valice OVD EU20-038-87 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. HEYERE	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Anadiag Hungary Kft. EU21-021-27 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. HEYERE	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Anadiag Hungary Kft. EU21-021-28 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CASSANI	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Agroblu Romania SrL EU21-021-29 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CASSANI	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Agroblu Romania SrL EU21-021-30 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	A. HEYERE	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring	N	NUFARM

			Anadiag Hungary Kft. EU21-021-32 GEP, Unpublished		
KCP 6.2 KCP 6.4	G. CASSANI	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Agroblu Romania SrL EU21-021-33 GEP, Unpublished	N	NUFARM
KCP 6.2 KCP 6.4	G. CASSANI	2021	REG: Efficacy of CA3301&CA3642 on wOSR in spring Agroblu Romania SrL EU21-021-34 GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2020	Sensitivity data on Prothioconazole against SEPTTR 2020 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2021	Sensitivity data on Prothioconazole against SEPTTR 2021 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2020	Sensitivity data on Prothioconazole against PYRNTE 2020 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2021	Sensitivity data on Prothioconazole against ERYSGR 2021 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2017	Sensitivity data on Azoxystrobin against PUCCHD 2017 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2020	Sensitivity data on Azoxystrobin against PUCCHD 2020 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2016	Sensitivity data on Azoxystrobin against PUCCRT 2016 Epilogic GmbH	N	NUFARM

			- Non-GEP, Unpublished		
KCP 6.3	Anon	2020	Sensitivity data on Azoxystrobin against PUCCRT 2020 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2017	Sensitivity data on Azoxystrobin against PUCCST 2017 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2020	Sensitivity data on Azoxystrobin against PUCCST 2020 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2017	Sensitivity data on Azoxystrobin against PYRNTE 2017 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2018	Sensitivity data on Azoxystrobin against PYRNTE 2018 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2019	Sensitivity data on Azoxystrobin against PYRNTE 2019 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2020	Sensitivity data on Azoxystrobin against PYRNTE 2020 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2017	Sensitivity data on Azoxystrobin against PYRNTR 2017 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2018	Sensitivity data on Azoxystrobin against PYRNTR 2018 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM
KCP 6.3	Anon	2019	Sensitivity data on Azoxystrobin against PYRNTR 2019 Epilogic GmbH - Non-GEP, Unpublished	N	NUFARM

List of data submitted by the applicant and not relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
-	-	-	-	-	-

List of data relied on not submitted by the applicant but necessary for evaluation

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
-	-	-	-	-	-