REGISTRATION REPORT

Part B

Section 3

Efficacy Data and Information

Concise summary

Product code: A23109A

Product name: ORONDIS VIP

Chemical active substances:

Metalaxyl-M (R-enantiomer), 174.4 g/L
Oxathiapiprolin, 30 g/L

Central Zone

Zonal Rapporteur Member State : POLAND

CORE ASSESSMENT

(New authorisation)

Applicant: Syngenta

Submission date: June 2022

MS Finalisation date: March 2023 (initial Core Assessment)

November 2023 (final Core Assessment)

Version history

When	What
June 2022	Initial version of dRR for submission to zRMS
March 2023	GAP table update for PL (*Bremia lactucae* on lettuce is considered under Art. 33, not 51)
March 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.
November 2023	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.

The summaries and evaluations contained in this registration report may be based on unpublished proprietary data submitted for the purpose of the assessment undertaken by the regulatory authority that prepared it. Other registration authorities should not grant, amend or renew a registration on the basis of the summaries and evaluation of unpublished proprietary data contained in this registration report unless they have received the data on which the summaries and evaluation are based.

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- From a second party that has obtained permission from the owner of the data for this purpose or, alternatively, the applicant has received permission from the data owner that the summaries and evaluation contained in this registration report may be used in lieu of the data, or

- Following expiry of any period of exclusive use, by offering, in certain jurisdictions, mandatory compensation,

unless the period of protection of the proprietary data concerned has expired.

Applicants wishing to avail of information in this registration report should seek advice from the regulatory authority to which the application is made concerning the requirements in their country.

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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 A23109A (Orondis VIP) in Poland, Austria, Belgium, Czech Republic, Germany, Netherlands and Slovakia. Orondis VIP contains two active substances: metalaxyl-M (174,4 g/l) and oxathiapiprolin (30 g/l). This product is indicated to use as fungicide in field vegetable crops.

MED
Based on the submitted trial results, dose rate of 0,5 l/ha can be determined minimum effective dose to control of disease pathogens in vegetables indicated in the GAP table.

Efficacy
A23109A at 0,5 l/ha is effective to control of *Phytophthora porri* on leek, *Bremia lactucae* on lettuce and *Peronospora destructor* on onion. Limited number of results for the main assessment types (PESSEV, PESINC) have been presented for *Peronospora* spp. on Brassica vegetables and *Peronospora farinosa* f. sp. *spinaciae* on spinach. Furthermore, no data have been submitted for *Phytophthora* spp. on herbs and edible flowers and *Plasmopara umbelliferarum* on parsley. No efficacy trials were available in the South-East EPPO zone and for other claimed crops in any EPPO zones. The cMSs are kindly asked to consider these uses on national level*.

Selectivity
No special selectivity trials have been submitted. The phytotoxicity assessment was provided in the field efficacy trials in the Maritime and North-East EPPO climatic zones. No negative symptoms were observed in all efficacy trials. A23109A at dose rate of 0,5 l/ha is safe for lettuce, onion, leek, Brassicas vegetables and spinach.

Resistance risk
The resistance management strategy for A23109A is based on limited number of applications (two applications per crop/season) and use of alternation with products from different cross resistance groups. 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	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/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)															
AT-1	Austria	Baby leaves	F	~~*Bremia lactucae* [BREMLA]~~ Downy Mildews (1PEROF-Peronosporaceae)	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-3	Austria	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-5	Austria	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-7	Austria	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-8	Austria	Chards and beet leaves [BEAVD]	F	~~*Hyaloperonospora parasitica* [PEROPA]~~ *Peronospora farinosa* [PEROFA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-9	Austria	Chicory [CICIN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-10	Austria	Chives [ALLSC]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-11	Austria	Common purslane [POROL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-12	Austria	Cress [CRESS]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-14	Austria	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-15	Austria	Endive [CICEN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-16	Austria	Escarole [CICEL]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-17	Austria	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-18	Austria	Garlic [ALLSA]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-20	Austria	Head cabbage [BRSOL]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-21	Austria	~~Herbs and edible flowers [NNNEF]~~ Herb-crop (3HERC)	F	~~*Phytophthora/Downy mildew* [SCLPST]~~ Downy Mildews (1PEROF-Peronosporaceae)	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-23	Austria	Kale [BRSOA]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-24	Austria	Lamb's lettuce [VLLLO]	F	~~*Bremia lactucae* [BREMLA]~~ Downy Mildews (1PEROF-Peronosporaceae)	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-26	Austria	Leafy brassica [3LFBC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-27	Austria	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-28	Austria	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A
AT-29	Austria	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	A
AT-30	Austria	Mustard, red [BRSJU]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-31	Austria	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-32	Austria	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
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					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-33	Austria	Parsley [PARCR]	F	*Downy Mildew - Plasmopara umbelliferarum* [PLASCR]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-37	Austria	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-38	Austria	Purple-vein rocket [ERUVE]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	C
AT-40	Austria	Savoy cabbage [BRSOS]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
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					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-41	Austria	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-42	Austria	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-43	Austria	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10		A
AT-44	Austria	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C
AT-45	Austria	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
AT-46	Austria	~~Watercress [NAAOF]~~ Cress (3CRRC)	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Only on soils without water-coverage Consideration of authorization on the grounds of art. 51 on the national level	C
BE-1	Belgium	Baby leaves	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
BE-3	Belgium	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
BE-5	Belgium	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
BE-7	Belgium	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
~~BE-8~~	~~Belgium~~	~~Chicory [CICIN]~~	~~F~~	~~*Bremia lactucae* [BREMLA]~~	~~Foliar~~	~~BBCH 12 – 49~~	~~a) 2 b) 2~~	~~7~~	~~a) 0.5 b) 1~~	~~a) 87.2 b) 174.4~~	~~a) 15 b) 30~~	~~200-800~~	~~10~~	~~Max 2 app per year in same field~~	

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
BE-9	Belgium	Cress [CRESS]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
BE-11	Belgium	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
BE-12	Belgium	Endive [CICEN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
BE-13	Belgium	Escarole [CICEL]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
BE-14	Belgium	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-15	Belgium	Garlic [ALLSA]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-17	Belgium	Head cabbage [BRSOL]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
BE-18	Belgium	Herbs and edible flowers [NNNEF]	F	*Phytophthora/Downy mildew* [SCLPST]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
BE-19	Belgium	Lamb's lettuce [VLLLO]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
BE-21	Belgium	Leafy brassica [3LFBC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
BE-22	Belgium	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-23	Belgium	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A
BE-24	Belgium	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	A
BE-25	Belgium	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-26	Belgium	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	-	A
BE-28	Belgium	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		C
BE-29	Belgium	Purple-vein rocket [ERUVE]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
BE-30	Belgium	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-31	Belgium	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
BE-32	Belgium	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10		C
BE-33	Belgium	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-34	Belgium	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
BE-35	Belgium	Watercress [NAAOF]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
CZ-1	Czech Republic	Baby leaves	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-3	Czech Republic	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-5	Czech Republic	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-7	Czech Republic	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-8	Czech Republic	Chards and beet leaves [BEAVD]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Minor use	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
CZ-9	Czech Republic	Chicory [CICIN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-10	Czech Republic	Chives [ALLSC]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-11	Czech Republic	Common purslane [POROL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Minor use	C
CZ-12	Czech Republic	Cress [CRESS]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-14	Czech Republic	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-15	Czech Republic	Endive [CICEN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-16	Czech Republic	Escarole [CICEL]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-17	Czech Republic	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
CZ-18	Czech Republic	Garlic [ALLSA]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C
CZ-20	Czech Republic	Head cabbage [BRSOL]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-21	Czech Republic	Herbs and edible flowers [NNNEF]	F	*Phytophthora/Downy mildew* [SCLPST]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-22	Czech Republic	Iceberg lettuce	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-24	Czech Republic	Kale [BRSOA]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-27	Czech Republic	Lamb's lettuce [VLLLO]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-29	Czech Republic	Leafy brassica [3LFBC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-30	Czech Republic	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
CZ-31	Czech Republic	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	A
CZ-32	Czech Republic	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	A
CZ-33	Czech Republic	Mustard, red	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-34	Czech Republic	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C
CZ-35	Czech Republic	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	A
CZ-36	Czech Republic	Parsley [PARCR]	F	*Downy Mildew - Plasmopara umbelliferarum* [PLASCR]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-40	Czech Republic	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C
CZ-41	Czech Republic	Purple-vein rocket [ERUVE]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
CZ-43	Czech Republic	Savoy cabbage [BRSOS]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor use	C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
CZ-44	Czech Republic	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C
CZ-45	Czech Republic	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C
CZ-46	Czech Republic	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Minor use	C
CZ-47	Czech Republic	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C
CZ-48	Czech Republic	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor use	C
CZ-49	Czech Republic	Watercress [NAAOF]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Minor use	C
DE-1	Germany	Baby leaves	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-3	Germany	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-5	Germany	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-7	Germany	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-8	Germany	Chards and beet leaves [BEAVD]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-9	Germany	Chicory [CICIN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-10	Germany	Chives [ALLSC]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-11	Germany	Common purslane [POROL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-12	Germany	Cress [CRESS]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-14	Germany	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-15	Germany	Endive [CICEN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-16	Germany	Escarole [CICEL]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-17	Germany	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-18	Germany	Garlic [ALLSA]	F	*Peronospora destructor*	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-20	Germany	Head cabbage [BRSOL]	F	~~[PERODE]~~ *Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
DE-21	Germany	Herbs and edible flowers [NNNEF]	F	*Phytophthora/Downy mildew* [SCLPST]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-23	Germany	Kale [BRSOA]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-24	Germany	Lamb's lettuce [VLLLO]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-26	Germany	Leafy brassica [3LFBC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-27	Germany	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-28	Germany	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A
DE-29	Germany	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	A
DE-30	Germany	Mustard, red	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-31	Germany	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-32	Germany	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-33	Germany	Parsley [PARCR]	F	*Downy Mildew - Plasmopara umbelliferarum* [PLASCR]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-37	Germany	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-38	Germany	Purple-vein rocket [ERUVE]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-40	Germany	Savoy cabbage [BRSOS]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-41	Germany	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-42	Germany	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-43	Germany	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-44	Germany	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.
DE-45	Germany	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Consideration of authorization on the grounds of art. 51 on the national level	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
DE-46	Germany	Watercress [NAAOF]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field Consideration of authorization on the grounds of art. 51 on the national level	n.r.
NL-1	Netherlands	Baby leaves	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
NL-3	Netherlands	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
NL-5	Netherlands	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
NL-7	Netherlands	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
~~NL-8~~	~~Netherlands~~	~~Chicory [CICIN]~~	~~F~~	~~*Bremia lactucae* [BREMLA]~~	~~Foliar~~	~~BBCH 12 – 49~~	~~a) 2 b) 2~~	~~7~~	~~a) 0.5 b) 1~~	~~a) 87.2 b) 174.4~~	~~a) 15 b) 30~~	~~200-800~~	~~10~~	~~Max 2 app per year in same field~~	
NL-10	Netherlands	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
NL-11	Netherlands	Endive [CICEN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
NL-12	Netherlands	Escarole [CICEL]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
NL-13	Netherlands	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
NL-14	Netherlands	Garlic [ALLSA]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
NL-16	Netherlands	Head cabbage [BRSOL]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
NL-17	Netherlands	Herbs and edible flowers [NNNEF]	F	*Phytophthora/Downy mildew* [SCLPST]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
NL-18	Netherlands	Lamb's lettuce [VLLLO]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
NL-20	Netherlands	Leafy brassica [3LFBC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
NL-21	Netherlands	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
NL-22	Netherlands	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A
NL-23	Netherlands	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	A
NL-24	Netherlands	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
NL-25	Netherlands	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A
NL-27	Netherlands	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
NL-28	Netherlands	Purple-vein rocket [ERUVE]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	C
NL-29	Netherlands	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
NL-30	Netherlands	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
NL-31	Netherlands	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10		N
NL-32	Netherlands	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
NL-33	Netherlands	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		C
PL-1	Poland	Baby leaves	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-3	Poland	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-3a	Poland	Broccoli [BRSOK]	F	*Albugo sp.* [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-5	Poland	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-5a	Poland	Brussels sprouts [BRSOF]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-7	Poland	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n r.
PL-7a	Poland	Cauliflower [BRSOB]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-8	Poland	Chards and beet leaves [BEAVD]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Minor Use – Art 51	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
PL-9	Poland	Chicory [CICIN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-10	Poland	Chives [ALLSC]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-11	Poland	Common purslane [POROL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Minor Use – Art 51	n.r.
PL-12	Poland	Cress [CRESS]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-14	Poland	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-14a	Poland	Curly kale [BRSOC]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-15	Poland	Endive [CICEN]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
PL-16	Poland	Escarole [CICEL]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-17	Poland	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-18	Poland	Garlic [ALLSA]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-20	Poland	Head cabbage [BRSOL]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
PL-20a	Poland	Head cabbage [BRSOL]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-21	Poland	Herbs and edible flowers [NNNEF]	F	*Phytophthora/Downy mildew* [SCLPST]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-23	Poland	Kale [BRSOA]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-23a	Poland	Kale [BRSOA]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
PL-24	Poland	Lamb's lettuce [VLLLO]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-26	Poland	Leafy brassica [3LFBC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-26a	Poland	Leafy brassica [3LFBC]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-27	Poland	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-28	Poland	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
PL-29	Poland	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	A
PL-30	Poland	Mustard, red	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-31	Poland	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-32	Poland	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		A

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
PL-33	Poland	Parsley [PARCR]	F	*Downy Mildew - Plasmopara umbelliferarum* [PLASCR]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-37	Poland	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-37a	Poland	Pe-tsai [BRSPK]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-38	Poland	Purple-vein rocket [ERUVE]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
PL-40	Poland	Savoy cabbage [BRSOS]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-40a	Poland	Savoy cabbage [BRSOS]	F	*Albugo* sp. [ALBUSP]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	Minor Use – Art 51	n.r.
PL-41	Poland	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-42	Poland	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-43	Poland	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10	Minor Use – Art 51	n.r.

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
PL-44	Poland	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-45	Poland	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14	Minor Use – Art 51	n.r.
PL-46	Poland	Watercress [NAAOF]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Minor Use – Art 51 Max 2 app per year in same field	n.r.
SK-1	Slovakia	Baby leaves	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
SK-3	Slovakia	Broccoli [BRSOK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	-	N
SK-5	Slovakia	Brussels sprouts [BRSOF]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	-	N
SK-7	Slovakia	Cauliflower [BRSOB]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	-	N
SK-8	Slovakia	Chards and beet leaves [BEAVD]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10		N

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [(e)]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
SK-9	Slovakia	Chives [ALLSC]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
SK-10	Slovakia	Common purslane [POROL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10		N
SK-11	Slovakia	Cress [CRESS]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
SK-13	Slovakia	Curly kale [BRSOC]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
SK-14	Slovakia	Garlic [ALLSA]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-15	Slovakia	Garlic [ALLSA]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-17	Slovakia	Head cabbage [BRSOL]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	-	N
SK-18	Slovakia	Herbs and edible flowers [NNNEF]	F	*Phytophthora/Downy mildew* [SCLPST]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
SK-20	Slovakia	Kale [BRSOA]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20	-	N

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
SK-22	Slovakia	Kale [BRSOA]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
SK-23	Slovakia	Leek [ALLPO]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-24	Slovakia	Leek [ALLPO]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-25	Slovakia	Lettuce [LACSA]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
SK-26	Slovakia	Mustard, red	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
SK-27	Slovakia	Onion [ALLCE]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-28	Slovakia	Onion [ALLCE]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-29	Slovakia	Parsley [PARCR]	F	*Downy Mildew - Plasmopara umbelliferarum* [PLASCR]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
SK-33	Slovakia	Pe-tsai [BRSPK]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N

1	2	3	4	5	6	7	8	9	10	11	11	12	13	14	15
Use-No. [e]	**Member state(s)**	**Crop**	**F, G, or I**	**Pests or Group of pests c**	**Application**				**Application rate**				**PHI** (days)	**Remarks:**	**zRMS Conclusion** (efficacy)
					Method	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 MFX/ha a) max. rate per appl. b) max. total rate per crop/season	g OXTP/ha a) max. rate per appl. b) max. total rate per crop /season	Water L/ha min / max			
SK-35	Slovakia	Savoy cabbage [BRSOS]	F	*Hyaloperonospora parasitica* [PEROPA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7-10	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	20		N
SK-36	Slovakia	Shallot [ALLAS]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-37	Slovakia	Shallot [ALLAS]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-38	Slovakia	Spinach [SPQOL]	F	*Peronospora farinosa f. sp. spinaciae* [PEROFS]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-600	10		N
SK-39	Slovakia	Spring, welsh and green onion [ALLFI]	F	*Peronospora destructor* [PERODE]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-40	Slovakia	Spring, welsh and green onion [ALLFI]	F	*Phytophthora porri* [PHYTPO]	Foliar	BBCH 12 - 48	a) 2 b) 2	12-14	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	14		N
SK-41	Slovakia	Watercress [NAAOF]	F	*Bremia lactucae* [BREMLA]	Foliar	BBCH 12 - 49	a) 2 b) 2	7	a) 0.5 b) 1	a) 87.2 b) 174.4	a) 15 b) 30	200-800	10	Max 2 app per year in same field	N
Minor uses according to Article 51 (zonal uses)															
None															

* 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, , G: professional greenhouse use, , I: indoor application

Remarks table heading:

(a) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)
(b) Catalogue of pesticide formulation types and international coding system CropLife International Technical Monograph n°2, 6th Edition Revised May 2008
(c) g/kg or g/l
(d) Select relevant
(e) Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
(f) No authorization possible for uses where the line is highlighted in grey, Use should be crossed out when the notifier no longer supports this use.

Remarks columns:

1 Numeration necessary to allow references
2 Use official codes/nomenclatures of EU Member States
3 For crops, the EU and Codex classifications (both) should be used; when relevant, the use situation should be described (e.g. fumigation of a structure)
4 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
5 Scientific names and EPPO-Codes of target pests/diseases/ weeds or, when relevant, the common names of the pest groups (e.g. biting and sucking insects, soil born insects, foliar fungi, weeds) and the developmental stages of the pests and pest groups at the moment of application must be named.
6 Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated.
7 Growth stage at first and last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on season at time of application
8 The maximum number of application possible under practical conditions of use must be provided.
9 Minimum interval (in days) between applications of the same product
10 For specific uses other specifications might be possible, e.g.: g/m³ in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.
11 The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).
12 If water volume range depends on application equipments (e.g. ULVA or LVA) it should be mentioned under “application: method/kind”.
13 PHI - minimum pre-harvest interval
14 Remarks may include: Extent of use/economic importance/restrictions

Column 15 – zRMS conlusions

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

This document summarises the information related to the efficacy data of the plant protection product A23109A containing:

- oxathiapiprolin which was approved under Regulation (EC) No 1107/2009 by Commission Implementing Regulation (EU) No 540/2011 and amended by Commission Implementing Regulation (EU) Regulation 2017/239, in force
- and metalaxyl-M included in Annex I of Council Directive 91/414/EEC by Commission Directive 2002/64/EC and approved under Regulation (EC) No 1107/2009 by Commission Implementing Regulation (EU) No 540/2011 and amended by Commission Implementing Regulation (EU) 2020/617 of 5 May 2020 renewing the approval of the active substance metalaxyl-M up to 31 May 2035.

The SANCO/EFSA report for oxathiapiprolin (SANTE/11169/2016 rev 3 – 7 December 2016, amended on 25 March 2021) is considered to provide the relevant review information or a reference to where such information can be found. The EFSA Scientific Review for oxathiapiprolin (EFSA Journal 2016;14(7):4504) is considered to provide the relevant review information or a reference to where such information can be found.

The SANCO/EFSA report for metalaxyl-M (SANTE/11112/2019 Rev 5 – 24 March 2020) is considered to provide the relevant review information or a reference to where such information can be found.

The data presented in this dossier fully support the registration of A23109A for the control of downy mildew on lettuce and herbs, spinach, onion, garlic, shallot, leek, spring, green, welsh onion and Brassica crops. The intended member states for an authorisation of the product are:

- Central regulatory zone: Austria, Belgium, Czech Republic, Germany, Netherlands, Poland, Slovakia

The detailed assessment of the individual trial and study data is located in the following report:

Report:	**KCP 6 / 01 Biological Assessment Dossier A23109A** Syngenta File No. VV-882408

Description of active substances

A23109A is a dispersible concentrate (DC) containing 30 g oxathiapiprolin and 174.4 g metalaxyl-M (R-enantiomer) per litre product.

<u>Oxathiapiprolin</u>

Oxathiapiprolin is a preventive fungicide with limited curative, and residual activity against oomycete fungi and used for the control of Phytophthora and downy mildews of numerous crops. Oxathiapiprolin belongs to the chemical group Piperidinyl thiazole isoxazolines, mode of action OSBPI oxysterol binding protein homologue inhibition, FRAC code 49. Oxathiapiprolin inhibits an oxysterol binding protein (OSBP) homologue. Oxysterol binding proteins are implicated in the movement of lipids between membranes, among other processes. Inhibiting OSBP may disrupt other processes in the fungal cell, such as signalling, maintaining cell membranes, and the formation of more complex lipids that are essential for the cell to survive.

Metalaxyl-M

Metalaxyl-M can be formulated as liquid and as solid products. In product mixtures, the formulation type must suit the characteristics of all active ingredients present in the mixture.
It is admitted that metalaxyl-M is taken up very rapidly following root, stem or leaf application. Translocation of the compound is primarily acropetal. This acropetal or upward movement is a gradual and continuous process, thus providing additional fungicide activity and disease control as new plant growth occurs over several weeks (or months after soil treatment). Several studies showed limited basipetal (phloem) transport of metalaxyl; this is also expected to apply to metalaxyl-M. The important systemic properties of the compound provide more uniform distribution than is normally achieved with protectant fungicides and make it less susceptible to removal by rainfall.
Metalaxyl-M inhibits mycelium growth and spore formation both *in vivo* and *in vitro*. Foliar pathogens are inhibited only after they have penetrated the leaves.
Metalaxyl-M inhibits the fungus by selectively interfering with the synthesis of ribosomal RNA; more specifically, it inhibits the activity of the RNA polymerase 1-template complex.

Mode of action

Table 3.2-1: Details of the active substances

Active substance	Oxathiapiprolin	Metalaxyl-M
Concentration (Unit: g/kg or g/L...)	30 g/L	174.4 g/L
Chemical group	Piperidinyl-thiazole isoxazolines	Phenylamide (acylalanine)
Mode of action	F9: lipid homeostasis and transfer/storage OSBPI oxysterol binding protein homologue inhibition Preventative with residual disease control. It acts via an oxysterol binding protein. FRAC code: 49	A1: RNA polymerase I Nucleic acid methabolism FRAC code: 4
Plant translocation	Locally systemic fungicide, translaminar mobility, translocated in the xylem	systemic
Biological action	Preventive fungicide with some curative, and residual activity	Foliar and root, preventive and curative fungicide

Description of the plant protection product

A23109A is a dispersible concentrate (DC) containing 30 g oxathiapiprolin and 174.4 g metalaxyl-M (R-enantiomer) per litre product. Please note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although indicated 90 g ai/ha in the trial reports, based on global definition (R+S enantiomer).

In leafy vegetable crops, bulb crops and brassica crops, the proposed maximum rate of A23109A is 0.5 litre per hectare (l/ha) with a maximum of 2 applications per season, which will deliver 15 g oxathiapiprolin per hectare and 87.2 g metalaxyl-M per hectare. To support the proposed uses of A23109A, data is presented from trials conducted on lettuce, onion, brassica crops and spinach over three seasons 2019, 2020 and 2021 in a wide range of European countries in the Maritime EPPO zone (Belgium, Czech Republic, Germany, France, The Netherlands) and North-East EPPO zone (Poland). The combination of oxathiapiprolin and metalaxyl-M in A23109A will provide broad spectrum control against downy mildews with good crop safety.

Table 3.2-2: Simplified table of currently requested uses for A23109A

Central regulatory zone

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
baby leaves	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
broccoli	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Brussels sprouts	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
cauliflower	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
chards and beet leaves	*Peronospora farinosa f. sp. spinaciae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
chicory	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
chives	*Phytophthora porri*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
common purslane	*Peronospora farinosa f. sp. spinaciae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
cress	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 1 b) 2	max 2 app per year in same field; PR MFX 74-136 g /ha
curly kale	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
endive	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
escarole	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
garlic	*Phytophthora porri*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Peronospora destructor*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
head cabbage	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Herbs and edible flowers	*Phytophthora/Downy mildew*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Kale	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
lamb's lettuce	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
leafy brassica	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Peronospora destructor*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Phytophthora porri*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
lettuce	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Mustard, red	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
onion	*Phytophthora porri*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
onion	*Peronospora destructor*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
parsley	*Downy Mildew - Plasmopara umbelliferarum*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
pe-tsai	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
purple-vein rocket	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Savoy cabbage	*Hyaloperonospora parasitica*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
shallot	*Phytophthora porri*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
shallot	*Peronospora destructor*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
spinach	*Peronospora farinosa f. sp. spinaciae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	-
spring, welsh and green onion	*Phytophthora porri*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	
watercress	*Bremia lactucae*	Austria	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
baby leaves	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
broccoli	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
Brussels sprouts	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
cauliflower	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
~~chicory~~	~~*Bremia lactucae*~~	~~Belgium~~	~~Yes~~	~~a) 0.5 b) 1~~	~~a) 2 b) 2~~	~~max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle~~
cress	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 1 b) 2	max 2 app per year in same field; PR MFX 74-136 g /ha
curly kale	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
endive	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
escarole	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
garlic	*Phytophthora porri*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Peronospora destructor*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
head cabbage	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
Herbs and edible flowers	*Phytophthora/Downy mildew*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
lamb's lettuce	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
leafy brassica	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
leek	*Peronospora destructor*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Phytophthora porri*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
lettuce	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
onion	*Phytophthora porri*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
onion	*Peronospora destructor*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	-
pe-tsai	*Hyaloperonospora parasitica*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
purple-vein rocket	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
shallot	*Phytophthora porri*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
shallot	*Peronospora destructor*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
spinach	*Peronospora farinosa f. sp. spinaciae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	-
spring, welsh and green onion	*Phytophthora porri*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	
watercress	*Bremia lactucae*	Belgium	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
baby leaves	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
broccoli	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Brussels sprouts	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
cauliflower	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
chards and beet leaves	*Peronospora farinosa f. sp. spinaciae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
chicory	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
chives	*Phytophthora porri*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
common purslane	*Peronospora farinosa f. sp. spinaciae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
cress	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 1 b) 2	max 2 app per year in same field; PR MFX 74-136 g /ha
curly kale	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
endive	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
						in 2 crop cycles or 2 app in 1 crop cycle
escarole	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
garlic	*Phytophthora porri*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Peronospora destructor*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
head cabbage	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Herbs and edible flowers	*Phytophthora/Downy mildew*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
iceberg lettuce	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Kale	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
~~Kale~~	~~*Hyaloperonospora parasitica*~~	~~Czech Republic~~	~~Yes~~	~~a) 0.5 b) 1~~	~~a) 2 b) 2~~	-
lamb's lettuce	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
leafy brassica	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Peronospora destructor*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Phytophthora porri*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
lettuce	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Mustard, red	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
onion	*Phytophthora porri*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
onion	*Peronospora destructor*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
parsley	*Downy Mildew - Plasmopara umbelliferarum*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
pe-tsai	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
purple-vein rocket	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Savoy cabbage	*Hyaloperonospora parasitica*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
shallot	*Phytophthora porri*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
shallot	*Peronospora destructor*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
spinach	*Peronospora farinosa f. sp. spinaciae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	-
spring, welsh and green onion	*Phytophthora porri*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	
watercress	*Bremia lactucae*	Czech Republic	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
baby leaves	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
broccoli	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Brussels sprouts	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
cauliflower	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
chards and beet leaves	*Peronospora farinosa f. sp. spinaciae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
chicory	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
chives	*Phytophthora porri*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
common purslane	*Peronospora farinosa f. sp. spinaciae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
cress	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 1 b) 2	max 2 app per year in same field; PR MFX 74-136 g /ha
curly kale	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
endive	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
						in 2 crop cycles or 2 app in 1 crop cycle
escarole	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
garlic	*Phytophthora porri*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Peronospora destructor*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
head cabbage	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Herbs and edible flowers	*Phytophthora/Downy mildew*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Kale	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
lamb's lettuce	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
leafy brassica	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Peronospora destructor*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Phytophthora porri*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
lettuce	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Mustard, red	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
onion	*Phytophthora porri*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
onion	*Peronospora destructor*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
parsley	*Downy Mildew - Plasmopara umbelliferarum*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
pe-tsai	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
purple-vein rocket	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	**Targets**			**L product / ha a) max. rate per appl. b) max. total rate per crop/season**	**Max. appl. number a) per use b) per crop/ season**	
Savoy cabbage	*Hyaloperonospora parasitica*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
shallot	*Phytophthora porri*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
shallot	*Peronospora destructor*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
spinach	*Peronospora farinosa f. sp. spinaciae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	-
spring, welsh and green onion	*Phytophthora porri*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	
watercress	*Bremia lactucae*	Germany	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
baby leaves	*Bremia lactucae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
broccoli	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
Brussels sprouts	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
cauliflower	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
~~chicory~~	~~*Bremia lactucae*~~	~~Netherlands~~	~~Yes~~	~~a) 0.5 b) 1~~	~~a) 2 b) 2~~	~~max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle~~
curly kale	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	-
endive	*Bremia lactucae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
escarole	*Bremia lactucae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
garlic	*Phytophthora porri*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Peronospora destructor*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
head cabbage	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
Herbs and edible flowers	*Phytophthora/Downy mildew*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
lamb's lettuce	*Bremia lactucae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
leafy brassica	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
leek	*Peronospora destructor*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Phytophthora porri*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
lettuce	*Bremia lactucae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
onion	*Phytophthora porri*	Netherlands	No	a) 0.5 b) 1	a) 2 b) 2	
onion	*Peronospora destructor*	Netherlands	No	a) 0.5 b) 1	a) 2 b) 2	-
pe-tsai	*Hyaloperonospora parasitica*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
purple-vein rocket	*Bremia lactucae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
shallot	*Phytophthora porri*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
shallot	*Peronospora destructor*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
spinach	*Peronospora farinosa f. sp. spinaciae*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	-
spring, welsh and green onion	*Phytophthora porri*	Netherlands	Yes	a) 0.5 b) 1	a) 2 b) 2	
baby leaves	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
broccoli	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
broccoli	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
Brussels sprouts	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
Brussels sprouts	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
cauliflower	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use -Art 51
cauliflower	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
chards and beet leaves	*Peronospora farinosa f. sp. spinaciae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 PR MFX 97 g/ha
chicory	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
chives	*Phytophthora porri*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
common purslane	*Peronospora farinosa f. sp. spinaciae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 PR MFX 97 g/ha
cress	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 1 b) 2	Minor Use – Art 51 max 2 app per year in same field; PR MFX 74-136 g /ha
curly kale	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
curly kale	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
endive	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
escarole	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
garlic	*Phytophthora porri*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
garlic	*Peronospora destructor*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
head cabbage	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	-
head cabbage	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
Herbs and edible flowers	*Phytophthora/Downy mildew*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Kale	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
Kale	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
lamb's lettuce	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
						max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
leafy brassica	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
leafy brassica	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
leek	*Peronospora destructor*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
leek	*Phytophthora porri*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	
lettuce	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Mustard, red	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
onion	*Phytophthora porri*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use - Art 51
onion	*Peronospora destructor*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	-
parsley	*Downy Mildew - Plasmopara umbelliferarum*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
pe-tsai	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
pe-tsai	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
purple-vein rocket	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Savoy cabbage	*Hyaloperonospora parasitica*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
Savoy cabbage	*Albugo sp.*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
shallot	*Phytophthora porri*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
shallot	*Peronospora destructor*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
spinach	*Peronospora farinosa f. sp. spinaciae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51 PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
spring, welsh and green onion	*Phytophthora porri*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51
watercress	*Bremia lactucae*	Poland	Yes	a) 0.5 b) 1	a) 2 b) 2	Minor Use – Art 51

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
						max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
baby leaves	*Bremia lactucae*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
broccoli	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Brussels sprouts	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
cauliflower	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
chards and beet leaves	*Peronospora farinosa f. sp. spinaciae*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
chives	*Phytophthora porri*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
common purslane	*Peronospora farinosa f. sp. spinaciae*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
cress	*Bremia lactucae*	Slovakia	Yes	a) 0.5 b) 1	a) 1 b) 2	max 2 app per year in same field; PR MFX 74-136 g /ha
curly kale	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Phytophthora porri*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
garlic	*Peronospora destructor*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
head cabbage	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Herbs and edible flowers	*Phytophthora/Downy mildew*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Kale	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
Kale	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Peronospora destructor*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
leek	*Phytophthora porri*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
lettuce	*Bremia lactucae*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
Mustard, red	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-

USES		Member state	Minor use	Requested registered uses		Comments/other relevant details on the GAPs
Crops	Targets			L product / ha a) max. rate per appl. b) max. total rate per crop/season	Max. appl. number a) per use b) per crop/ season	
onion	*Phytophthora porri*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
onion	*Peronospora destructor*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
parsley	*Downy Mildew - Plasmopara umbelliferarum*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle
pe-tsai	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
Savoy cabbage	*Hyaloperonospora parasitica*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
shallot	*Phytophthora porri*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
shallot	*Peronospora destructor*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
spinach	*Peronospora farinosa f. sp. spinaciae*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	PR MFX 97 g/ha
spring, welsh and green onion	*Peronospora destructor*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	-
spring, welsh and green onion	*Phytophthora porri*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	
watercress	*Bremia lactucae*	Slovakia	Yes	a) 0.5 b) 1	a) 2 b) 2	max 2 app per year in same field: 1 app in 2 crop cycles or 2 app in 1 crop cycle

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

Description of the target pests

Table 3.2-3: Glossary of pests mentioned in the dossier

EPPO code	Scientific name
BREMLA	*Bremia lactucae*
PEROPA	*Hyaloperonospora parasitica*
HPERBR	*Peronospora brassicae*
PERODE	*Peronospora destructor*
PEROFS	*Peronospora effusa*
PEROFS	*Peronospora farinosa spinaciae*
PEROSP	*Peronospora* sp.
PHYTPO	*Phytophthora porri*

***Bremia lactucae* in lettuce** (PP 2/3(2): Lettuce under protected cultivation)

Bremia lactucae causes the most serious disease of lettuce under protected cultivation. It persists as oospores in soil and is air-dispersed as sporangia. Lettuce plants can be infected at the seedling stage and all the way through the growing period. Lesions on leaves are first discoloured, and finally rot after sporulation of the pathogen.

Basic strategy:
The treatments applied to seedling compost or soil against fungi are not very effective against *B. lactucae* oospores. If possible, soils in which significant downy mildew was seen on a previous lettuce crop should be avoided. Lettuce cultivars with resistance to *B. lactucae* are available. This is often through the combination of several vertical resistance genes, but numerous corresponding pathotypes of *B. lactucae* exist. It is not advised to use a resistant cultivar, without chemical treatment, relying on the absence of the matching pathotype, as the pathotypes which occur on the crop may not correspond to the resistance of the plant. However, under such circumstances, the number of treatments could be reduced, if no downy mildew is seen.

***Peronospora destructor* in onion** (PP 2/004(2): Allium crops)

Peronospora destructor causes downy mildew of onions and shallots, but only rarely of leek and chives. Infected plants show curved leaves. On the long pale to yellow-coloured lesions, a greyish to purple mat of sporangiophores can be seen. During dry weather periods, the sporangia are not formed and only the pale greyish lesions can be observed. Leaves often die totally. Yield and quality of bulbs decline to a great extent. Cool wet weather (13-20°C; 80-95% RH) favours the development of the pathogen, which may survive as oospores in plant residues in the soil or as mycelium in sets. Under wet weather conditions, less than 1% of early infected plants are sufficient to infect the whole crop.

Basic strategy:
Because the pathogen can survive in the soil as oospores for several years, good crop rotation is very important to minimize the risk of a soil-borne infection. At least 3 years without onions are necessary. Crops should not be sown too densely, nor overfertilized. Growing areas with long-lasting periods of wetness should be avoided. Spring-sown onions should be separated from autumn-sown crops. Onion sets can be treated with hot water or hot air, as in Norway and Finland (at 40°C; 48 h of hot air or 1 h of hot water). Because *P. destructor* needs very special conditions for its development, forecasting is possible. Epidemiologically important days are those with at least 11 h with more than 95% RH (at night) followed by another 6 h with RH values over 80%. RH can be measured with a normal meteorological station 2 m above ground, but 5% should be added to the RH values to adapt them to the conditions at the soil surface. Alternatively, occurrence of potato-blight periods may give some indication of risk. Chemical control can mostly not be avoided because of the above-mentioned basic

infection level of 1% diseased plants. In growing areas where the disease occurs regularly, sprays should be applied preventively at 10-to 14-day intervals. After the outbreak of the disease, the fungicide may have to be applied weekly. In areas where there are outbreaks of downy mildew only from time to time, spraying should start as soon as the first symptoms are seen in the crop or there is any sign of the disease in the neighbourhood. In dry periods, sprays may be applied less frequently. Treatment of onion sets with fungicides is a possible method of controlling early infections.

***Phytophthora porri* in leek** (PP 2/004(2): Allium crops)

White tip of leeks is caused by *Phytophthora porri*, which mainly attacks the crop from the end of July until September-December in humid conditions and at the end of winter after frost when temperature starts to increase. Heavy rain, causing the soil to splash onto the foliage, can lead to serious infection. Onions are less often infected by the pathogen but seedling infection can occur. Leaves show white areas surrounded by a water-soaked zone. These areas become dry and papery. Lesions are most often restricted to leaf tips, but may also occur on the margins, centre or base of leaves.

Basic strategy:
The pathogen survives as oospores in the soil and crop rotation is therefore the main method of control. Affected debris should not be returned to the land. Because the pathogen needs wet periods for establishment on the plant, crops should be grown in less humid areas and be irrigated only when really necessary. In many regions, the infection level rarely reaches the economic threshold, but yield losses up to 50% have been reported in some countries. Metalaxyl-resistant strains have been detected.

***Peronospora parasitica* in brassica crops** (PP2/007(1) Vegetable brassicas)

Downy mildew is common on all types of vegetable brassicas but is probably most damaging on flowerhead types and kohlrabi grown under cover, and least damaging on root brassicas. It can be severe on seedbeds under protection, particularly when exposed to conditions of high humidity, leaf wetness and cool temperatures. Infection may appear first on the cotyledons as yellow speckled patches on the upper leaf surface with corresponding white fungal growth on the under surface. The fungal growth comprises sporangiophores bearing sporangia which spread the disease. Severely infected seedlings are stunted or killed. Similar leaf symptoms occur in the field although the lesions appear as less well-defined yellowish brown areas between the main veins with white to grey fungal growth underneath. Severely affected leaves may senesce prematurely and drop off allowing secondary soft-rot invasion. Infected Brussels sprout buttons show discrete black spots, which affect the quality of the product. The curds or heads of flowerhead brassicas are severely affected, rendering them unmarketable. The fungus forms oospores in affected tissue which can survive in soil or debris for many months or years and be a major source of inoculum.

Basic strategy:
Control of infection in the seedbed is essential, both to avoid early loss and to prevent introduction into the field. This will involve reduction of humidity and leaf wetness under protection and use of prophylactic fungicides to prevent infection establishing. In the field, cultural methods include crop rotation to avoid build-up of the soil-borne phase and reduction of the favourable conditions afforded by, for example, humid sheltered sites and closely spaced plants. There is some evidence of resistance in commercially available cultivars of cabbage, broccoli and kohlrabi. Control by fungicides in the field, as opposed to the seedbed, tends to be difficult. Products used for control of *Albugo candida* have activity against *P. parasitica*.

***Peronospora farinosa spinaciae* in spinach**

In recent years spinach growers in the European Union (EU) and the USA have been confronted with outbreaks of downy mildew on spinach cultivars that, in the past, were resistant to this disease. Investigations showed that the cultivars grown had not changed, so it was concluded that the pathogen

had overcome resistance in these cultivars through the emergence of new isolates or races. [1]

Downy mildew, caused by *Peronospora farinosa* f. sp. *spinaciae* (= *P. effusa*) is an economically important disease in most areas where spinach is grown[2]. Spinach downy mildew often begins as irregular yellow patches on upper leaf surfaces. Purplish-gray sporulation will be observed on the undersides of leaves. Occasionally, sporulation may be seen on upper leaf surfaces as well. Lesions may eventually dry out and turn brown. Sporangia are produced in the morning and dispersed by wind currents over the course of the day. Infection can be latent for quite some time until conditions are favorable for disease development. Signs and symptoms sometimes appear post-harvest.[3]

Basic strategy [4]:
Apply row covers when leaves are dry. Increase air circulation and reduce humidity in high tunnels. Use drip irrigation if possible. Rotate out of spinach for at least 3 years. *P. farinosa* can produce oospores, thick-walled structures which are capable of survival in soil; however, two mating types of the pathogen have to meet in order for oospores to be formed, and the frequency with which this occurs is unknown. Destroy all infected crops and crop residues. Allow a fallow period of at least two weeks between winter and spring high tunnel crops.
Fungicides cannot cure spinach downy mildew, but preventive applications can curb the spread of the pathogen.

Table 3.2-4: Major / minor status of intended uses (for all cMS and zRMS)
Central regulatory zone

Crop and/or situation	Crop status		Pests or group of pests controlled	Pest status	
	Major	minor		Major	minor
baby leaves	-	AT, BE, CZ, DE, NL, PL, SK	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL, SK
broccoli	-	AT, BE, CZ, DE, NL, PL, SK	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL, SK
Brussels sprouts	-	AT, BE, CZ, DE, NL, PL, SK	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL, SK
cauliflower	-	AT, BE, CZ, DE, NL, PL, SK	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL, SK
chards and beet leaves	-	AT, CZ, DE, PL, SK	*Peronospora farinosa f. sp. Spinaciae*	-	AT, CZ, DE, PL, SK
chicory	-	AT, BE, CZ, DE, NL, PL	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL
chives	-	AT, CZ, DE, PL, SK	*Phytophthora porri*	-	AT, CZ, DE, PL, SK
common purslane	-	AT, CZ, DE, PL, SK	*Peronospora farinosa f. sp. Spinaciae*	-	AT, CZ, DE, PL, SK
cress	-	AT, BE, CZ, DE, PL, SK	*Bremia lactucae*	-	AT, BE, CZ, DE, PL, SK
curly kale	-	AT, BE, CZ, DE, NL, PL, SK	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL, SK

[1] J. Correll et al., 2018, Guidelines for Spinach Downy Mildew: Peronospora farinosa f. sp. spinaciae (Pfs), available online in March 2022, https://www.researchgate.net/profile/Houda-Kawas/post/Who-came-first-Differencial-hosts-set-or-pathogen-races/attachment/59d6435679197b807799ece3/AS%3A442769035534338%401482575772216/download/229729.pdf
[2] J. C. Correll and C. Feng, 2014, First Report of Peronospora farinosa f. sp. spinaciae Causing Downy Mildew on Spinach in Egypt - PubMed (nih.gov), The American Phytopathological Society, available online in March 2022, https://doi.org/10.1094/PDIS-08-13-0870-PDN
[3] A. Madeiras, 2017, Vegetable: Spinach Downy Mildew | Center for Agriculture, Food, and the Environment at UMass Amherst, available online in March 2022, https://ag.umass.edu/vegetable/fact-sheets/spinach-downy-mildew

Crop and/or situation	Crop status		Pests or group of pests controlled	Pest status	
	Major	minor		Major	minor
endive	-	AT, BE, CZ, DE, NL, PL	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL
escarole	-	AT, BE, CZ, DE, NL, PL	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL
garlic	-	AT, BE, CZ, DE, NL, PL, SK	*Peronospora destructor*	-	AT, BE, CZ, DE, NL, PL, SK
garlic	-	AT, BE, CZ, DE, NL, PL, SK	*Phytophthora porri*	-	AT, BE, CZ, DE, NL, PL, SK
head cabbage	-	AT, BE, CZ, DE, NL, PL, SK	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL, SK
Herbs and edible flowers	-	AT, BE, CZ, DE, NL, PL, SK	*Phytophthora/Downy mildew*	-	AT, BE, CZ, DE, NL, PL, SK
iceberg lettuce	-	CZ	*Bremia lactucae*	-	CZ
Kale	-	AT, CZ, DE, PL, SK, AT, BE	*Hyaloperonospora parasitica*	-	AT, CZ, DE, PL, SK, AT, BE
lamb's lettuce	-	AT, BE, CZ, DE, NL, PL	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL
leafy brassica	-	AT, BE, CZ, DE, NL, PL	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL
leek	-	AT, BE, CZ, DE, NL, PL, SK	*Peronospora destructor*	-	AT, BE, CZ, DE, NL, PL, SK
leek	-	AT, BE, CZ, DE, NL, PL, SK	*Phytophthora porri*	-	AT, BE, CZ, DE, NL, PL, SK
lettuce	-	AT, BE, CZ, DE, NL, PL, SK	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL, SK
Mustard, red	-	AT, CZ, DE, PL, SK	*Hyaloperonospora parasitica*	-	AT, CZ, DE, PL, SK
onion	NL	AT, BE, CZ, DE, PL, SK	*Peronospora destructor*	NL	AT, BE, CZ, DE, PL, SK
onion	NL	AT, BE, CZ, DE, PL, SK	*Phytophthora porri*	NL	AT, BE, CZ, DE, PL, SK
parsley	-	AT, CZ, DE, PL, SK	*Downy Mildew – Plasmopara umbelliferarum*	-	AT, CZ, DE, PL, SK
pe-tsai	-	AT, BE, CZ, DE, NL, PL, SK	*Hyaloperonospora parasitica*	-	AT, BE, CZ, DE, NL, PL, SK
purple-vein rocket	-	AT, BE, CZ, DE, NL, PL	*Bremia lactucae*	-	AT, BE, CZ, DE, NL, PL
Savoy cabbage	-	AT, CZ, DE, PL, SK	*Hyaloperonospora parasitica*	-	AT, CZ, DE, PL, SK
shallot	-	AT, BE, CZ, DE, NL, PL, SK	*Peronospora destructor*	-	AT, BE, CZ, DE, NL, PL, SK
shallot	-	AT, BE, CZ, DE, NL, PL, SK	*Phytophthora porri*	-	AT, BE, CZ, DE, NL, PL, SK
spinach	-	AT, BE, CZ, DE, NL, PL, SK	*Peronospora farinosa f. sp. Spinaciae*	-	AT, BE, CZ, DE, NL, PL, SK

Crop and/or situation	Crop status		Pests or group of pests controlled	Pest status	
	Major	minor		Major	minor
spring, welsh and green onion	-	AT, BE, CZ, DE, NL, PL, SK	*Peronospora destructor*	-	AT, BE, CZ, DE, NL, PL, SK
spring, welsh and green onion	-	AT, BE, CZ, DE, NL, PL, SK	*Phytophthora porri*	-	AT, BE, CZ, DE, NL, PL, SK
watercress	-	AT, BE, CZ, DE, PL, SK	*Bremia lactucae*	-	AT, BE, CZ, DE, PL, SK

Compliance with the Uniform Principles

The overall assessment presented in this dossier was performed according to the Uniform Principles. All trials were conducted by GEP recognized testing units and according to EPPO guidelines.
No major deviation was recorded and when slight deviations occurred (example some deviations to EPPO guidelines), they were always considered as acceptable. All trials summarized in this dossier were considered as reliable and valid.

For more details on trial methodology, please refer to Table 3.2-19 and site details in Appendix 2 of the Biological Assessment Dossier.

Information on trials submitted (3.1 Efficacy data)

Table 3.2-5: Presentation of trials (efficacy trials, preliminary trials…)

Crop(s) *	Target(s)*	Country	Years	Type of trial**	Number of trials					GEP, non-GEP, official***	Comments (any other relevant information)
					Maritime zone	~~Mediterranean zone~~	North-East zone	~~Protected conditions~~	South-East zone		
Lettuce	*Bremia lactucae*	Belgium	2019	P+MED+E	1	-	-	-	-	GEP	
				P	-	-	-	2	-	GEP	
				MED+E	2	-	-	-	-	GEP	
			2020	P+MED+E	2	-	-	-	-	GEP	
				P	-	-	-	2	-	GEP	
		France	2019	P	-	-	-	1	-	GEP	
			2020	P+MED+E	2	-	-	-	-	GEP	
				P	-	-	-	1	-	GEP	
		Germany	2019	P+MED+E	1	-	-	-	-	GEP	
		~~Italy~~	~~2020~~	~~P~~	-	~~1~~	-	-	-	~~GEP~~	
		Poland	2019	P+MED+E	-	-	2	-	-	GEP	
			2020	P+MED+E	-	-	3	-	-	GEP	
				MED+E	-	-	1	-	-	GEP	
		~~Spain~~	~~2019~~	~~P~~	-	~~1~~	-	-	-	~~GEP~~	
			~~2020~~	~~P~~	-	~~1~~	-	-	-	~~GEP~~	
		TOTAL	**2019-2020**	-	**8**	~~3~~	**6**	~~6~~	-	-	
Onion	*Peronospora destructor*	Belgium	2019	P+MED+E	1	-	-	-	-	GEP	
		Czech Republic	2020	P+MED+E	1	-	-	-	-	GEP	
		France	2019	P+MED+E	1	-	-	-	-	GEP	
			2020	P+MED+E	1	-	-	-	-	GEP	
			2021	P	1	-	-	-	-	GEP	
		Germany	2021	P	1	-	-	-	-	GEP	
		~~Greece~~	~~2021~~	~~P~~	-	~~2~~	-	-	-	~~GEP~~	
		~~Italy~~	~~2020~~	~~P~~	-	~~1~~	-	-	-	~~GEP~~	
			~~2021~~	~~P~~	-	~~2~~	-	-	-	~~GEP~~	
		Poland	2019	P+MED+E	-	-	1	-	-	GEP	
			2020	MED+E	-	-	1	-	-	GEP	
				P+MED+E	-	-	2	-	-	GEP	
			2021	E	-	-	3	-	-	GEP	supportive data
		Romania	2021	P	-	-	-	-	1	GEP	
		Slovakia	2021	P	-	-	-	-	1	GEP	
		~~Spain~~	~~2019~~	~~P~~	-	~~2~~	-	-	-	~~GEP~~	

Crop(s) *	Target(s)*	Country	Years	Type of trial**	Number of trials					GEP, non-GEP, official***	Comments (any other relevant information)
					Maritime zone	~~Mediterranean zone~~	North-East zone	~~Protected conditions~~	South-East zone		
		~~Greece~~	~~2020~~	~~P~~	-	~~1~~	-	~~-~~	-	~~GEP~~	
		The Netherlands	2019	P+MED+E	1	~~-~~	-	~~-~~	-	GEP	
				MED+E	1	~~-~~	-	~~-~~	-	GEP	
			2020	P+MED+E	3	~~-~~	-	~~-~~	-	GEP	
		TOTAL	**2019-2021**	-	**11**	~~8~~	**7**	~~-~~	**2**	-	
Leek	***Phytophthora porri***	Belgium	2019	MED+E	2	~~-~~	-	~~-~~	-	GEP	
			2020	MED+E	2	~~-~~	-	~~-~~	-	GEP	
		France	2019	MED+E	2	~~-~~	-	~~-~~	-	GEP	
			2020	MED+E	2	~~-~~	-	~~-~~	-	GEP	
		The Netherlands	2020	MED+E	1	~~-~~	-	~~-~~	-	GEP	
		TOTAL	**2019-2020**	-	**9**	~~-~~	-	~~-~~	-	-	
Brassicae	***Peronospora* spp.**	Belgium	2020	P+MED+E	1	~~-~~	-	~~-~~	-	GEP	
		Germany	2019	P+MED+E	1	~~-~~	-	~~-~~	-	GEP	
			2020	P+MED+E	1	~~-~~	-	~~-~~	-	GEP	
			2021	P	1	~~-~~	-	~~-~~	-	GEP	
		~~Greece~~	~~2021~~	~~P~~	-	~~2~~	-	~~-~~	-	~~GEP~~	
		Poland	2019	P+MED+E	-	~~-~~	1	~~-~~	-	GEP	
				MED+E	-	~~-~~	2	~~-~~	-	GEP	
			2020	P+MED+E	-	~~-~~	1	~~-~~	-	GEP	
				MED+E	-	~~-~~	2	~~-~~	-	GEP	
			2021	P	-	~~-~~	1	~~-~~	-	GEP	
		~~Portugal~~	~~2021~~	~~P~~	-	~~1~~	-	~~-~~	-	~~GEP~~	
		Romania	2021	P	-	~~-~~	-	~~-~~	2	GEP	
		The Netherlands	2019	P+MED+E	1	~~-~~	-	~~-~~	-	GEP	
			2020	P+MED+E	1	~~-~~	-	~~-~~	-	GEP	
			2021	P	1	~~-~~	-	~~-~~	-	GEP	
		TOTAL	**2019-2021**	-	**7**	~~3~~	**7**	~~-~~	**2**	-	
Spinach	***Peronospora farinosa* f. sp. *spinaciae***	Belgium	2019	MED+E	1	~~-~~	-	~~-~~	-	GEP	
			2020	MED+E	1	~~-~~	-	~~-~~	-	GEP	
		France	2020	MED+E	1	~~-~~	-	~~-~~	-	GEP	
		The Netherlands	2020	MED+E	2	~~-~~	-	~~-~~	-	GEP	
		TOTAL	**2019-2020**	-	**5**	~~-~~	-	~~-~~	-	-	
		TOTAL			**40**	~~14~~	**20**	~~6~~	**4**		

* According to the GAP table. Timing of the application(s) can be added if relevant (e.g. Pre-mergence vs post-emergence, spring vs autumn).

** P = preliminary trial, MED = minimum effective dose, E = efficacy trial.
*** GEP: Good Experimental Practices. Official: carried out by a national official organisation.

Table 3.2-6: Presentation of reference standards used in efficacy trials

Crop(s)	EPPO ZONE	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active substance(s)	Formulation		Registered application rate (3)	Application rate in trials (per treatment)	Remark(4)
						Type (2)	Concentration of a.s.			
Lettuce	Maritime	Revus (A12946B)	Belgium	9604P/B	Mandipropamid	SC	250 g/L	0.6 L/ha	0.6 L/ha	
			Germany	026221-00	Mandipropamid	SC	250 g/L	0.6 L/ha	0.6 L/ha	
			France	2080098	Mandipropamid	SC	250 g/L	0.6 L/ha	0.6 L/ha	
	North-East	Revus (A12946B)	Poland	R-12/2009	Mandipropamid	SC	250 g/L	0.6 L/ha	0.6 L/ha	
Onion	Maritime	INFINITO 687.5 SC	Belgium	9650P/B	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
			France	2090136	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
			The Netherlands	12927	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
			Czech Republic	4602-2	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.2-1.6 L/ha	1.6 L/ha	Only registered on potatoes (not on onions)
	North-East	INFINITO 687.5 SC	Poland	R-37/2011	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
		Amistar 250 SC		R-40/2011	Azoxystrobin	SC	250 g/L	0,8-1 L/ha	0.75-1 L/ha	
Leek	Maritime	INFINITO 687.5 SC	Belgium	9650P/B	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
			France	2090136	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	-	1.6 L/ha	Not registered on leek
			The Netherlands	12927	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	

Crop(s)	EPPO ZONE	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active substance(s)	Formulation		Registered application rate (3)	Application rate in trials (per treatment)	Remark(4)
						Type (2)	Concentration of a.s.			
Brassica	Maritime	INFINITO 687.5 SC	Germany	025876-00	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L		1.6 L/ha	Not registered on brassica
			The Netherlands	12927	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
	North-East	INFINITO 687.5 SC	Poland	R-37/2011	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
Spinach	Maritime	INFINITO 687.5 SC	Belgium	9650P/B	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
			France	2090136	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	
			The Netherlands	12927	Propamocarb Fluopicolide	SC	625 g/L 62.5 g/L	1.6 L/ha	1.6 L/ha	

(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.).

3.2.1 Preliminary tests (KCP 6.1)

Component and ratio justifications of A23109A are primarily based on resistance management strategy and currently minimum recommended rates of both active ingredients for the main targeted pathogens by A23109A.
The loss of multisite active substances on the fungicide market leads to the need of new resistance management tools. The development of A23109A offers a good solution combining fully effective rates of oxathiapiprolin (OXTP) and metalaxyl-M (MFX), securing, with their different modes of action, an effective control without increasing the risk of resistance occurrence development[4].

Resistance management for metalaxyl-M and oxathiapiprolin depends on three different parameters: intrinsic fungicide risk, pathogen risk and agronomic risk. Additionally, to the risk to the individual fungicides also the combined risk towards the mixture needs to be evaluated.
These considerations were taken into account when designing the product mixture. Based on current knowledge, the intrinsic fungicide risk for oxathiapiprolin is moderate to high and the intrinsic resistance risk of phenylamide fungicides is considered as high (FRAC). The use of two fungicides in a mixture is considered as valuable anti-resistance strategy compared to the use of solo compounds. Each component of the mixture must provide good efficacy in its own right and also be resilient to the development of resistance. For all these reasons the ratio of the product A23109A was based on currently registered rates of solo products respectively with OXTP and with MFX.
For OXTP, we have considered 15 g OXTP/ha as the minimum effective dose against *Peronospora destructor* in onion and *Bremia lactucae* in lettuce, based on current registration rates in Europe of Zorvec Endavia (benthiavalicarbe mixture) on onion, and Zorvec Enicade, solo OXTP formulation on lettuce.
Regarding MFX, its minimum effective dose against Downy mildew in vegetables as *Peronospora destructor* in onion, *Bremia lactucae* in lettuce and *Hyaloperonospora parasitica* in brassica crops, is considered to be around 90 g MFX/ha (global MFX definition), based on minimum registered or old MFX rates in mixture formulations against these pathogens.
This efficacy rate is confirmed by recent studies done in 2021 against *Peronospora destructor* in onion and *Hyaloperonospora parasitica* in brassica where it is clearly seen that the rate of 0.2 L PR/ha, equivalent to 93 g MFX/ha is needed to reach a similar efficacy level as the Standard Infinito, compared to 0.135 L PR/ha (= 63 g MFX/ha) which is clearly less efficient. These results are illustrated in

[4]FRAC, January 2010, FRAC recommendations for fungicide mixtures designed to delay resistance evolution., available online in March 2022: https://www.frac.info/docs/default-source/publications/frac-recommendations-for-fungicide-mixtures/frac-recommendations-for-fungicide-mixtures---january-2010.pdf
FRAC; March 2020, FRAC Recommendations on Resistance Management for Phenylamides, available online in March 2022, https://www.frac.info/frac-teams/expert-fora/phenylamides/recommendations-for-phenylamides
FRAC, April 2021, FRAC Recommendations for OSBPI fungicides, available online in March 2022, https://www.frac.info/frac-teams/working-groups/osbpi-fungicides/recommendations-for-osbpi

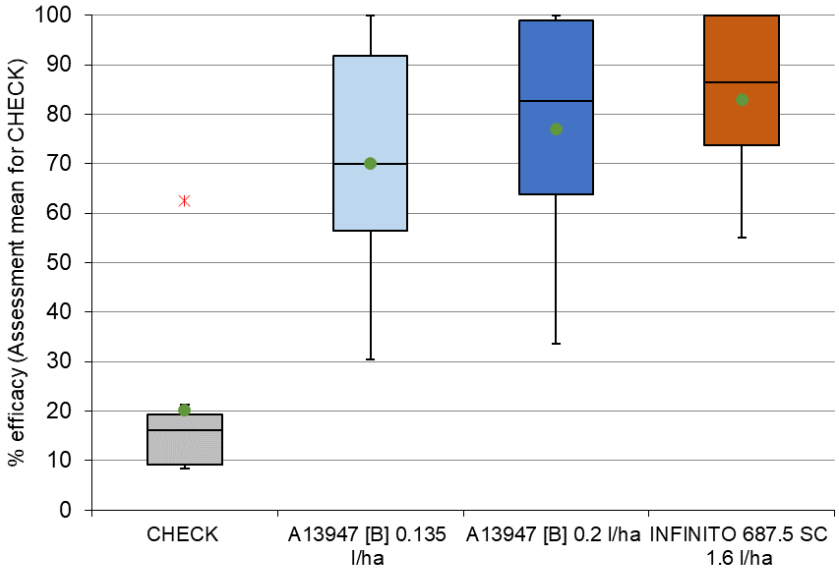


Figure 3.2-1: and
Figure 3.2-2: below.

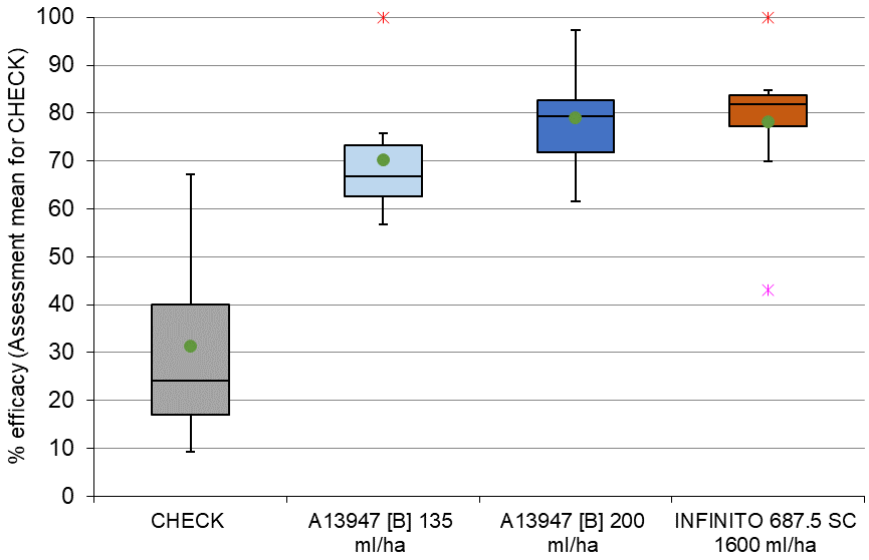


Figure 3.2-1: **MFX (A13947B) efficacy against *Peronospora destructor* in onion – mean 8 EU trials done in 2021 – pest severity leaves**

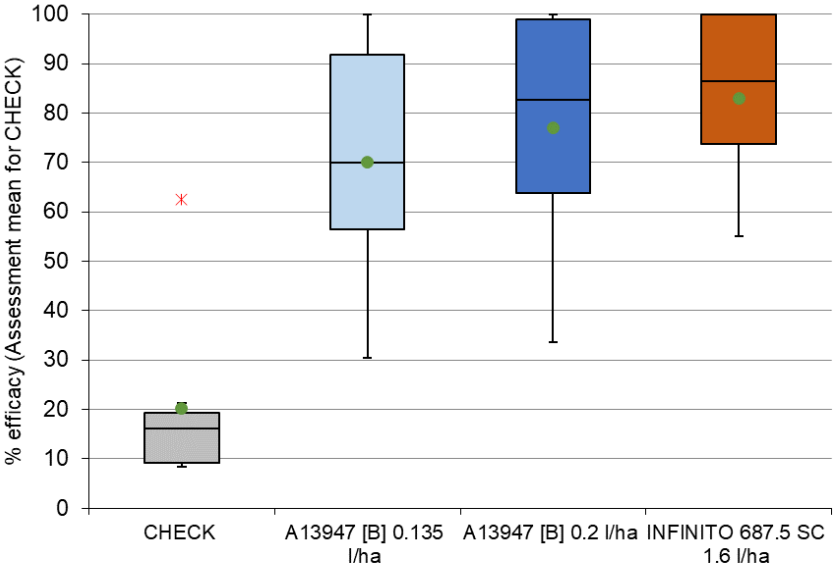


Figure 3.2-2: **MFX (A13947B) efficacy against *Hyaloperonospora parasitica* in brassica crops – mean 8 EU trials done in 2021 – pest severity leaves**

A23109A contents 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition) which meets the considered minimum effective dose of both active substances on the main pathogens, difficult to control, claimed on the label.

In this section, component justification trials are presented to show the efficacy benefit of the combination of OXTP and MFX, as done in the product A23109A. Efficacy trials testing the product A23109A and straight products A20941B (oxathiapiprolin – 100 g/L, OD) and A13947 (metalaxyl-M – 480 g/L, SL global MFX definition or 465.2 g/L based on EU MFX definition) at similar rates of the

single active substances were selected to check the robustness of the product A23109A.

For material and method of the trials refer to Site and application details located in Appendix 2 of the Biological Assessment Dossier. Please note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although indicated 90 g ai/ha in the trial reports, based on global definition (R+S enantiomer)- same for A13947A which will bring 88.4 g MFX/ha based on EU definition.

3.2.1.1 Component justification on lettuce

A total of 20 11 trials on lettuce (6x under protected conditions, 6x in Maritime, 3x in Mediterranean and 5x in North-East EPPO zone) are summarized for component justification of A23109A. All the set of trials were carried out over seasons 2019 and 2020.

A23109A contents 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

All these efficacy trials testing the product A23109A and straight products A20941B (oxathiapiprolin – 100 g/L, OD) and A13947 (metalaxyl-M – 480 g/L, SL global MFX definition or 465.2 g/L based on EU MFX definition) at similar rates of the single active substances were selected to check the robustness of the product A23109A.

Table 3.2-7 shows a summary of relevant disease severity assessments on lettuce for the control of *Bremia lactucae*. Only trials where challenging disease severity was observed (above 5% for lettuce) were averaged.

According to the presented results of disease severity control on lettuce across all zones, the efficacy of the solo ais at the mixture rate is confirmed for both OXTP and MFX at their mixture rate. In addition mixture efficacy benefit is also observed, A23109A provided better control than both OXTP and MFX straight products against *Bremia lactucae* on lettuce.

In summary, the combination of OXTP and MFX in the product A23109A will provide effective and robust control in terms of severity against downy mildews on lettuce.

Table 3.2-7: Component justification of A23109A against *Bremia lactucae* on lettuce

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all trials assessments (last assessment per trial)											
Bremia lactucae (BREMLA)	PESSEV 0-100 index	Protected conditions	n=6; N=6	63.5	18.9 - 87.9	97	87.0-100	94.2	74.1-100	54.8	38.0 - 79.8
		MAR (after 1 appl.)	n=6 N=6	62.3	25.8 - 98.6	76.1	48.6-100	79.9	55.9-100	63.9	18.1 - 94.0
		MED	n=3; N=3	48.9	9.6-100	89.1	73.1-98.6	89.7	81.3-94.2	21.7	0.1-47.8
		NE	n=5; N=5	70.4	31.9-100	90.6	77.7-100	79.1	62.8-97	55.1	30.9-97
		NE (after 1 appl.)	n=1	57.2	-	77.7	-	80.1	-	40.4	-

Target	Assessment type	EPPO zone	Number of trials~~ / Number of assessments~~	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
		NE (after 2 appl.)	n=3	68.9	31.9 -100	91.8	90.0-94.2	72.6	62.8-90.8	46.2	30.9 - 72.2
		NE (after 3 appl.)	n=1	88.3	-	99.7	-	97.3	-	96.5	-
		All zones (after 1 appl.)	n=20~~7 N=20~~	~~61.3~~ 61.6	~~48.9 - 70.4~~ 25.8 - 98.6	~~88.2~~ 76.4	~~76.1-97~~ 48.6-100	~~85.7~~ 79.9	~~79.1-94.2~~ 55.9-100	~~48.9~~ 60.5	~~21.7 - 63.9~~ 18.1 - 94.0

*A23109A will bring 87.2 g MFX/ha based on EU MFX definition
**A13947A will bring 88.4 g MFX/ha based on EU MFX definition

Comments of zRMS:

11 preliminary field trials have been submitted for the component justification. The mix of oxathiapiprolin and metalaxyl-M (A23109A) achieved similar efficacy compared to oxathiapiprolin after 1 application in 7 out of 11 trials. Significant differences between A23109 and oxathiapiprolin are visible after 2 applications following appearance of disease. The test product controlled the disease pathogens superior than single active substances with result of >90%. In opinion of zRMS, mix of oxathiapiprolin and metalaxyl-M is justified to control of *Bremia lactucae* on lettuce.

3.2.1.2 Component justification on onion

A total of ~~15~~ 11 trials on onion (8x in Maritime~~; 4x in Mediterranean~~, 3x in North-East EPPO zone) are summarized for component justification of A23109A. All the set of trials were carried out over seasons 2019 and 2020.

A23109A contents 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

All these efficacy trials testing the product A23109A and straight products A20941B (oxathiapiprolin – 100 g/L, OD) and A13947 (metalaxyl-M – 480 g/L, SL global MFX definition or 465.2 g/L based on EU MFX definition) at similar rates of the single active substances were selected to check the robustness of the product A23109A.

Table 3.2-8 show a summary of relevant disease severity assessments on onion for the control of *Peronospora destructor*. Only trials where challenging disease severity was observed (above 10% for onion) were averaged.

According to the presented results of disease severity control on onion across all zones, the efficacy of the solo ais at the mixture rate is confirmed for both OXTP and MFX at their mixture rate. In addition mixture efficacy benefit is also observed, A23109A provided better control than both OXTP and MFX straight products against *Peronospora destructor* on onion.

In summary, the combination of OXTP and MFX in the product A23109A will provide effective and

robust control in terms of severity against downy mildews on onion.

Table 3.2-8: Component justification of A23109A against *Peronospora destructor* on onion

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all trials assessments (last assessment per trial) after 1 application from disease appearance											
Peronospora destructor (PERODE)	PESSEV % disease on leaves per plot	MAR	n=5 2; N=5	72.3 71.3	38.8 -100 52.6 - 90.0	92.5 95.1	75.1-100 90.2-99.9	73.3 82.9	48.7-96.3 69.4-96.3	75.3 76.5	58.8 - 88.1 66.9 - 86.1
		MED	n=3; N=3	35.4	23.6 - 47.5	61.4	54.3-73.7	48.3	11.1-75.8	16.5	0 - 26.5
		All zones	n=8; N=8	53.8	35.4 - 72.3	77.0	61.4-92.5	60.8	48.3-73.3	45.9	16.5 - 75.3
	PESSEV % disease area per leaf	MAR	n=4; N=4	61.2	32.1 - 80.0	78.7	66.8-98.9	46.7	31.7-57.9	36.1	6.7 - 76.6
		MED	n=4; N=4	32.1	22.6 - 36.0	79.1	65.5-88.8	64.0	48.8-85.2	33.4	13.4 - 76.9
		NE	n=3 1; N=3	31.4 42.6	15.2 - 42.6	73 95.9	53.4-95.9	70.5 97.2	50.8-97.2	55.1 30.8	30.8 - 73.0
		All zones	n=11; N=11	41.6	31.4 - 61.2	76.9	73-79.1	60.4	46.7-70.5	41.5	33.4 - 55.1
Mean of all assessments trials after 2 applications from disease appearance											
Peronospora destructor (PERODE)	PESSEV % disease on leaves per plot	MAR	n=2; N=2	39.6	31.2 - 47.9	99.8	99.5-100	79.7	66.9-92.5	73.6	57.6 - 89.5
		MED	n=1; N=1	23.6	-	73.7	-	75.8	-	23.0	-
		All zones	n=3; N=3	31.6	23.6 - 39.6	86.8	73.7-99.8	77.8	75.8-79.7	48.3	23 - 73.6
	PESSEV % disease area per leaf	MAR	n=3; N=3	43	24.1 - 72.5	86.1	66.8-100	62.1	31.7-92.7	42.2	11.4 - 92.5
		MED	n=1; N=1	36	-	84.9	-	85.2	-	76.9	-
		NE	n=2; N=2	12.7	10.2 - 15.2	65.5	53.4-77.6	69.2	50.8-87.5	68.1	61.5 - 74.7
		All zones	n=3 5; N=3	30.6 30.9	12.7 -43 10.2 - 72.5	78.8 77.9	65.5-86.1 53.4-100	72.2 64.9	62.1-85.2 31.7-92.7	62.4 52.6	42.2 - 76.9 11.4 - 92.5

*A23109A will bring 87.2 g MFX/ha based on EU MFX definition
**A13947A will bring 88.4 g MFX/ha based on EU MFX definition

Comments of zRMS:

11 preliminary field trials have been submitted for the component justification. The mix of oxathiapiprolin and metalaxyl-M (A23109A) achieved superior efficacy compared to oxathiapiprolin and metalaxyl-M solo after 1 application in 2 out of 8 trials. Significant differences between A23109 and actives solo are visible after 2 applications following appearance of disease in the Maritime EPPO climatic zone. The test product controlled the disease pathogens with result of >86% while the single active substances were effective on level of 62,1% and 42,2% respectively. Similar effectiveness has been noted in the North-East zone. In opinion of zRMS, mix of oxathiapiprolin and metalaxyl-M is justified to control of *Peronospora destructor* on onion.

3.2.1.3 Component justification on Brassica crops

A total of 7 trials in brassica crops (5x in Maritime and 2x in North-East zone) are summarized for component justification of A23109A. All the set of trials were carried out over seasons 2019 and 2020.

A23109A contents 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

All these efficacy trials testing the product A23109A and straight products A20941B (oxathiapiprolin – 100 g/L, OD) and A13947 (metalaxyl-M – 480 g/L, SL global MFX definition or 465.2 g/L based on EU MFX definition) at similar rates of the single active substances were selected to check the robustness of the product A23109A.

Table 3.2-9 show a summary of relevant disease severity assessments on brassica crops for the control of *Peronospora* spp. Only trials where challenging disease severity was observed (above 5% for brassica crops) were averaged.

According to the presented results of disease severity control on brassica crops across all zones, the efficacy of the solo ais at the mixture rate is confirmed for both OXTP and MFX at their mixture rate. In addition mixture efficacy benefit is also observed, A23109A provided better control than both OXTP and MFX straight products against *Peronospora* spp. on brassica crops.

In summary, the combination of OXTP and MFX in the product A23109A will provide effective and robust control in terms of severity against downy mildews on brassica crops.

Table 3.2-9: Component justification of A23109A against *Peronospora* spp. on brassica crops

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all assessments (last assessment per trial)											
Peronospora spp. (1PEROG)	% PESSEV on leaf	MAR	n=5; N=5	23.2	5.9 - 75.6	80.6	51.1 91.3	79.4	60.0 89.3	49.0	10.7 - 85.1
		NE	n=2; N=2	23.6	20.0 - 27.1	99.0	99.0	98.5	97.8 99.1	95.5	92.0 - 98.9
		All zones	n=7; N=7	23.4	23.2 - 23.6	89.8	80.6 99	89.0	79.4 98.5	72.3	49 - 95.5
Mean of all assessments trials after 2 applications from disease appearance											

Target	Assessment type	EPPO zone	Number of trials~~; Number of assessments~~	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora spp. (1PEROG)	% PESSEV on leaf	MAR	n=1~~; N=1~~	13.7	-	90.0	-	81.1	-	85.1	-
		NE	n=1~~; N=1~~	17.6	-	100	-	100	-	100	-
		All zones	n=2~~; N=2~~	15.7	13.7 - 17.6	95.0	90-100	90.6	81.1-100	92.6	85.1 -100

*A23109A will bring 87.2 g MFX/ha based on EU MFX definition
**A13947A will bring 88.4 g MFX/ha based on EU MFX definition

Comments of zRMS:

7 preliminary field trials have been submitted for the component justification. However, only two trial results show differences between A23109A and the single active substances after 2 applications from disease appearance. The test product achieved superior effectiveness compared to oxathiapiprolin and metalaxyl-M solo with the result of 90% in the Maritime EPPO climatic zone. Similar effect between the objects has been observed in the North-East zone. Limited number of trials has been presented in case of PESSEV assessment. The cMSs are kindly asked to consider this component justification on national level.

3.2.1.4 Summary and conclusions on the preliminary trials

Component justification of the product A23109A is primarily based on resistance management strategy. The loss of multisite active substances on the fungicide market leads to the need of new resistance management tools. The development of A23109A offers a good solution combining effective rates of oxathiapiprolin (OXTP) and metalaxyl-M (MFX), securing, with their different modes of action, an effective control without increasing the risk of resistance occurrence development.

Indeed, the product A23109A is composed of two effective active ingredients against downy mildews, OXTP and MFX. The mixture of these two effective active ingredients brought some efficacy gains. For foliar applications, the phenylamides as well as OSBPI should be used in a mixture containing an unrelated effective partner and used in a sound management program. The mixture of these two active substances from different modes of action should thus allow to give effective control of the target diseases while avoiding new development of resistance cases.

In addition to this resistance-based argumentation, component justification trials are presented to show the efficacy benefit of the combination of OXTP and MFX, as done in the product A23109A and the solo a.i. efficacy at the a.i. rates in the mixture to confirm their efficacy at the mixture rate on main representative pathogens targeted by A23109A.

A total of ~~20~~ 11 trials on lettuce (~~6x under protected conditions,~~ 6x in Maritime~~, 3x in Mediterranean~~ and 5x in North-East EPPO zone), ~~15~~ 11 trials on onion (8x in Maritime~~; 4x in Mediterranean~~, 3x in North-East EPPO zone), 7 trials in brassica crops (5x in Maritime and 2x in North-East zone) are summarized for component justification of A23109A. All the set of trials were carried out over seasons 2019 and 2020.

A23109A contents 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

Efficacy trials testing the product A23109A and straight products A20941B (oxathiapiprolin – 100 g/L, OD) and A13947 (metalaxyl-M – 480 g/L, SL global MFX definition or 465.2 g/L based on EU MFX definition) at similar rates of the single active substances were selected to check the robustness of the product A23109A.

Please note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although indicated 90 g ai/ha in the trial reports and tables below, based on global definition (R+S enantiomer)- same for A13947A which will bring 88.4 g MFX/ha based on EU definition.

Table 3.2-10 to Table 3.2-14 show a summary of relevant disease severity assessments on lettuce, onion and brassica crops for the control of respectively *Bremia lactucae*, *Peronospora destructor* and *Peronospora* spp. Only trials where challenging disease severity was observed (above 5% for Brassica crops and lettuce and above 10% for onion) were averaged.

According to the presented results of disease severity control, the efficacy of the solo a.i. at the rates in the mixture is confirmed for both OXTP and MFX at their mixture rate. In addition, mixture efficacy benefit is also observed. A23109A provided better control than both OXTP and MFX straight products mainly against *Peronospora destructor* on onion and *Peronospora* spp. on brassica crops and in some extend against *Bremia lactucae* on lettuce.

In summary, the combination of OXTP and MFX in the product A23109A will provide effective and robust control in terms of severity against downy mildews on lettuce, onion and brassica crops.

Table 3.2-10: MFX (A13947B) efficacy against *Peronospora destructor* in onion

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						A13947 [B] 0.135 l/ha 91.2 63 g metalaxyl-M/ha		A13947 [B] 0.200 l/ha 91.2 93 g metalaxyl-M/ha		INFINITO 687.5 SC 1.6 l/ha 100 g propamocarb hydrochloride/ha + 100 g fluopicolide/ha	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all trials assessments											
Peronospora destructor (PERODE)	PESSEV % area per 1 leaf	All zones	n=8 4 N=8	31.4 30.9	9.2-67.0 9.7-65.8	9.4 76.7	0.0-100.0 58.6-100	80.3 82.7	61.6-97.4	8.7 87.8	0.0-38.3 83.1-100

Table 3.2-11: MFX (A13947B) efficacy against *Hyaloperonospora parasitica* in brassica crops

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						A13947 [B] 0.135 l/ha 91.2 63 g metalaxyl-M/ha		A13947 [B] 0.200 l/ha 91.2 93 g metalaxyl-M/ha		INFINITO 687.5 SC 1.6 l/ha 100 g propamocarb hydrochloride/ha + 100 g fluopicolide/ha	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all trials assessments											
Peronospora destructor (PERODE)	PESSEV % area per 1 or 20 plants	All zones	n=8 5 N=8	20.2 23.8	8.5-62.5	6.9 55.2	0.0-24.5 30.5-76.5	75.8 63.5	33.6-100 33.7-85.0	3.3 72.8	0.0-7.3 55.0-88.0

Table 3.2-12: Component justification of A23109A against *Bremia lactucae* on lettuce

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all trials assessments (last assessment per trial)											
Bremia lactucae (BREMLA)	PESSEV 0-100 index	Protected conditions	n=6; N=6	63.5	18.9-87.9	97	87.0-100	94.2	74.1-100	54.8	38.0-79.8
		MAR (after 1 appl.)	n=6 N=6	62.3	25.8-98.6	76.1	48.6-100	79.9	55.9-100	63.9	18.1-94.0

		MED	n=3; N=3	48.9	9.6-100	89.1	73.1-98.6	89.7	81.3-94.2	21.7	0.1-47.8
		NE	n=5; N=5	70.4	31.9-100	90.6	77.7-100	79.1	62.8-97	55.1	30.9-97
		NE (after 1 appl.)	n=1	57.2	-	77.7	-	80.1	-	40.4	-
		NE (after 2 appl.)	n=3	68.9	31.9-100	91.8	90.0-94.2	72.6	62.8-90.8	46.2	30.9-72.2
		NE (after 3 app.)	n=1	88.3	-	99.7	-	97.3	-	96.5	-
		All zones (after 1 appl.)	n=20 7; N=20	61.3 61.6	48.9-70.4 25.8-98.6	88.2 76.4	76.1-97 48.6-100	85.7 79.9	79.1-94.2 55.9-100	48.9 60.5	21.7-63.9 18.1-94.0

*A23109A will bring 87.2 g MFX/ha based on EU MFX definition; **A13947A will bring 88.4 g MFX/ha based on EU MFX definition

Table 3.2-13: Component justification of A23109A against *Peronospora destructor* on onion

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all assessments (last assessment per trial) trials after 1 application from disease appearance											
Peronospora destructor (PERODE)	PESSEV % disease on leaves per plot	MAR	n=5 2; N=5	72.3 71.3	38.8-100 52.6-90.0	92.5 95.1	75.1-100 90.2-99.9	73.3 82.9	48.7-96.3 69.4-96.3	75.3 76.5	58.8-88.1 66.9-86.1
		MED	n=3; N=3	35.4	23.6-47.5	61.4	54.3-73.7	48.3	11.1-75.8	16.5	0-26.5
		All zones	n=8; N=8	53.8	35.4-72.3	77.0	61.4-92.5	60.8	48.3-73.3	45.9	16.5-75.3
	PESSEV % disease area per leaf	MAR	n=4; N=4	61.2	32.1-80.0	78.7	66.8-98.9	46.7	31.7-57.9	36.1	6.7-76.6
		MED	n=4; N=4	32.1	22.6-36.0	79.1	65.5-88.8	64.0	48.8-85.2	33.4	13.4-76.9
		NE	n=3 1; N=3	31.4 42.6	15.2-42.6	73 95.9	53.4-95.9	70.5 97.2	50.8-97.2	55.1 30.8	30.8-73.0
		All zones	n=11; N=11	41.6	31.4-61.2	76.9	73-79.1	60.4	46.7-70.5	41.5	33.4-55.1
Mean of all trials assessments after 2 applications from disease appearance											
Peronospora destructor (PERODE)	PESSEV % disease on leaves per plot	MAR	n=2; N=2	39.6	31.2-47.9	99.8	99.5-100	79.7	66.9-92.5	73.6	57.6-89.5
		MED	n=1; N=1	23.6	-	73.7	-	75.8	-	23.0	-
		All zones	n=3; N=3	31.6	23.6-39.6	86.8	73.7-99.8	77.8	75.8-79.7	48.3	23-73.6
	PESSEV % disease area per leaf	MAR	n=3; N=3	43	24.1-72.5	86.1	66.8-100	62.1	31.7-92.7	42.2	11.4-92.5
		MED	n=1; N=1	36	-	84.9	-	85.2	-	76.9	-

		NE	n=2; N=2	12.7	10.2-15.2	65.5	53.4-77.6	69.2	50.8-87.5	68.1	61.5-74.7
		All zones	n=3 5; N=3	30.6 30.9	12.7-43 10.2-72.5	78.8 77.9	65.5-86.1 53.4-100	72.2 64.9	62.1-85.2 31.7-92.7	62.4 52.6	42.2-76.9 11.4-92.5

*A23109A will bring 87.2 g MFX/ha based on EU MFX definition
**A13947A will bring 88.4 g MFX/ha based on EU MFX definition

Table 3.2-14: Component justification of A23109A against *Peronospora* spp. on brassica crops

Target	Assessment type	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest severity)		% control					
						Test product A23109A 15 g oxathiapiprolin/ha + 90 g metalaxyl-M/ha*		A20941B 15 g oxathiapiprolin/ha		A13947A 91.2 g metalaxyl-M/ha**	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Mean of all assessments (last assessment per trial)											
Peronospora spp. (1PEROG)	% PESSEV on leaf	MAR	n=5; N=5	23.2	5.9-75.6	80.6	51.1-91.3	79.4	60.0-89.3	49.0	10.7-85.1
		NE	n=2; N=2	23.6	20.0-27.1	99.0	99.0	98.5	97.8-99.1	95.5	92.0-98.9
		All zones	n=7; N=7	23.4	23.2-23.6	89.8	80.6-99	89.0	79.4-98.5	72.3	49-95.5
Mean of all assessments trials after 2 applications from disease appearance											
Peronospora spp. (1PEROG)	% PESSEV on leaf	MAR	n=1; N=1	13.7	-	90.0	-	81.1	-	85.1	-
		NE	n=1; N=1	17.6	-	100	-	100	-	100	-
		All zones	n=2; N=2	15.7	13.7-17.6	95.0	90-100	90.6	81.1-100	92.6	85.1-100

*A23109A will bring 87.2 g MFX/ha based on EU MFX definition
**A13947A will bring 88.4 g MFX/ha based on EU MFX definition

3.2.2 Minimum effective dose tests (KCP 6.2)

A23109A contains 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).
It is to note that the rates of MFX in A23109A indicated in the trial reports and the tables of results is calculated on global definition (R+S enantiomer) although the rate of MFX in A23109A is well based on EU MFX definition.

A total of 14 field trials were established in order to determine the minimum effective dose for the control of the *Bremia lactucae* on lettuce. A23109A was tested at 0.25 to 0.5 L PR/ha on lettuce for the control of *Bremia lactucae*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*. This dose is selected on the basis of its efficacy performance, product safety parameters and environmental limitations. Efficacy was tested under a range of environmental conditions to fully challenge the product. Data are presented across Europe to fully reflect the range of climatic and agronomic conditions. Trials were conducted in Maritime EPPO zone (Belgium, Germany and France) and North-East EPPO zone (Poland) between 2019 and 2020.

A total of 13 field trials were established in order to determine the minimum effective dose for the control of *Peronospora destructor* on onion. A23109A was tested at 0.25 to 0.5 L PR/ha on onion for the control of *Peronospora destructor*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*. This dose is selected on the basis of its efficacy performance, product safety parameters and environmental limitations. Efficacy was tested under a range of environmental conditions to fully challenge the product. Data are presented across Europe to fully reflect the range of climatic and agronomic conditions. Trials were conducted in Maritime EPPO zone (Belgium, Czech Republic, France and The Netherlands) and in the North-East EPPO zone (Poland) between 2019 and 2020.

A total of 9 field trials were established in order to determine the minimum effective dose for the control of the *Phytophthora porri* on leek. A23109A was tested at 0.25 to 0.5 L PR/ha on leek for the control of *Phytophthora porri*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*. This dose is selected on the basis of its efficacy performance, product safety parameters and environmental limitations. Efficacy was tested under a range of environmental conditions to fully challenge the product. Trials were conducted in Maritime EPPO zone (Belgium, France and The Netherlands) between 2019 and 2020.

A total of 11 field trials were established in order to determine the minimum effective dose for the control of *Peronospora* spp. on brassica crops. A23109A was tested at 0.25 to 0.5 L PR/ha on brassica crops for the control of *Peronospora* spp. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 '*Minimum effective dose'*. This dose is selected on the basis of its efficacy performance, product safety parameters and environmental limitations. Efficacy was tested under a range of environmental conditions to fully challenge the product. Data are presented across Europe to fully reflect the range of climatic and agronomic conditions. Trials were conducted in Maritime EPPO zone (Belgium, Germany and The Netherlands) and in the North-East EPPO zone (Poland) between 2019 and 2020.

For material and method of the trials refer to Annex Point IIIA 3.2.3 (KCP 6.2).
The methodology for means calculation and data presentation in this chapter 3.2.2 is similar to the one in chapter 3.2.3 except for the following points:

In the detailed tables of results of this chapter, a selection of one representative assessment per trial was made for means calculation and data presentation. In general, the last assessment of the trial with the

highest level of infestation was kept. In some cases, more than one assessment per trial were selected depending on epidemic size and duration.

The infestation thresholds in the untreated check considered as sufficient to reliably assess the efficacy of the product were set up at

- 5% of pest incidence or pest severity for leek, spinach, lettuce (10% in Point 3.2.3) and brassica crops (10% in Point 3.2.3)
- 10% of pest incidence or pest severity for onion.

When possible, a special means calculation was made after 2 applications following disease appearance in order to reflect the GAP, as the number of applications of A23109A is limited to 2 per season.

3.2.2.1 Minimum effective dose against *Bremia lactucae* on lettuce

A total of 14 field trials were established in order to determine the minimum effective dose for the control of the *Bremia lactucae* on lettuce. These trials have been conducted between 2019 and 2020 in Belgium (5x), Germany (1x), France (2x) and Poland (6x). A23109A was tested at 0.25, 0.4 and 0.5 L PR/ha dose rates in lettuce for the control of *Bremia lactucae.* The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 'Minimum effective dose'. A summary of the dose response results is provided in Table 3.2-15.

In these 14 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

It is to note that the rates of MFX in A23109A indicated in the trial reports and the tables of results is calculated on global definition (R+S enantiomer) although the rate of MFX in A23109A is well based on EU MFX definition. A23109A brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

The means presented in the **Table 3.2-15** were calculated from the assessment timings where the disease pressure was at least of 5% in the untreated check and where the standard performed as expected.

Table 3.2-15: Minimum effective dose. Efficacy of A23109A at proposed label rate, at 80% and 50% dose rates on lettuce against *Bremia lactucae*

Target	Assessment type	Grouping	EPPO zone	Number of trials; ~~Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control					
							A23109 [A] (EXF16956C) at 0.25 L PR/ha (50% of full rate)		A23109 [A] (EXF16956C) at 0.4 L PR/ha (80% of full rate)		A23109 [A] (EXF16956C) at 0.5 L PR/ha (Full rate)	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Bremia lactucae (BREMLA)	% PESSEV on plant	~~All assessments~~	~~MAR~~	~~n=5; N=5~~	~~24.0~~	~~9.2-42.5~~	~~91.6~~	~~73.8-100.0~~	~~93.6~~	~~77.9-99.9~~	~~95.1~~	~~80.3-100.0~~
			~~NE~~	~~n=6; N=6~~	~~29.7~~	~~7.2-80.1~~	~~93.7~~	~~78.2-100.0~~	~~94.8~~	~~72.5-100.0~~	~~97.2~~	~~84.2-100.0~~
		After 1 appl.	MAR	n=5	24.0	9.2-42.5	91.6	73.8-100.0	93.6	77.9-99.9	95.1	80.3-100.0
			NE	n=4	10.2	7.2-15.9	91.4	78.2-100.0	92.4	72.5-100.0	96.0	84.2-100.0
		After 2 appl.	NE	n=2; ~~N=2~~	48.1	38.9-57.3	98.9	97.8-100.0	99.7	99.3-100.0	99.8	99.5-100.0
	0-100 index PESSEV on plant	~~All assessments~~	~~MAR~~	~~n=6; N=6~~	~~62.3~~	~~25.8-98.6~~	~~69.0~~	~~14.3-100.0~~	~~70.9~~	~~37.7-99.6~~	~~76.1~~	~~48.6-100.0~~
			~~NE~~	~~n=6; N=6~~	~~59.8~~	~~6.9-100.0~~	~~82.3~~	~~68.4-97.8~~	~~88.2~~	~~74.8-100.0~~	~~92.2~~	~~77.7-100.0~~
		After 1 appl.	MAR	n=6	62.3	25.8-98.6	69.0	14.3-100.0	70.9	37.7-99.6	76.1	48.6-100.0
			NE	n=2	32.1	6.9-57.2	83.4	74.8-92.0	87.4	74.8-100.0	88.9	77.7-100.0
		After 2 appl.	NE	n=3; ~~N=3~~	68.9	31.9-100.0	76.4	68.4-87.8	85.2	80.3-92.8	91.8	90.0-94.2
	nb PESINC on plant	~~All assessments~~	~~MAR~~	~~n=8; N=8~~	~~42.8~~	~~9.6-60.0~~	~~83.5~~	~~43.9-100.0~~	~~83.2~~	~~54.9-100.0~~	~~90.2~~	~~68.6-100.0~~
			~~NE~~	~~n=6; N=6~~	~~16.3~~	~~5.8-30.0~~	~~83.9~~	~~61.5-100.0~~	~~88.6~~	~~61.5-100.0~~	~~90.8~~	~~65.6-100.0~~
		After 1 appl.	MAR	n=7	47.5	25.5-60.0	81.1	43.9-100.0	80.8	54.9-99.4	88.8	68.6-100.0
			NE	n=4	9.9	5.8-15.3	85.7	61.5-100.0	88.7	61.5-100.0	90.6	65.6-100.0
		After 2 appl.	NE	n=2; ~~N=2~~	28.0	26.0-30.0	83.8	67.5-100.0	90.9	81.7-100.0	92.5	85.0-100.0

According to the presented results of disease severity (%area; 0-100 index) and disease incidence accross both EPPO zones, there is a dose response in favor of 0.5 L PR/ha. Overall, A23109A at 0.5 L PR/ha performed either equivalent or superior to the lower dose rate of 0.4 L PR/ha. The dose response in favor of 0.5 L/ha was also confirmed after two applications following the disease appearance.

As a result, the dose of 0.5 L PR/ha of A23109A provided the optimum overall control and should be considered the minimum effective dose to deliver robust control of *Bremia lactucae* on lettuce, for which activity of A23109A is claimed.

Comments of zRMS:

A total of 14 field efficacy trials have been submitted to determine minimum effective dose in lettuce. A23109A has been used at three dose rates of 0,25 l/ha (0,5N), 0,4 l/ha (0,8N) and 0,5 l/ha (1N).
8 efficacy trials were carried out in the Maritime EPPO climatic zone. Based on PESSEV on plant, no significant differences between effectiveness of dose rates are visible. The mean efficacy was >90% in all trials. The test product at 0,5 l/ha achieved superior results compared to other doses in case of PESSEV index after 1 application following appearance of disease in 6 out of 8 trials.
6 trials were conducted in the North-East EPPO zone. Very high results have been observed for all dose rates in case of PESSEV parameter. The mean efficacy was on similar level for all dose rates (>90%). Based on PESSEV index, A23109A at 0,5 l/ha achieved superior efficacy compared to other doses after 2 applications in 3 out of 6 trials.
No efficacy trials have been submitted from the South-East EPPO climatic zone. The cMS is kindly asked to extrapolate trials from other EPPO zones and consider this use on national level.

Taking into account above conclusions, dose rate of 0,5 l/ha can be consider minimum effective dose to control of *Bremia lactucae* on lettuce.

3.2.2.2 Minimum effective dose against *Peronospora destructor* on onion

13 field trials were established in order to determine the minimum effective dose for the control of the *Peronospora destructor* on onion. These trials have been conducted between 2019 and 2020 in Belgium (1x), Czech Republic (1x), France (2x), The Netherlands (5x) and Poland (4x).
A23109A was tested at 0.25, 0.4 and 0.5 L PR/ha dose rates in onion for the control of *Peronospora destructor*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 ‘Minimum effective dose’. A summary of the dose response results is provided in Table 3.2-16.

In these 13 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

It is to note that the rates of MFX in A23109A indicated in the trial reports and the tables of results is calculated on global definition (R+S enantiomer) although the rate of MFX in A23109A is well based on EU MFX definition. A23109A brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

The means presented in the Table 3.2-16 were calculated from the assessment timings where the disease pressure was at least of 10% in the untreated check and where the standard performed as expected.

Table 3.2-16: Minimum effective dose. Efficacy of A23109A at proposed label rate, at 80% and 50% dose rates on onion against *Peronospora destructor*

Target	Assessment type	Grouping	EPPO zone	Number of trials~~: Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control					
							A23109 [A] (EXF16956C) at 0.25 L PR/ha (50% of full rate)		A23109 [A] (EXF16956C) at 0.4 L PR/ha (80% of full rate)		A23109 [A] (EXF16956C) at 0.5 L PR/ha (Full rate)	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora destructor (PERODE)	% PESSEV on leaf	~~All assessments~~	~~MAR~~	~~n=4; N=5~~	~~63.5~~	~~24.9-80.1~~	~~63.2~~	~~36.8-96.3~~	~~70.2~~	~~41.2-98.3~~	~~76.7~~	~~58.9-98.9~~
			~~NE~~	~~n=4; N=4~~	~~25.3~~	~~6.9-42.6~~	~~65.9~~	~~19.3-95.8~~	~~82.1~~	~~58.9-95.7~~	~~78.9~~	~~53.4-96.5~~
		After 1 appl.	NE	n=1	42.6	-	82.3	-	93.8	-	95.9	-
		After 2 appl.	MAR	n=3~~; N=3~~	43.0	24.1-72.5	74.4	36.8-98.7	86.3	75.4-100	86.1	66.8-100
			NE	n=3~~; N=3~~	10.8	6.9-15.2	64.8	19.3-95.8	78.8	58.9-95.7	75.8	53.4-96.5
	% Overall disease on leaves per plot	~~All assessments~~	~~MAR~~	~~n=7; N=7~~	~~64.3~~	~~33.8-90.0~~	~~81.7~~	~~56.7-98.0~~	~~86.6~~	~~60.0-100~~	~~85.6~~	~~60.6-100~~
			~~NE~~	~~n=2; N=2~~	~~28.7~~	~~12.4-45.0~~	~~91.2~~	~~82.3-100~~	~~96.5~~	~~93.0-100~~	~~97.2~~	~~94.3-100~~
		After 1 appl.	MAR	n=2	71.3	52.6-90.0	91.3	84.2-98.3	94.9	90.2-99.6	95.1	90.2-99.9
			NE	n=1	45.0	-	82.3	-	93.0	-	94.3	-
		After 2 appl.	MAR	n=3~~; N=3~~	37.6	31.2-47.9	75.6	58.5-98.9	80.9	60.0-99.9	87.2	62.1-100
			NE	n=1~~; N=1~~	12.4	-	100	-	100	-	100	-
	% PESINC on leaf	~~All assessments~~	~~MAR~~	~~n=6; N=6~~	~~82.9~~	~~40.3-100~~	~~55.2~~	~~6.3-100~~	~~72.5~~	~~27.8-100~~	~~80.9~~	~~51.1-100~~
			~~NE~~	~~n=4; N=5~~	~~83.0~~	~~55.1-100~~	~~63.9~~	~~43.6-93.4~~	~~71.6~~	~~55.5-98.2~~	~~74.6~~	~~55.1-100~~
		After 1 appl.	MAR	n=2	65.9	40.3-91.5	94.6	89.2-100.0	99.7	99.4-100.0	99.7	99.4-100.0
			NE	n=1	55.1	-	93.4	-	98.2	-	100	-
		After 2 appl.	MAR	n=3~~; N=3~~	88.5	76.0-100	72.6	51.0-92.4	75.6	51.0-100	82.4	59.9-100
			NE	n=2~~; N=2~~	91.6	85.1-98.0	69.2	58.2-80.1	67.5	56.1-78.9	68.2	55.1-81.3

According to the presented results of disease severity and disease incidence on leaf across both EPPO zones, there is a dose response in favor of 0.5 L PR/ha. Regarding the presented results of overall disease on leaves per plot, both doses of 0.4 and 0.5 L PR/ha provided a mean superior control to the lower dose rate of 0.25 L PR/ha.

In parallel, the dose response in favor of 0.5 L PR/ha was observed in most assessments from Maritime EPPO zone, whereas no particular trend between 0.4 and 0.5 L PR/ha could be highlighted in the North-East EPPO zone.

Over all 3 assessment types and across both EPPO zones, the dose response was three times in favor of 0.5 L PR/ha and three times in favor of both 0.4 L PR/ha and 0.5 L PR/ha. The same trend was obserevd after two applications from disease appearance. In addition, for resistance management reason, the highest rate of 0.5 L PR/ha of A23109A should be more robust.

As a result, the dose of 0.5 L PR/ha of A23109A provided the optimum overall control and should be considered the minimum effective dose to deliver robust control of *Peronospora destructor* on onion, for which activity of A23109A is claimed.

Comments of zRMS:

A total of 13 field efficacy trials have been submitted to determine minimum effective dose in onion. A23109A has been used at three dose rates of 0,25 l/ha (0,5N), 0,4 l/ha (0,8N) and 0,5 l/ha (1N).
9 efficacy trials were carried out in the Maritime EPPO climatic zone. A23109A at dose rate of 0,4 and 0,5 l/ha achieved similar efficacy of >86% after 2 applications from disease appearance. The test product at 0,5 l/ha had significant superior result after 2 applications compared to lower doses in case of percent of overall disease on leaves per plot. The similar trend was visible for PESINC parameter. The mean efficacy of >82% was noted after 2 applications in 3 out of 9 trials.
4 field trials were available in the North-East zone. Limited number of results have been presented for three assessment types. Based on PESSEV on leaf, A23109A at dose rate of 0,4-0,5 l/ha achieved significantly higher results compared to lower dose in 3 out of 4 trials. However, it should be assumed that the dose rate of 0,5 l/ha will be more justified for higher pest severity.
No efficacy trials have been presented in the South-East EPPO zone. The cMS Slovakia is kindly asked to extrapolate trials from other zones and consider this MED on national level.

Taking into account above conclusions, dose rate of 0,5 l/ha can be considered minimum effective dose to control of *Peronospora destructor* on onion.

3.2.2.3 Minimum effective dose against *Phytophthora porri* on leek

9 field trials were established to determine the minimum effective dose for the control of the *Phytophthora porri* on leek. These trials have been conducted between 2019 and 2020 in Belgium (4x), France (4x) and The Netherlands (1x). A23109A was tested at 0.25, 0.4 and 0.5 L/ha dose rates in leek for the control of *Phytophthora porri*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 'Minimum effective dose'. A summary of the dose response results is provided in Table 3.2-17.

In these 9 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

It is to note that the rates of MFX in A23109A indicated in the trial reports and the tables of results is calculated on global definition (R+S enantiomer) although the rate of MFX in A23109A is well based on EU MFX definition. A23109A brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

The means presented in the Table 3.2-17 were calculated from the assessment timings where the disease

pressure was at least of 5% in the untreated check and where the standard performed as expected.

Table 3.2-17: Minimum effective dose. Efficacy of A23109A at proposed label dose rate, at 80% and 50% dose rates against *Phytophthora porri* on leek

Target	Assessment type	Grouping	EPPO zone	Number of trials; Number of assessments	Infestation of the untreated control (% pest incidence or % pest severity)		% control					
							A23109A at 0.25 L PR/ha (50% of full rate)		A23109A at 0.4 L PR/ha (80% of full rate)		A23109A at 0.5 L PR/ha (Full rate)	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Phytophthora porri (PHYTPO)	PESSEV % disease on leaves per plot	All assessments	MAR	n=8; N=9	31.5	10.0-77.5	62.0	31.7-100	71.5	50.0-100	73.8	50.0-99.4
		After 1 appl.		n=1	16.6	-	31.9	-	52.5	-	56.8	-
		After 2 appl.		n=4; N=4	20.5	10.0-36.1	67.5	27.5-100	74.0	50.0-100	77.2	50.0-99.1
	PESINC % infected leaves	All assessments		n=7; N=7	69.8	39.0-98.1	82.4	64.9-100	84.3	58.2-100	84.0	65.2-100
		After 1 appl.		n=1	40.9	-	71.0	-	58.2	-	68.1	-
		After 2 appl.		n=6; N=6	58.2	21.0-88.9	85.8	64.9-99.7	82.6	26.2-100	89.1	65.2-99.7

According to the presented results of disease severity on leaf over all assessments, the dose rate of 0.5 L PR/ha of A23109A provided the optimum overall control. The dose response in favour of 0.5 L/ha was also confirmed after two applications following the disease appearance.

According to the presented results of disease incidence on leaf over all assessments, a slight dose response was observed in favour of 0.4-0.5 L PR/ha. A dose response was observed in favour of 0.5 L PR/ha when looking at the results after two applications following the disease appearance.

As a result, the dose rate of 0.5 L/ha of A23109A provided the optimum overall control and should be considered the minimum effective dose to deliver robust control of *Phytophthora porri* on leek, for which activity of A23109A is claimed.

Comments of zRMS:

A total of 9 field efficacy trials have been submitted to determine minimum effective dose in leek. A23109A was applied at three dose rates of 0,25 l/ha (0,5N), 0,4 l/ha (0,8N) and 0,5 l/ha (1N). All trials were carried out in the Maritime EPPO climatic zone. Based on PESSEV parameter, the test product at 0,5 l/ha achieved superior result compared to lower doses in 4 out of 9 trials after 2 applications following the disease appearance. However, slight differences between 0,4 and 0,5 l/ha have been observed. Also PESINC parameter shows higher efficacy of dose rate of 0,5 l/ha. Taking into account above conclusions, dose rate of 0,5 l/ha can be considered minimum effective dose to control of *Phytophtohora porri* on leek.
No efficacy trials were available in other EPPO zones. The cMS Slovakia is kindly asked to extrapolate the trial results from the Maritime zone and consider this MED on national level. Poland can not consider this use because no trials from the North-East zone have been presented.

3.2.2.4 Minimum effective dose against *Peronospora* spp. on Brassica crops

11 field trials were established in order to determine the minimum effective dose for the control of the *Peronospora* spp. on brassica crops. These trials have been conducted between 2019 and 2020 in Belgium (1x), Germany (2x), The Netherlands (2x) and Poland (6x). A23109A was tested at 0.25, 0.4 and 0.5 L PR/ha dose rates in brassica crops for the control of *Peronospora* spp. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A, in accordance with the EPPO standard PP 1/225 ‘Minimum effective dose’. A summary of the dose response results is provided in Table 3.2-18.

In these 11 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

It is to note that the rates of MFX in A23109A indicated in the trial reports and the tables of results is calculated on global definition (R+S enantiomer) although the rate of MFX in A23109A is well based on EU MFX definition. A23109A brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).

The means presented in the Table 3.2-18 were calculated from the assessment timings where the disease pressure was at least of 5% in the untreated check and where the standard performed as expected.

Table 3.2-18: Minimum effective dose. Efficacy of A23109A at proposed label rate, at 80% and 50% dose rates on brassica crops against *Peronospora* spp.

Target	Assessment type	Grouping	EPPO zone	Number of trials~~; Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control					
							A23109 [A] (EXF16956C) at 0.25 L PR/ha (50% of full rate)		A23109 [A] (EXF16956C) at 0.4 L PR/ha (80% of full rate)		A23109 [A] (EXF16956C) at 0.5 L PR/ha (Full rate)	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora spp. (1PEROG)	% PESSEV on leaf	~~All assessments~~	~~MAR~~	~~n=5; N=5~~	~~23.2~~	~~5.9-75.6~~	~~78.0~~	~~55.3-91.3~~	~~80.1~~	~~59.1-93.0~~	~~80.6~~	~~51.1-91.3~~
			~~NE~~	~~n=2; N=2~~	~~23.6~~	~~20.0-27.1~~	~~94.1~~	~~89.3-98.9~~	~~97.3~~	~~96.4-98.2~~	~~99.0~~	~~99.0~~
		After 2 appl.	MAR	n=1~~; N=1~~	13.7	-	84.3	-	88.9	-	90.0	-
			NE	n=1~~; N=1~~	17.6	-	92.9	-	98.3	-	100	-
	% PESINC on plant	~~All assessments~~	~~MAR~~	~~n=2; N=2~~	~~59.9~~	~~33.7-86.1~~	~~71.1~~	~~55.5-86.7~~	~~74.1~~	~~59.4-88.7~~	~~79.2~~	~~71.2-87.2~~
			~~NE~~	~~n=6; N=6~~	~~24.1~~	~~5.7-37.0~~	~~85.2~~	~~50.8-100~~	~~93.7~~	~~64.9-100~~	~~95.4~~	~~75.0-100~~
		After 1 appl.	NE	n=3	22.5	5.7-37.0	71.0	50.8-100.0	87.4	64.9-100.0	90.8	75.0-100.0
		After 2 appl.	MAR	n=1~~; N=1~~	33.7	-	55.5	-	59.4	-	71.2	-
	% PESINC on leaf	~~All assessments~~	~~MAR~~	~~n=4; N=4~~	~~76.2~~	~~51.5-86.1~~	~~66.1~~	~~50.6-86.7~~	~~71.2~~	~~52.3-88.7~~	~~67.0~~	~~28.6-87.2~~
			~~NE~~	~~n=2; N=2~~	~~73.9~~	~~48.5-99.2~~	~~83.7~~	~~77.4-89.9~~	~~84.3~~	~~74.4-94.1~~	~~89.8~~	~~79.5-100~~
		After 2 appl.	MAR	n=1~~; N=1~~	81.3	-	61.9	-	81.1	-	78.9	-
			NE	n=2~~; N=2~~	61.7	24.2-99.2	80.7	71.4-89.9	81.7	69.3-94.1	86.8	73.6-100

According to the presented results of disease severity on leaf and disease incidence on leaf and plant accross all EPPO zones, A23109A at 0.5 L PR/ha performed either equivalent or superior to the lower dose rate of 0.4 L PR/ha.

The different levels of control provided by the product A23109A at dose rates of 0.4 and 0.5 L PR/ha can be due to the different levels of pest pressure observed in the trials, as it is difficult to find trial sites with good pest pressure. Indeed, across all assessment types and all EPPO zones, a clear dose response in favor of 0.5 L PR/ha was observed especially at assessments where pest pressure was superior to 25% in the untreated, whereas both dose rates of 0.4 and 0.5 L PR/ha of A23109A provided the optimum overall control at assessments where pest pressure was inferior to 25% in the untreated.

Overall 3 assessment types and across both EPPO zones, the dose response was twice in favor of 0.5 L PR/ha and four times in favor of both 0.4 and 0.5 L PR/ha. However, after two applications from disease appearance, the dose response was five times slightly in favor of 0.5 L PR/ha and once in favor of both 0.4 and 0.5 L PR/ha.

As a result, the dose rate of 0.5 L PR/ha of A23109A provided the optimum overall control and should be considered the minimum effective dose to deliver robust control of *Peronospora* spp. on brassica crops, for which activity of A23109A is claimed, taking also into account the resistance risk to MFX, the highest rate is preferred.

Comments of zRMS:

A total of 11 efficacy trials have been submitted to determine minimum effective dose on Brassica vegetables. A23109A was applied at three dose rates of 0,25 l/ha (0,5N), 0,4 l/ha (0,8N) and 0,5 l/ha (1N).
5 trials were carried out in the Maritime EPPO climatic zone. Limited number of data have been presented for both assessment types. Based on PESINC on plant, A23109A at 0,5 l/ha shows superior result compared to lower dose rates but in only 1 trial. No significant differences between doses are visible in case of PESSEV. Due to insufficient dataset, the cMSs are kindly asked to consider this MED on national level.
6 efficacy trials were available in the North-East zone. Taking into account PESINC on plant, A23109A at 0,5 l/ha achieved higher efficacy compared to lower dose rates in 3 out of 6 trials after 1 application. However, number of trial results is limited and this use can not be considered in terms of minimum effective dose in Poland.
No efficacy trials have been presented in the South-East EPPO zone. The cMS Slovakia is kindly asked to extrapolate trial results from the other zones and consider this MED on national level.

3.2.2.5 Summary and conclusions on the minimum effective dose

A23109A contains 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).
It is to note that the rates of MFX in A23109A indicated in the trial reports and the tables of results is calculated on global definition (R+S enantiomer) although the rate of MFX in A23109A is well based on EU MFX definition.

A total of 14 field trials were established to determine the minimum effective dose for the control of the *Bremia lactucae* on lettuce. A23109A was tested at 0.25 to 0.5 L PR/ha on lettuce for the control of *Bremia lactucae*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A. Trials were conducted in field conditions in Maritime and North-East EPPO zones.

A total of 13 field trials were established to determine the minimum effective dose for the control of *Peronospora destructor* on onion. A23109A was tested at 0.25 to 0.5 L PR/ha on onion for the control of *Peronospora destructor*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A. Trials were conducted in Maritime and North-East EPPO zones.

A total of 9 field trials were established in order to determine the minimum effective dose for the control of the *Phytophthora porri* on leek. A23109A was tested at 0.25 to 0.5 L PR/ha on leek for the control of *Phytophthora porri*. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A. Trials were conducted in Maritime EPPO zone.

A total of 11 field trials were established to determine the minimum effective dose for the control of *Peronospora* spp. on brassica crops. A23109A was tested at 0.25 to 0.5 L PR/ha on brassica crops for the control of *Peronospora* spp. The rates reflect the proposed label rate and 80% and 50% of the full recommended rate of A23109A. Trials were conducted in Maritime and North-East EPPO zones.

In general, the dose response was demonstrated both in term of disease severity and incidence.

Considering the resistance risk to MFX, for which the highest rate is preferred and according to the presented results, the dose rate 0.5 L PR/ha of A23109A provided the optimum overall control and should be considered as effective against these major diseases on lettuce grown in field or greenhouse, onion, leek and brassica crops, for which activity of A23109A is claimed.

As a result, the proposed rate delivering maximum 0.5 L PR/ha as specified in the GAP should be considered the minimum effective dose to deliver robust control of symptoms of *Bremia lactucae* on lettuce, *Peronospora destructor* on onion, *Phytophthora porri* on leek and *Peronospora* spp. on brassica crops, providing significant disease control under a wide range of environmental conditions.

3.2.3 Efficacy tests (KCP 6.2)

A total of 55 field efficacy trials with A23109A were conducted in Belgium, Czech Republic, Germany, France, The Netherlands and Poland between 2019 and 2021 to demonstrate the efficacy of A23109A for the control of *Bremia lactucae* on lettuce, *Peronospora destructor* on onion, *Phytophthora porri* on leek and *Peronospora* spp. on brassica crops.

A23109A contains 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).
It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although indicated 90 g ai/ha in the trial reports and the tables of results, calculated based on global definition (R+S enantiomer).

Trials in this dossier were carried out by Syngenta organisations, contractor companies and Official Research institutes, all of which follow the EPPO guidelines and are officially recognized by the competent authorities to carry out field registration trials in accordance with the principles of Good Experimental Practice (GEP). The hyperlinks to relevant GEP certificates from the above-mentioned official country testing organisations are available under Annex Point IIIA 3.7.

Methodology for efficacy data summary and discussion

The efficacy data of A23109A discussed in this dossier correspond to the %control of untreated check based on pest severity or pest incidence results. Disease severity is considered to be the most relevant variable, however additional results on pest incidence are also presented in this dossier. The assessment types used in this dossier are described below for each crop. Other assessment types are available in the single trials reports.

Lettuce

Assessment Data Type, unit	Description
Pest severity, % plant area	% Disease on surface per plant, out of 30 or 60 plants
Pest severity, 0-100 index	% Infestation degree on plants (Townsend-Heuberger Index) per plot
Pest incidence, number/30 or 60 plants	Count of infected plants, out of 30 or 60 plants

Onion

Assessment Data Type, unit	Description
Pest severity, % disease area per leaf	% disease area per leaf, out of 25 leaves
Pest severity, % overall disease on leaves per plot	% overall disease on leaves per plot (Overall scoring of infection out of the plot)
Pest incidence, % of infected leaves	% of infected leaves, per 25 leaves

Leek

Assessment Data Type, unit	Description
Pest severity, % overall disease on leaves per plot	% Overall disease on leaves per plot (Overall scoring of infection out of the plot)
Pest incidence, % of infected leaves	% infected leaves, out of 25 or 50 leaves or out 25 plants

Brassica crops

Assessment Data Type, unit	Description
Pest severity, % infected leaf surface/(young) leaf	% diseased area per leaf or young leaf, out of leaves 5 on 10 plants or 20 or 25 (young) leaves
Pest incidence, % infected plant per plot	% infected plants, per 10 or 20 plants
Pest incidence, % infected (young) leaves	% infected leaves, out of 20 or 25 (young) leaves or 5 leaves on 10 plants

Spinach

Assessment Data Type, unit	Description
Pest severity, % infected leaf surface/leaf	% diseased area per one leaf, out of 4 leaves on 25 plants or 5 leaves on 10 plants
Pest incidence, % infected plant per plot	% Infected plant, out of 25 plants

Pest incidence, % infected leaves (on 4 leaves on 25 plants or 5 leaves on 10 plants)	% diseased leaves, out of 4 leaves on 25 plants or 5 leaves on 10 plants

Methodology for means calculation

All assessment timings where the disease pressure was sufficient and where the standard offered an adequate level of control were included in the mean calculation.
The infestation thresholds in the untreated check considered as sufficient to reliably assess the efficacy of the product were set up at

- 5% of pest incidence or pest severity for leek, spinach and brassica crops
- 10% of pest incidence or pest severity for lettuce and onion.

In addition, assessment timings where there was an important decrease of efficacy after the last application were not included in the means calculation.

As in practice, A23109A will be used in program with other fungicide products either preventively or curatively, the product was applied three to eight times with intervals between applications of 5-30 days. However, to support the GAP with the number of applications of A23109A limited to 2 per season, special means calculation was made after 1 and after 2 applications from disease appearance.

Table 3.2-19: Details on trial methodology

Bremia lactucae on lettuce in Maritime EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/65(3)
Experimental design	Plot design	Randomized Complete Block (RCB) (8 trials)
	Plot size	6,65-135 m²
	Number of replications	4 (8 trials)
Crop	Trials per crop	Lettuce (LACSA) (6 trials) Cos lettuce (LACSR) (1 trial) Garden lettuce (LACSA) (1 trial)
	Varieties per crop	Lettuce : Nadine (2 trials), Lollo bionda Aleppo (1 trial), Robinson (1 trial), Maximus (1 trial), Excursus (1 trial) Cos lettuce : Actina (1 trial) Garden lettuce : Sansula (1 trial)
	Planting date	July 2019 (1 trial), August 2019 (3 trials), May 2020 (1 trial), August 2020 (3 trials)
Application	Crop stage (BBCH) at application	Lettuce : from BBCH 35 to BBCH 49 Cos lettuce : from BBCH 17 to BBCH 41 Garden lettuce : from BBCH 15 to BBCH 46
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	4 appl. (1 trial) with intervals of 9-10 days 5 appl. (5 trials) with intervals of 7-14 days 7 appl. (2 trials) with intervals of 7-14 days
	Spray volumes	300-500 L/ha
Assessment	Assessment types	Pest incidence (nb) on plant, pest incidence (%) on plant, pest severity (% area) on plant, pest severity (0-100 index scale) on plant, pest severity (0-3 scale) on plant, yield (kg) marketable plants, count (%) marketable plants, phytotoxicity - general/injury (%) on plant
	Assessment dates	0-35 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Loamy sand (4 trials), n.d. (1 trial), fine sand (1 trial), sand (1 trial), sandy loam (1 trial)
	Natural / artificial innoculation…	Artificial (1 trial), natural (7 trials)
	Field / Greenhouse...	Field (8 trials)

* DALA = Days After Last Application

Bremia lactucae on lettuce in North-East EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/65(3), EPPO PP 1/065(3)
Experimental design	Plot design	Randomized Complete Block (RCB) (6 trials)
	Plot size	10,5-36 m²
	Number of replications	4 (6 trials)
Crop	Trials per crop	Lettuce (LACSA) (6 trials)
	Varieties per crop	Maugli (1 trial), Juleczka (1 trial), Bakata (1 trial), Królowa Majowych (1 trial), Królowa Majowa (1 trial), Torpedo (1 trial)
	Planting date	August 2019 (2 trials), April 2020 (1 trial), July 2020 (1 trial), August 2020 (2 trials)
Application	Crop stage (BBCH) at application	from BBCH 17 to BBCH 48
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	4 appl. (3 trials) with intervals of 9-10 days 5 appl. (3 trials) with intervals of 6-11 days
	Spray volumes	300-600 L/ha
Assessment	Assessment types	Pest incidence (nb) on plant, pest incidence (%) on plant, pest severity (% area) on plant, pest severity (0-100 index scale) on plant, pest severity (0-3 index scale) on plant, yield (kg) marketable plants, count (%) marketable plants
	Assessment dates	6-25 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Silty clay (1 trial), sandy clay loam (1 trial), sandy loam (1 trial), clay sandy loam (1 trial), loamy sand (1 trial), silt loam (1 trial)
	Natural / artificial innoculation…	Natural (6 trials)
	Field / Greenhouse...	Field (6 trials)

* DALA = Days After Last Application

Peronospora destructor on onion in Maritime EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/120(2)
Experimental design	Plot design	Randomized Complete Block (RCB) (9 trials)
	Plot size	10.56-165 m²
	Number of replications	4 (9 trials)
Crop	Trials per crop	Onion (ALLCE) (4 trials) Direct-seeded onion (ALLXS) (4 trials) Transplanted onion (ALLXP) (1 trial)
	Varieties per crop	Onion : Domo (2 trials), Mustang F1 (1 trial), Hytech (1 trial) Direct-seeded onion : Lusy (1 trial), Hoza (1 trial), Hytec F1 (1 trial), Centro (1 trial) Transplanted onion : Rosé de Roscoff (1 trial)
	Planting date	April 2019 (3 trials), June 2019 (1 trial), April 2020 (4 trials), May 2020 (1 trial)
Application	Crop stage (BBCH) at application	From BBCH 14 to BBCH 89
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	5 appl. (1 trial) with intervals of 9-11 days 6 appl. (4 trials) with intervals of 5-11 days 7 appl. (1 trial) with intervals of 5-17 days 8 appl. (3 trials) with intervals of 6-11 days
	Spray volumes	300 - 400 L/ha
Assessment	Assessment types	Pest severity (%) on leaf, pest severity (%) on leaves/plot, pest incidence (%) of infected leaves, yield marketable plants (T/ha)
	Assessment dates	1-125 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Sandy clay (2 trials), loamy sand (1 trial), silty clay (1 trial), clay sandy loam (2 trials), sand (2 trials), sandy clay (1 trial)
	Natural / artificial innoculation…	Natural (9 trials)
	Field / Greenhouse...	Field (9 trials)

* DALA = Days After Last Application

Peronospora destructor on onion in North-East EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/120(2)
Experimental design	Plot design	Randomized Complete Block (RCB) (4 trials)
	Plot size	6-12.5 m²
	Number of replications	4 (4 trials)
Crop	Trials per crop	Onion (ALLCE) (1 trial) Direct-seeded onion (ALLXS) (2 trials) Transplanted onion (ALLXP) (1 trial)
	Varieties per crop	Onion : Hybelle F1 (1 trial) Direct-seeded onion : Wolska (1 trial), Grabowska (1 trial) Transplanted onion : Majka (1 trial)
	Planting date	April 2019 (1 trial), March 2020 (1 trial) April 2020 (1 trial), May 2020 (1 trial)
Application	Crop stage (BBCH) at application	From BBCH 15 to BBCH 49
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	3 appl. (1 trial) with intervals of 7-10 days 6 appl. (2 trials) with intervals of 7-13 days 7 appl. (1 trial) with intervals of 6-8 days
	Spray volumes	200-800 L/ha
Assessment	Assessment types	Pest incidence (%) on leaf, pest severity (%) on leaf, yield marketable plants (T/ha)
	Assessment dates	3-58 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Loamy sand (1 trial), sandy loam (2 trials), sandy clay loam (1 trial)
	Natural / artificial innoculation…	Natural (4 trials)
	Field / Greenhouse...	Field (4 trials)

* DALA = Days After Last Application

Peronospora destructor on onion in North-East EPPO zone – supportive trials

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/120(2)
Experimental design	Plot design	Randomized Complete Block (RCB) (3 trials)
	Plot size	12 m²
	Number of replications	4 (3 trials)
Crop	Trials per crop	Transplanted onion (ALLXP) (3 trials)
	Varieties per crop	Majka (3 trials)
	Planting date	April 2021 (1 trial), May 2021 (2 trials)
Application	Crop stage (BBCH) at application	From BBCH 15 to BBCH 49
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	5 appl. (2 trials) with intervals of 7-10 days 8 appl. (1 trial) with intervals of 7-11 days
	Spray volumes	200-600 L/ha
Assessment	Assessment types	Pest incidence (%) on leaf, pest severity (% area) on leaf, yield marketable plants (T/ha)
	Assessment dates	3-26 DALA
Other relevant information	Soil type, pH (in case of soil active substance …)	Loamy sand (1 trial), loamy clay sand (2 trials)
	Natural / artificial innoculation…	Natural (3 trials)
	Field / Greenhouse...	Field (3 trials)

* DALA = Days After Last Application

Phytophthora porri on leek in Maritime EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/120(2)
Experimental design	Plot design	Randomized Complete Block (RCB) (9 trials)
	Plot size	9,75-17,25 m²
	Number of replications	4 (9 trials)
Crop	Trials per crop	Leek (ALLPO) (4 trials) Common leek (ALLPO) (5 trials)
	Varieties per crop	Leek : Murcia (1 trial), Selina (1 trial), Harston (2 trials) Common leek : Harston (2 trials), Oslo (1 trial), Selina (1 trial), Triton (1 trial)
	Planting date	June 2019 (1 trial), July 2019 (3 trials), July 2020 (5 trials)
Application	Crop stage (BBCH) at application	Common leek : from BBCH 15 to BBCH 49
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	4 appl. (1 trial) with intervals of 12-26 days 5 appl. (4 trials) with intervals of 17-24 days 6 appl. (2 trials) with intervals of 13-30 days 8 appl. (2 trials) with intervals of 12-21 days
	Spray volumes	300-500 L/ha
Assessment	Assessment types	Pest incidence (%) on leaf, pest severity (% area/plot) on leaf, pest severity (% area) on leaf, yield (T/ha) marketable plants, phytotoxicity - general/injury (%) on plant, vigor (%) on plant
	Assessment dates	0-124 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Silt (3 trials), fine sand (1 trial), loamy sand (1 trial), fine sandy loam (2 trials), sand (1 trial), loamy fine sand (1 trial)
	Natural / artificial innoculation…	Natural (9 trials)
	Field / Greenhouse...	Field (9 trials)

* DALA = Days After Last Application

Peronospora sp. on brassica in Maritime EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4), EPPO PP 1/152(4), EPPO PP 1/181(4)
	Specific guidelines	EPPO PP 1/65(3)
Experimental design	Plot design	Randomized Complete Block (RCB) (5 trials)
	Plot size	10.5-36 m²
	Number of replications	4 (5 trials)
Crop	Trials per crop	Turnip (BRSRR) (1 trial) Head cabbage (BRSOL) (1 trial) Cauliflower (BRSOB) (3 trials)
	Varieties per crop	Turnip : Korial (1 trial) Head cabbage : Proxy (1 trial) Cauliflower : Giewont (1 trial), Clementine (1 trial), Aerospace (1 trial)
	Planting date	August 2019 (1 trial), May 2020 (1 trial), June 2020 (1 trial), July 2020 (1 trial), May 2021 (1 trial)
Application	Crop stage (BBCH) at application	Turnip : from BBCH 14 to BBCH 47 Head cabbage : from BBCH 41 to BBCH 47 Cauliflower : from BBCH 16 to BBCH 51
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	4 appl. (1 trial) with intervals of 7-10 days 5 appl. (2 trials) with intervals of 6-10 days 8 appl. (2 trials) with intervals of 3-14 days
	Spray volumes	300-400 L/ha
Assessment	Assessment types	Pest incidence (nb/plant) on leaf, count (nb) infected plants, pest incidence (%) on plant, pest incidence (%) on leaf, pest severity (% area) on leaf, yield (T/ha)marketable plants, phytotoxicity - general/injury (%) on plant
	Assessment dates	2-42 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Sandy clay (1 trial), clay (1 trial), sandy loam (1 trial), loamy silt (1 trial), n.d. (1 trial)
	Natural / artificial innoculation…	Natural (5 trials)
	Field / Greenhouse...	Field (5 trials)

* DALA = Days After Last Application

Peronospora sp. on brassica in North-East EPPO zone

Guidelines	General guidelines	EPPO PP 1/181(4), PP 1/152(4), EPPO PP 1/135(4)
	Specific guidelines	EPPO PP 1/65(3)
Experimental design	Plot design	Randomized Complete Block (RCB) (6 trials)
	Plot size	1-15 m²
	Number of replications	4 (6 trials)
Crop	Trials per crop	Cabbage (BRSOL) (2 trials) Head cabbage (BRSOL) (1 trial) Peking cabbage (BRSPK) (1 trial) Brassica sp. (BRSSS) (1 trial) Cauliflower (BRSOB) (1 trial)
	Varieties per crop	Cabbage : Amager Polana (1 trial), Cyrlone F1 (1 trial) Head cabbage : Cyclone (1 trial) Peking cabbage : Bilko (1 trial) Brassica sp. : Romanesco (1 trial) Cauliflower : Snowball X (1 trial)
	Planting date	June 2019 (2 trials), July 2019 (1 trial), July 2020 (3 trials)
Application	Crop stage (BBCH) at application	Cabbage : from BBCH 41 to BBCH 46 Head cabbage : from BBCH 42 to BBCH 46 Peking cabbage : from BBCH 41 to BBCH 49 Brassica sp. : from BBCH 31 to BBCH 38 Cauliflower : from BBCH 19 to BBCH 41
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	4 appl. (3 trials) with intervals of 7-11 days 5 appl. (3 trials) with intervals of 4-11 days
	Spray volumes	370-800 L/ha
Assessment	Assessment types	Pest incidence (%) on leaf, pest incidence (%) on plant, pest severity (% area) on leaf, yield (T/ha) marketable plants, phytotoxicity - general/injury (%) on plant
	Assessment dates	0-42 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Silty clay (1 trial), loamy sand (1 trial), sandy clay loam (2 trials), sandy loam (2 trials)
	Natural / artificial innoculation…	Natural (6 trials)
	Field / Greenhouse...	Field (6 trials)

* DALA = Days After Last Application

***Peronospora* sp. on spinach in Maritime EPPO zone**

Guidelines	General guidelines	EPPO PP 1/181(4), PP 1/152(4), EPPO PP 1/135(4)
	Specific guidelines	EPPO PP 1/65(3)
Experimental design	Plot design	Randomized Complete Block (RCB) (5 trials)
	Plot size	10,5-18 m²
	Number of replications	4 (5 trials)
Crop	Trials per crop	Spinach (SPQOL) (5 trials)
	Varieties per crop	SV1714VC (2 trials), Viroflay (1 trial), Palco + Scorpius (1 trial), America (1 trial)
	Planting date	August 2019 (1 trial), August 2020 (3 trials), September 2020 (1 trial)
Application	Crop stage (BBCH) at application	From BBCH 10 to BBCH 49
	Timing at application	Preventive and curative applications
	Number of applications Intervals between applications	3 appl. (2 trials) with intervals of 10-11 days 5 appl. (2 trials) with intervals of 7-16 days 6 appl. (1 trial) with intervals of 5-9 days
	Spray volumes	200-500 L/ha
Assessment	Assessment types	Count - infected (nb) of leaf or plant, pest incidence (%) on leaf, pest incidence (%) on plant, pest severity (% area/plot) on leaf, pest severity (% area) on leaf, phytotoxicity - general/injury (%) on plant, vigor (%) on plant
	Assessment dates	0-44 DALA*
Other relevant information	Soil type, pH (in case of soil active substance …)	Fine sand (1 trial), sandy clay (1 trial), sand (1 trial), fine sandy loam (1 trial), silt (1 trial)
	Natural / artificial innoculation…	Artificial (2 trials), natural (3 trials)
	Field / Greenhouse...	Field (5 trials)

* DALA = Days After Last Application

3.2.3.1 Efficacy against *Bremia lactucae* on lettuce

A total of 14 trials were carried out to evaluate the efficacy of A23109A for the control of *Bremia lactucae* in lettuce.

Efficacy data for *Bremia lactucae* are presented from 14 efficacy trials assessed. 14 trials have been conducted between 2019 and 2020 in Belgium (5x), Germany (1x), France (2x) and Poland (6x).

In these 14 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

Table 3.2-20 shows a summary of relevant disease severity and incidence assessments on lettuce for *Bremia lactucae.* The means presented in these tables were calculated from the assessment timings where the disease pressure was at least of 10% in the untreated check and where the standard performed as expected.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-20: Efficacy of A23109A at the proposed label rate against *Bremia lactucae* on lettuce

Target	Assessment type	Grouping	EPPO zone	Number of trials~~; Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control			
							A23109A at 0.5 L PR/ha		Standard Revus (=A12946B) at 0.6 L PR/ha	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Bremia lactucae (BREMLA)	PESSEV on plant % Area	~~All assessments~~	~~MAR~~	~~n=4; N=6~~	~~27.6~~	~~14.4-42.5~~	~~**95.9**~~	~~80.3-100.0~~	~~91.4~~	~~76.6-99.9~~
			~~NE~~	~~n=4; N=8~~	~~33.5~~	~~10.2-80.1~~	~~**97.9**~~	~~84.2-100.0~~	~~91.3~~	~~75.2-100~~
		After 1 appl.	MAR	n=4	22.5	14.4-35.5	**98.9**	97.4-100.0	90.1	76.6-99.9
			NE	n=4~~; N=4~~	13.9	10.2-15.9	**96.0**	84.2-100.0	88.1	75.2-100
		After 2 appl.	NE	n=2~~; N=3~~	~~44.3~~ 37.8	36.6-~~57.3~~ 38.9	~~99.8~~ **100**	~~99.5~~ 100.0	~~93.9~~ 98.3	~~85.2~~ 97.2-99.4
	PESSEV on plant 0-100 index	~~All assessments~~	~~MAR~~	~~n=6; N=6~~	~~62.3~~	~~25.8-98.6~~	~~**76.1**~~	~~48.6-100.0~~	~~67.1~~	~~42.7-99.8~~
			~~NE~~	~~n=5; N=6~~	~~67.3~~	~~31.9-100.0~~	~~**91.3**~~	~~77.7-99.7~~	~~72.6~~	~~43.5-91.4~~
		After 1 appl.	MAR	n=6	62.3	25.8-98.6	**76.1**	48.6-100.0	67.1	42.7-99.8
			NE	n=1~~; N=1~~	57.2	-	**77.7**	-	60.4	-
		After 2 appl.	NE	n=3~~; N=4~~	~~64.5~~ 61.1	31.9-100	~~92.5~~ **93.4**	~~90.0~~ 91.3-94.6	~~71.1~~ 65.6	43.5-91.4
	PESINC on plant Number	~~All assessments~~	~~MAR~~	~~n=8; N=16~~	~~35.5~~	~~6.5-60.0~~	~~**94.8**~~	~~68.6-100.0~~	~~83.5~~	~~4.0-100~~
			~~NE~~	~~n=6; N=16~~	~~14.4~~	~~3.0-30.0~~	~~**93.9**~~	~~57.1-100.0~~	~~81.6~~	~~15.0-100~~
		After 1 appl.	MAR	n=8	23.0	6.5-58.5	**92.8**	68.6-100.0	88.1	60.2-100
			NE	n=6~~; N=6~~	13.7	5.8-30.0	**93.7**	65.5-100.0	85.5	53.3-100
		After 2 appl.	NE	n=2~~; N=3~~	28.~~7~~0	26.0-30.0	~~**95.0**~~ **100**	~~85.0~~ 100.0	~~57.5~~ 78.8	~~15.0~~ 65.8-91.8

Data demonstrated that the efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the efficacy of standard Revus (A12946B) at 0.6 L PR/ha against *Bremia lactucae* on lettuce. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance in the North-East EPPO zone.

The data also demonstrated that there was no difference in the performance of A23109A when trial data was grouped as presented in Table 3.2-20.

Efficacy against downy mildew on Leafy vegetables

According to EPPO extrapolation Table 14/19578: "Extrapolation table for effectiveness of fungicide s- Diseases on leafy vegetables", the presented efficacy data against *Bremia lactucae* and *Peronospora* spp. on the indicator crops lettuce and spinach can be extrapolated to the targeted crops: baby leaves, chards and beet leaves, chicory, chives, common purslane, cress, endive, escarole, herbs and edible flowers, lamb's lettuce, parsley, purple-vein rocket, watercress, iceberg lettuce under field conditions.

Extract from EPPO extrapolation table 14/19578: Leafy vegetables

Pathogen species	Disease group name	Indicator crops	Extrapolation to other crops
Bremia sp. BREMSP	Downy Mildew	Lettuce LACSS	Leafy vegetables of the Asteraceae 1COMF, Prickly lettuce LACSE, Dandelion TAROF, Endive CICEN, chicory CICIN
Peronospora sp.		Spinach or Rocket	Crucifereae 1CRUF, Chenopodioideae 1CHES (Spinach SPQOL, Chard BEAVV), Rocket ERUVE, Lamb's lettuce VLLLO, Italian corn salad VLLER

Asteraceae: LACSA lettuce *Lactuca sativa*, LACSE prickly lettuce *Lactuca serriola*, CICEN endive *Cichorium endivia*, CICIN chicory *Cichorium intybus*, CICIF chicory witloof *Cichorium intybus* var. foliosum, TAROF dandelion *Taraxacum officinale*. **Crucifereae** : LEPSA garden cress *Lepidium sativum*, BARVE landcress *Barbarea verna*, DIPER Rockets *Diplotaxis erucoides* and ERUVE *Eruca vesicaria* subsp. Sativa, NAAOF watercress *Nasturtium officinale*, BRSJU leaf mustard *Brassica juncea*. **Chenopodioideae** : SPQOL spinach *Spinacia oleracea*, BEAVV chard *Beta vulgaris* subsp. vulgaris.

Other: VLLLO lamb's lettuce *Valerianella locusta*, SANMI burnet *Sanguisorba minor*, VERBE cow cress *Veronica beccabunga*, VLLER Italian corn salad *Valerianella eriocarpa*, POROS purslane *Portulaca oleracea* subsp. sativa

In addition, according to EPPO PP1/241(2) *Guidance on comparable climates*, even when climatic conditions are not comparable, use of the data may still be acceptable, as it may be possible to argue that the identified differences represent a more challenging situation.
Following EPPO PP1/278 (1) *Principles of zonal data production and evaluation*, most challenging situations are those where pest pressure is highest. In general, for fungicide, damp situation increases the disease pressure representing a worst case.
The data from Maritime EPPO zone are thus considered as supportive information to cover the South-East EPPO zone where no data were generated.

Comments of zRMS:

A total of 14 field efficacy trials have been submitted from the Maritime and North-East EPPO zones. All trials were conducted only in lettuce. Taking into account the EPPO extrapolation table for minor crops, cMSs are kindly asked to consider other species indicated in the GAP table on national level.
8 efficacy trials were carried out in **the Maritime EPPO climatic zone**. Taking into account PESSEV on plant (% area) in 4 out of 8 trials, A23109A achieved very high efficacy on level of 98,9%. In total of 8 trials PESINC on plant was >90% for the test product. The reference product presented significantly lower effectiveness with results of 90,1% (PESSEV on plant) and 88,1% (PESINC on plant).
6 trials were conducted in **the North-East EPPO zone**. Very high control has been noted in the Polish trials. Based on PESSEV and PESINC on plant, the mean efficacy was >90% in the most assessments. A23109A was

significantly superior compared to the reference product.
No efficacy trials have been submitted from **the South-East EPPO climatic zone**. The cMS Slovakia is kindly asked to extrapolate trials from other EPPO zones and consider this use on national level.

3.2.3.2 Efficacy against *Peronospora destructor* on onion

A total of 13 trials were carried out to evaluate the efficacy of A23109A for the control of *Peronospora destructor* in onion.

Efficacy data for *Peronospora destructor* are presented from 13 efficacy trials assessed. 13 trials have been conducted between 2019 and 2020 in Belgium (1x), Czech Republic (1x), France (2x), The Netherlands (5x) and Poland (4x).

In addition, a total of 3 supportive trials were carried out to evaluate the efficacy of A23109A for the control of *Peronospora destructor* in onion in 2021 in Poland (3x).

In these 16 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

Table 3.2-21 shows a summary of relevant disease severity and incidence assessments on onion for *Peronospora destructor.* The means presented in these tables were calculated from the assessment timings where the disease pressure was at least of 10% in the untreated check and where the standard performed as expected.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-21: Efficacy of A23109A at the proposed label rate against *Peronospora destructor* on onion

Target	Assessment type	Grouping	EPPO zone	Number of trials; ~~Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control							
							A23109 [A] (EXF16956C) at 0.5 L PR/ha		Standard INFINITO 687.5 SC at 1.6 L PR/ha		Standard Amistar 250 SC at 0.75 L PR/ha		Standard Amistar 250 SC at 1 L PR/ha	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora destructor (PERODE)	% PESSEV on leaf	~~All assessments~~	~~MAR~~	~~n=4; N=20~~	~~47.9~~	~~13.0-82.7~~	~~80.6~~	~~48.9-100~~	~~31.3~~	~~0.0-63.5~~	-	-	-	-
			~~NE~~	~~n=3; N=6~~	~~36.9~~	~~10.2-99.5~~	~~68.6~~	~~48.2-95.9~~	~~22.1~~	~~2.8-41.3~~	-	-	-	-
			~~NE (supportive trials)~~	~~n=3; N=10~~	~~32.2~~	~~9.7-92.8~~	~~86.1~~	~~69.5-96.2~~	-	-	~~68.5~~	~~50.4-86.2~~	~~67.3~~	~~45.8-90.7~~
		After 1 appl.	MAR	n=2; ~~N=2~~	25.4	15.8-35.0	74.3	54.6-94.0	55.0	49.2-60.9	-	-	-	-
			NE	n=1; ~~N=1~~	42.6	-	95.9	-	18.3	-	-	-	-	-
			NE (supportive trials)	n=1	13.9	-	96.2	-	-	-	59.2	-	52.7	-
		After 2 appl.	MAR	n=3; ~~N=4~~	~~37.4~~ 43.0	~~20.6~~ 24.1-72.5	~~89.3~~ 86.1	66.8-100	~~37.5~~ 32.5	13.7-47.6 ~~52.3~~	-	-	-	-
			NE	n=2; ~~N=2~~	12.7	10.2-15.2	65.5	53.4-77.6	35.7	30.1-41.3	-	-	-	-
			NE (supportive trials)	n=3; ~~N=5~~	~~17.3~~ 22.4	~~9.7~~ 13.4-33.0	~~89.2~~ 85.5	80.1-91.3 ~~95.7~~	-	-	~~71.7~~ 65.9	56.5-76.6 ~~86.2~~	~~71.1~~ 65.7	54.3- 83.9 ~~90.7~~
	% Overall disease on leaves per plot	~~All assessments~~	~~MAR~~	~~n=7; N=19~~	~~67.3~~	~~31.2-100~~	~~83.5~~	~~38.7-100~~	~~36.3~~	~~2.5-87.9~~	-	-	-	-
		After 1 appl.	MAR	n=3; ~~N=4~~	~~68.5~~ 72.1	52.6-90.0	~~87.0~~ 82.6	57.8-99.9 ~~100~~	~~29.1~~ 31.5	2.5-46.1	-	-	-	-
		After 2 appl.	MAR	n=3; ~~N=4~~	~~50.2~~ 55.1	31.2-86.3	~~84.9~~ 79.9	40.3-100	~~50.7~~ 38.3	14.3-72.1 ~~87.9~~	-	-	-	-
	% PESINC on leaf	~~All assessments~~	~~MAR~~	~~n=6; N=29~~	~~73.8~~	~~9.9-100~~	~~76.9~~	~~13.9-100~~	~~31.8~~	~~0.0-100~~	-	-	-	-
			~~NE~~	~~n=4; N=14~~	~~73.8~~	~~16.1-100~~	~~69.8~~	~~15.0-100~~	~~38.9~~	~~0.0-77.0~~	-	-	-	-

Target	Assessment type	Grouping	EPPO zone	Number of trials~~; Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control							
							A23109 [A] (EXF16956C) at 0.5 L PR/ha		Standard INFINITO 687.5 SC at 1.6 L PR/ha		Standard Amistar 250 SC at 0.75 L PR/ha		Standard Amistar 250 SC at 1 L PR/ha	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
			~~NE (supportive trials)~~	~~n=3; N=14~~	~~79.0~~	~~24.9-100~~	~~73.9~~	~~27.0-100~~	~~-~~	~~-~~	~~41.9~~	~~1.0-100~~	~~40.4~~	~~0.0-100~~
		After 1 appl.	MAR	n=5~~; N=7~~	~~54.4~~ 60.3	~~33.1~~ 39.9-91.5	~~85.0~~ 88.7	56.7-100	~~50.3~~ 46.9	10.2-100	-	-	-	-
			NE	n=4~~; N=6~~	~~71.2~~ 86.4	~~26.8~~ 59.0-100	~~76.0~~ 64.3	28.9-84.9 ~~100~~	~~31.0~~ 23.1	0.3- 64.2 ~~67.6~~	-	-	-	-
			NE (supportive trials)	n=3~~; N=4~~	~~82.1~~ 88.1	~~64.2~~ 73.3-98.0	~~79.1~~ 72.2	67.6-74.5 ~~100~~	-	-	~~60.9~~ 47.9	9.2- 80.7 ~~100~~	~~57.3~~ 43.1	7.1-75.4 ~~100~~
		After 2 appl.	MAR	n=3~~; N=6~~	~~78.3~~ 84.3	~~59.0~~ 76.0-100	~~83.9~~ 84.6	~~59.9~~ 66.3-99.7	~~27.2~~ 26.9	1.1-49.2	-	-	-	-
			NE	n=2~~; N=2~~	91.6	85.1-98.0	68.2	55.1-81.3	38.3	10.2-66.3	-	-	-	-
			NE (supportive trials)	n=3~~; N=4~~	~~93.8~~ 98.3	~~80.0~~ 95.0-100	~~66.4~~ 66.5	64.0-71.2	-	-	~~32.6~~ 29.3	3.0-43.2	~~34.2~~ 32.3	7.0-49.0

Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the mean efficacy of standards Infinito at 1.6 L PR/ha and Amistar 250 SC against *Peronospora destructor* on onion. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance.

The data also demonstrated that there was no difference in the performance of A23109A when trial data was grouped as presented in Table 3.2-21.

Efficacy against *Peronospora destructor* on Bulb vegetables

According to EPPO extrapolation Table 14/20180: "Extrapolation table for effectiveness of fungicides►Diseases on Allium vegetables", the presented efficacy data against *Peronospora destructor* on the indicator crop onion can be extrapolated to the targeted crops: garlic, shallot, spring, welsh and green onion under field conditions.

Extract from EPPO extrapolation table 14/20180: Bulb vegetables (Allium vegetables)

Pathogen species	Disease group name	Indicator crops	Extrapolation to other crops
Peronospora destructor PERODE	Downy mildew of onion	Any allium ALLSS	All Allium ALLSS

ALLCE Onion *Allium cepa*, ALLAS Shallots *Allium cepa Aggregatum* types, ALLAH Silverskin onions *Allium ampeloprasum* f. *holmense*, ALLFI Welsh onion (Spring onion, Bunching onion) *Allium fistulosum*, ALLSC Chives *Allium schoenoprasum*, ALLSA Garlic *Allium sativum*, ALLPO Leek *Allium porrum*

In addition, according to EPPO PP1/241(2) *Guidance on comparable climates*, even when climatic conditions are not comparable, use of the data may still be acceptable, as it may be possible to argue that the identified differences represent a more challenging situation.
Following EPPO PP1/278 (1) *Principles of zonal data production and evaluation*, most challenging situations are those where pest pressure is highest. In general, for fungicide, damp situation increases the disease pressure representing a worst case.
The data from Maritime EPPO zone are thus considered as supportive information to cover the South-East EPPO zone where no data were generated.

Comments of zRMS:

A total of 16 field efficacy trials have been submitted from the Maritime and North-East EPPO zones. All trials were conducted only in onion. Taking into account above EPPO extrapolation table 14/20180 and your own requirements, cMSs are kindly asked to consider the other species indicated in the GAP table on national level.
9 efficacy trials were carried out in **the Maritime EPPO climatic zone**. Based on PESSEV on plant, A23109A achieved efficacy on level of 74,3% after 1 application following appearance of disease and 88,3% after 2 applications. High results were visible also in case of PESINC parameter (>80%). The test product have been significantly superior compared to the reference product. The mean efficacy of Infinito 687,5 SC was <60% in all assessments.
7 efficacy trials have been presented for **the North-East zone**. Based on PESSEV on plant, A23109A had high level of control after one application (95,9% in 1 trial). Medium to high control was presented after 2 applications in 5 out of 7 trials (65,5% in 2 trials and 89,2% in 3 trials). The reference product had significantly lower results (<60%).
No efficacy trials were available in **the South-East zone**. The cMS Slovakia is kindly asked to consider extrapolation of results from the North-East or Maritime EPPO zones and accept this use on national level.

3.2.3.3 Efficacy against *Phytophthora porri* on leek

A total of 9 trials were carried out to evaluate the efficacy of A23109A for the control of *Phytophthora porri* in leek.

Efficacy data for *Phytophthora porri* are presented from 9 efficacy trials assessed. 9 trials have been conducted between 2019 and 2020 in Belgium (4x), France (4x) and The Netherlands (1x).

In these 9 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

Table 3.2-22 shows a summary of relevant disease severity and incidence assessments on leek for *Phytophthora porri*. The means presented in these tables were calculated from the assessment timings where the disease pressure was at least of 5% in the untreated check and where the standard performed as expected.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-22: Efficacy of A23109A at the proposed label rate against *Phytophthora porri* on leek

Target	Assessment type	Grouping	EPPO zone	Number of trials; ~~Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control			
							A23109A at 0.5 L PR/ha		Standard Infinito 687.5 SC at 1.6 L PR/ha	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Phytophtora porri (PHYTPO)	PESSEV % disease on leaves per plot	~~All assessments~~	MAR	~~n=9; N=43~~	~~22.1~~	~~4.8-78.8~~	~~**60.1**~~	~~0-100~~	~~52.9~~	~~0-100~~
		After 1 appl.		n=5~~; N=5~~	8.6	4.8-16.6	**74.9**	56.8-100	53.5	13.4-97.6
		After 2 appl.		n=6~~; N=11~~	~~12.4~~ 16.1	5.0-36.1	~~59.7~~ **60.9**	~~20.0-100~~ 25.0-99.1	64.7	25.0- ~~99.1~~ ~~100~~
	PESINC % infected leaves	~~All assessments~~		~~n=9; N=44~~	~~60.1~~	~~4.8-100~~	~~**71.8**~~	~~12.5-100~~	~~70.1~~	~~1.9-100~~
		After 1 appl.		n=7~~; N=7~~	41.6	13.5-77.0	**82.2**	28.6-100	75.9	14.3-100
		After 2 appl.		n=7~~; N=13~~	~~63.6~~ 64.3	~~21.0-96.0~~ 39.0-88.0	~~**82.2**~~ **77.3**	12.5-100	~~83.7~~ 81.0	32.5-100

Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was, in most of the cases, superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Phytophthora porri* on leek.
Looking only at the means after 2 applications following disease appearance, data demonstrated that the efficacy of A23109A at the proposed rate of 0.5 L PR/ha was similar or inferior to the efficacy of standard Infinito at 1.6 L PR/ha against *Phytophthora porri* on leek.

Efficacy against *Phytophthora porri* on Bulb vegetables

According to EPPO extrapolation Table 14/20180: "Extrapolation table for effectiveness of fungicides►Diseases on Allium vegetables", the presented efficacy data against *Phytophthora porri* on the indicator crop leek can be extrapolated to the targeted crops: garlic, shallot, spring, welsh and green onion under field conditions.

Extract from EPPO extrapolation table 14/20180: Bulb vegetables (Allium vegetables)

Pathogen species	Disease group name	Indicator crops	Extrapolation to other crops
Phytophthora porri PHYTPO	-	Leek ALLPO	Onion ALLCE Welsh Onion ALLFI, Chives ALLSC

ALLCE Onion *Allium cepa*, ALLAS Shallots *Allium cepa Aggregatum* types, ALLAH Silverskin onions *Allium ampeloprasum* f. *holmense*, ALLFI Welsh onion (Spring onion, Bunching onion) *Allium fistulosum*, ALLSC Chives *Allium schoenoprasum*, ALLSA Garlic *Allium sativum*, ALLPO Leek *Allium porrum*

In addition, according to EPPO PP1/241(2) *Guidance on comparable climates*, even when climatic conditions are not comparable, use of the data may still be acceptable, as it may be possible to argue that the identified differences represent a more challenging situation.
Following EPPO PP1/278 (1) *Principles of zonal data production and evaluation*, most challenging situations are those where pest pressure is highest. In general, for fungicide, damp situation increases the disease pressure representing a worst case.
The data from Maritime EPPO zone are thus considered as supportive information to cover the South-East and North-East EPPO zones where no data were generated.

Comments of zRMS:

A total of 9 field efficacy trials have been submitted in **the Maritime EPPO climatic zone**. All trials were carried out only on leek. Taking into account above EPPO extrapolation table 14/20180 and their own requirements, cMSs are kindly asked to consider other species indicated in the GAP table on national level.
A23109A applied at dose rate of 0,5 l/ha achieved medium level of control and was superior compared to Infinito 687,5 SC. Based on PESSEV on plant, the mean efficacy was 74,9% after 1 application following appearance of disease in 5 out of 9 trials. The results of test and reference products were significant lower after 2 applications. However based on PESINC parameter, the mean efficacy is comparable after 1 and 2 applications. In opinion of zRMS, it should be noted in the product label that A23109A is effective for control of *Phytophthora porri* on medium level.
No efficacy trials have been presented from other EPPO zones. The cMS Slovakia is kindly asked to use extrapolation and consider these uses on national level. Because no trials from the North-East zone are available, this use can not be accepted in Poland.

3.2.3.4 Efficacy against *Peronospora* spp. on brassica crops

A total of 11 trials were carried out to evaluate the efficacy of A23109A for the control of *Peronospora* spp. in brassica crops.

Efficacy data for *Peronospora* spp. are presented from 11 efficacy trials assessed on brassica crops (4x cauliflower, 2x head cabbage, 2x cabbage, 1x Peking cabbage, 1x turnip and 1x *Brassica* sp.). 11 trials have been conducted between 2019 and 2020 in Belgium (1x), Germany (2x), The Netherlands (2x) and Poland (6x).

In these 11 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

Table 3.2-23 shows a summary of relevant disease severity and incidence assessments on brassica crops for *Peronospora* spp. The means presented in these tables were calculated from the assessment timings where the disease pressure was at least of 5% in the untreated check and where the standard performed as expected.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-23: Efficacy of A23109A at the proposed label rate against *Peronospora* spp. on brassica crops

Target	Assessment type	Grouping	EPPO zone	Number of trials; ~~Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control			
							A23109A at 0.5 L PR/ha		Standard Infinito 687.5 SC at 1.6 L PR/ha	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora spp. (1PEROG)	% PESSEV on leaf	~~All assessments~~	~~MAR~~	~~n=5; N=6~~	~~22.4~~	~~5.9-75.6~~	~~**80.6**~~	~~51.1-91.3~~	~~66.9~~	~~55.0-80.8~~
			~~NE~~	~~n=2; N=4~~	~~18.6~~	~~9.6-27.1~~	~~**99.1**~~	~~98.3-100.0~~	~~83.8~~	~~67.5-99.0~~
		After 2 appl.	MAR	n=1~~; N=2~~	~~16.0~~ 13.7	~~13.7-18.3~~	~~**85.2**~~ **90.0**	~~80.4-90.0~~	~~66.4~~ 70.5	~~62.3-70.5~~
			NE	n=1	17.6	-	**100**	-	69.8	-
		other groups	MAR	n=4	25.6	5.9-75.6	**78.3**	51.1-91.3	67.1	55.0-80.8
			NE	n=2	23.6	20.0-27.1	**99.0**	99.0-99.0	83.3	67.5-99.0
	% PESINC on plant	~~All assessments~~	~~MAR~~	~~n=2; N=3~~	~~45.5~~	~~16.8-86.1~~	~~**71.7**~~	~~56.6-87.2~~	~~53.3~~	~~42.4-61.0~~
		~~All assessments~~	~~NE~~	~~n=6; N=13~~	~~24.1~~	~~5.5-37.0~~	~~**95.4**~~	~~75.0-100.0~~	~~82.9~~	~~50.8-100.0~~
		After 1 appl.	NE	n=3	22.5	5.7-37.0	**90.8**	75.0-100.0	73.8	50.8-100.0
		other groups	NE	n=3	25.7	19.4-28.9	**100**	100-100	92.0	76.0-100
	% PESINC on leaf	~~All assessments~~	~~MAR~~	~~n=5; N=8~~	~~88.0~~	~~51.5-100.0~~	~~**46.7**~~	~~6.5-87.2~~	~~41.4~~	~~9.2-68.8~~
			~~NE~~	~~n=2; N=8~~	~~44.25~~	~~4.5-100.0~~	~~**90.5**~~	~~73.6-100.0~~	~~78.0~~	~~47.0-100.0~~
		After 1 appl.	MAR	n=1	99.6	-	**12.2**	-	13.1	-
			NE	n=2~~; N=2~~	21.4	11.9-30.9	**97.9**	95.8-100.0	96.9	93.8-100.0
		After 2 appl.	MAR	n=2~~; N=3~~	~~93.6~~ 90.5	81.3- 99.6 ~~100.0~~	~~**52.0**~~ **42.7**	6.5-78.9	~~45.0~~ 37.3	9.4-65.2
			NE	n=2~~; N=2~~	61.7	24.2-99.2	**86.8**	73.6-100.0	64.1	52.7-75.5
		other groups	MAR	n=3	74.5	51.5-86.1	**63.1**	28.6-87.2	57.8	43.6-68.8
			NE	n=3	61.1	34.8-100	**84.7**	79.5-93.1	67.4	47.0-83.0

Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Peronospora* spp. on brassica crops. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance.

The data also demonstrated that there was no difference in the performance of A23109A when trial data was grouped as presented in Table 3.2-23.

Efficacy against *Hyaloperonospora parasitica* on brassica crops

Considering the use in crops belonging to Brassica vegetables, the efficacy of A23109A was demonstrated on head cabbage (head brassicas), cauliflower and Romanesco brassica (flowerhead brassicas), Chinese/Peking cabbage (leafy brassicas) and also on turnip (root / Stem brassicas).

According to EPPO extrapolation Table 14/20176: "Extrapolation table for effectiveness of fungicides►Diseases on vegetable brassicas", the presented efficacy data against *Peronospora* spp. and *Hyaloperonospora parasitica* on the indicator crops flowerhead brassicas: cauliflower and Romanesco brassica and also on lettuce and onion can be extrapolated to the targeted crops belonging to leafy brassicas: curly kale, Kale, leafy brassica, red Mustard, pe-tsai under field conditions.

Extract from EPPO extrapolation table 14/20176: Vegetable brassicas

Pathogen species	Disease group name	Indicator crops	Extrapolation to other crops	Data from these crops can support the indicator crops (Reduced data)
Peronospora parasitica PEROPA *Hyaloperonospora brassicae* HPERBR	Downy mildews	Flower head brassicas (any crop where use is on seedlings)	Leafy brassicas	Lettuce LACSS Onion ALLCE, Oilseed rape BRSNN

Flowerhead brassicas: (Flowering brassicas); BRSOB Cauliflower *B. oleracea* var. botrytis subvar. cultiflora, BRSOK Broccoli, Calabrese, *cima dirapa B. oleracea* var. italic; BRSAG Chinese kale (Chinese broccoli) *Brassica alboglabra*.

Leafy brassicas: BRSOA kale *Brassica oleracea* var. acephala including collards and curly kale *Brassica oleracea* var. sabellica BRSOC; BRSPK Peking cabbage *Brassica pekinensis*; BRSCH B. chinensis [synonyms: *B. rapa* subsp. chinensis; *B. chinensis* var. parachinensis; *B. parachinensis*]; BRSNO Mitzuna *Brassica rapa* subsp. nipposinica; BRSPE Komatsuna *Brassica perviridis*; SINSP mustard *Sinapis* sp. (red, white, brown, black); DIPER Rockets *Diplotaxis erucoides* and ERUVE *Eruca vesicaria* subsp. sativa.

Head brassicas: (Head) Cabbage (includes red BRSOR Brassica oleracea var. capitata f. rubra and white Brassica oleracea var. capitata f. alba BRSOL); BRSON Brassica oleracea var. capitata f. conica; BRSOF Brussels sprouts B. oleracea var. gemmifera; BRSOS Savoy cabbage B. oleracea var. sabauda.

Root / Stem brassicas and radish crops: BRSNA Swedes B. napus var. napobrassica, BRSRR Turnips B. rapa, RAPSS Radishes Raphanus spp. (including red, white, Black Spanish radish); RAPSR Small radish Raphanus sativus; RAPSN Garden radish Raphanus sativus var. niger; ARWLA Horseradish *Armoracia lapathifolia*; BRSOG Kohlrabi, *B. oleracea* var. gongylodes

In addition, the presented efficacy data against *Peronospora* spp. and *Hyaloperonospora parasitica* on head brassicas: cabbage, flowerhead brassicas: cauliflower and Romanesco brassica and Leafy brassicas: Peking cabbage can be extrapolated to the targeted crops of the same crop groups: Brussels sprouts and Savoy cabbage (head brassicas), broccoli (flowerhead brassicas), curly kale, Kale, leafy brassica, red Mustard, pe-tsai (leafy brassicas) under field conditions.

This is in line with the Dutch Board for the Authorisation of Plant Protection Products and Biocides, document "Chapter 8 efficacy: Appendix E: Extrapolation possibilities - versie2.0" that states that the efficacy results obtained on cauliflower may be extrapolated to production fields of broccoli, Brussels sprouts and head cabbage. Downy mildew is not a problem in other cabbage crops in The Netherlands. See https://english.ctgb.nl/plant-protection/documents/assessment-framework-ppp/2016/09/30/8.-appendices-dutch-extrapolation-document-in-english-em2.1

In addition, according to EPPO PP1/241(2) *Guidance on comparable climates*, even when climatic conditions are not comparable, use of the data may still be acceptable, as it may be possible to argue that the identified differences represent a more challenging situation.
Following EPPO PP1/278 (1) *Principles of zonal data production and evaluation*, most challenging situations are those where pest pressure is highest. In general, for fungicide, damp situation increases the disease pressure representing a worst case.
The data from Maritime EPPO zone are thus considered as supportive information to cover the South-East EPPO zone where no data were generated.

Comments of zRMS:

A total of 11 field efficacy trials have been submitted in the Maritime and North-East EPPO climatic zones. These trials were conducted in Brassica vegetables: cabbage, peking cabbage, cauliflower and turnip.
5 efficacy trials were available in **the Maritime zone** (3 trials in cauliflower, 1 trial in cabbage and 1 trial in turnip). Taking into account PESSEV on plant, limited number of results has been presented after 2 applications. A23109A achieved high efficacy (90%) in only 1 trial (on cabbage) and it was superior compared to the reference product. Based on PESINC parameter, significant lower results are visible either for test and reference products. In opinion of zRMS the number of submitted dataset is insufficient. However, the cMSs are kindly asked to consider these uses on national level.
6 efficacy trials were carried out in **the North-East zone** (2 trials in cabbage, 1 trial in head cabbage, 1 trial in peking cabbage, 1 trial in *Brassica* sp. and 1 trial in cauliflower). However, only 1 result after 2 application has been showed for cabbage in case of PESSEV assessment. A23109A achieved very high efficacy but in limited number of trials. Due to insufficient number of trials for head cabbage, this use can not be accepted in Poland.
No efficacy trials have been submitted in **the South-East zone**. The cMS Slovakia is kindly asked to extrapolate trials from other EPPO zones and consider this use on national level.
Taking into account the extrapolation table for minor crops, cMSs are kindly asked to consider other species indicated in the GAP table on national level.

3.2.3.5 Efficacy against *Peronospora farinosa f. sp. spinaciae* on spinach

A total of 5 trials were carried out to evaluate the efficacy of A23109A for the control of *Peronospora farinosa* f. sp. *spinaciae* in spinach.

Efficacy data for *Peronospora farinosa* f. sp. *spinaciae* are presented from 5 efficacy trials assessed. 5 trials have been conducted between 2019 and 2020 in Belgium (2x), France (1x) and The Netherlands (2x).

In these 5 trials, the disease level of infection in untreated plots was adequate to validate the trials and reliably assess the efficacy of A23109A.

Table 3.2-24 shows a summary of relevant disease severity and incidence assessments on spinach for *Peronospora farinosa* f. sp. *spinaciae*. The means presented in these tables were calculated from the assessment timings where the disease pressure was at least of 5% in the untreated check and where the standard performed as expected.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-24: Efficacy of A23109A at the proposed label rate against *Peronospora farinosa* f. sp. *spinaciae* on spinach

Target	Assessment type	Grouping	EPPO zone	Number of trials; ~~Number of assessments~~	Infestation of the untreated control (% pest incidence or % pest severity)		% control			
							A23109A at 0.5 L PR/ha		Standard INFINITO 687.5 SC at 0.6 L PR/ha	
					Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora farinosa spinaciae (PEROFS)	% PESSEV on leaf	~~All assessments~~	MAR	~~n=4; N=11~~	~~9.0~~	~~4.5-16.1~~	~~**81.5**~~	~~45.3-100.0~~	~~76.1~~	~~48.9-99.7~~
		After 1 appl.		n=2~~; N=6~~	~~9.0~~ 12.0	~~6.1-13.0~~ 10.9-13.0	~~99.9~~ **99.8**	99.5-100.0	~~89.8~~ 91.5	~~65.0-99.7~~ 83.7-99.3
		After 2 appl.		n=1~~; N=2~~	~~13.8~~ 16.1	~~11.4-16.1~~	~~**50.4**~~ **55.5**	~~45.3-55.5~~	~~56.2~~ 54.8	~~54.8-57.6~~
		other groups		n=1	4.5	-	**69.7**	-	65.2	-
	% PESINC on plant	~~All assessments~~		~~n=3; N=9~~	~~44.2~~	~~11.0-92.7~~	~~**53.8**~~	~~33.9-72.7~~	~~52.5~~	~~23.2-90.9~~
		After 1 appli		n=1	63.0	-	**44.4**	-	49.2	-
		After 2 appl.		n=1~~; N=2~~	~~65.5~~ 75.0	~~56.0-75.0~~	~~**41.6**~~ **49.3**	~~33.9-49.3~~	~~34.3~~ 45.3	~~23.2-45.3~~
		other groups		n=3	40.5	11.0-92.7	**60.5**	37.3-72.7	64.4	50.4-90.9
	% PESINC on leaf	~~All assessments~~		~~n=4; N=14~~	~~39.5~~	~~8.4-67.1~~	~~**79.9**~~	~~38.5-100.0~~	~~72.1~~	~~34.1-99.8~~
		After 1 appl.		n=2~~; N=6~~	~~59.1~~ 65.5	~~49.2~~ 63.5-67.1	~~**99.8**~~ **99.5**	99.2-~~100.0~~ 99.8	~~86.9~~ 85.8	~~66.4~~ 71.7-99.8
		After 2 appl.		n=1~~; N=2~~	~~54.5~~ 63.5	~~45.5-63.5~~	**38.6**	~~38.5-38.6~~	~~36.4~~ 38.6	~~34.1-38.6~~
		other groups		n=3	15.4	10.8-21.8	**90.4**	71.1-100	83.9	57.4-98.9

Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Peronospora farinosa* f. sp. *spinaciae* on spinach. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance.

The data also demonstrated that there was no difference in the performance of A23109A when trial data was grouped as presented in Table 3.2-24.

In addition, according to EPPO PP1/241(2) *Guidance on comparable climates*, even when climatic conditions are not comparable, use of the data may still be acceptable, as it may be possible to argue that the identified differences represent a more challenging situation.
Following EPPO PP1/278 (1) *Principles of zonal data production and evaluation*, most challenging situations are those where pest pressure is highest. In general, for fungicide, damp situation increases the disease pressure representing a worst case.
The data from Maritime EPPO zone are thus considered as supportive information to cover the South-East and North-East EPPO zones where no data were generated.

Comments of zRMS:

5 field efficacy trials have been submitted in **the Maritime EPPO climatic zone**. All trials were carried out in spinach. The assessment was provided for PESSEV and PESINC on leaf. Limited number of trial results were available but these results are variable. Based on PESSEV assessment, A23109A achieved high effectiveness after 1 application following appearance of disease (99,8%). Very low result was noted after 2 applications but in only 1 trial. No significant differences between test and reference products have been observed. In opinion of zRMS, number of trial results is insufficient to consider this use. However, the cMSs are kindly asked to make their own decision.
No efficacy trials have been presented from other EPPO zones. Moreover, no trials on common purslane, chards and beet leaves were carried out in any EPPO zones. The cMSs are kindly asked to consider these uses on national level.

3.2.3.6 Minor use

Minor uses are those uses of plant protection products (defined in relation to crops and pests) in which either the crop is considered of low economic importance at national level (minor crop), or the pest is of limited importance on a major crop (minor pest). It should be noted that a minor use in one country may be a major use in another country (each country is responsible for defining its minor uses).

For details on major and minor status of intended crops in intended Member States, please refer to Table 3.2-4.

3.2.3.1 Yield (and relevant quality indicators), from efficacy trials (in the presence of challenging pest populations)

3.2.3.1.1 Lettuce

A summary of the quality data from efficacy trials is presented in Table 3.2-25.

A total of 10 trials were carried out between 2019 and 2020 in Belgium (2x), France (2x), Germany (1x) and Poland (5x). The objective was to confirm the quality response of A23109A in presence of disease.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-25: Quality data of A23109A in efficacy trials on lettuce in presence of *Bremia lactucae*

Assessment type	EPPO zone	Number of trials; ~~Number of assessments~~	Untreated control		A23109A at 0.5 L PR/ha		Standard Revus at 0.6 L PR/ha	
			Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
			Absolute figures (kg/plant)		Absolute figures (kg/plant)			
Weight of marketable plants	MAR	n=5; ~~N=5~~	0.183	0.000-0.500	0.371	0.040-0.600	0.326	0.040-0.600
	NE	n=5; ~~N=5~~	0.181	0.000-0.400	0.672	0.262-1500	0.525	0.227-1.100
			Absolute figures (%)		Absolute figures (%)			
Percentage of marketable plants	MAR	n=5; ~~N=5~~	32.6	0-86.3	64.3	10.0-100	60.9	7.0-97.9
	NE	n=5; ~~N=5~~	50.500	0-100	97.9	89.4-100	89.900	72.7-100

A23109A at the proposed label rate of 0.5 L PR/ha had no negative effects on the lettuce quality in presence of disease (*Bremia lactucae*). Quality increases were even observed over the untreated.

3.2.3.1.2 Onion

A summary of the yield data from efficacy trials is presented in Table 3.2-26.

A total of 13 trials were carried out between 2019 and 2021 in Czech Republic (1x), France (1x), The Netherlands (5x) and Poland (6x). The objective was to confirm the yield response of A23109A in presence of disease.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-26: Marketable yield effect of A23109A in efficacy trials on onion (in presence of *Peronospora destructor*)

Assessment type	EPPO zone	Number of trials; ~~Number of assessments~~	Untreated control Absolute figures (t/ha)		% Yield relative to the untreated 100%				
					A23109A at 0.5 L PR/ha		Standard*		Standard details
			Mean	Min & Max	Mean	Min & Max	Mean	Min & Max	
Marketable yield	MAR	n=7; ~~N=7~~	34.8	21.3-60.9	137.6	108.9-196.6	119.7	102.0-141.1	Infinito 687.5 SC at 1.6 L PR/ha
	NE	n=3; ~~N=3~~	33.2	25.2-46.2	127.3	111.9-137.2	101.6	100.4-103.3	Infinito 687.5 SC at 1.6 L PR/ha
	NE (supportive)	n=3; ~~N=3~~	35.0	23.1-42.2	126.2	102.4-171.8	121.4 124.0	101.2-160.8 100.4-168.4	Amistar 250 SC at 0.75 L PR/ha Amistar 250 SC at 1 L PR/ha

A23109A at the proposed label rate of 0.5 L PR/ha had no negative effects on onion marketable yield in presence of disease (*Peronospora destructor*). In fact, marketable yield increase was observed over the untreated (26.2-37.6%).

3.2.3.1.3 Leek

A summary of the yield and quality data from efficacy trials is presented in Table 3.2-27.

A total of 8 trials were carried out between 2019 and 2020 in Belgium (4x) and France (4x). The objective was to confirm the yield and quality response of A23109A in presence of disease.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-27: Yield and quality effect of A23109A in efficacy trials on leek (in presence of *Phytophthora porri*)

Assessment type	EPPO zone	Number of trials; ~~Number of assessments~~	Untreated control Absolute figures (t/ha)		A23109A at 0.5 L PR/ha		Standard INFINITO 687.5 SC at 1.6 L PR/ha	
			Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
		Absolute figures (t/ha)	% Yield relative to the untreated 100%					
Marketable yield	MAR	n=8; ~~N=8~~	38.6	26.4-54.1	118.7	100.8-141.7	121.9	101.0-166.9
		Absolute figures (%)						
PLANT PART CLASS 0	MAR	n=1	0.5	-	40.8	-	49.0	-
PLANT PART CLASS 1	MAR	n=1	12.8	-	59.2	-	50.5	-
PLANT PART CLASS 2	MAR	n=1	86.8	-	0	-	0.5	-
		Absolute figures (%)	Absolute figures (%)					
PLANT PART CLASS 0	MAR	n=1; N=1	0.5	-	40.8	-	49.0	-
PLANT PART CLASS 1	MAR	n=1; N=1	12.8	-	59.2	-	50.5	-
PLANT PART CLASS 2	MAR	n=1; N=1	86.8	-	0	-	0.5	-

A23109A at the proposed label rate of 0.5 L PR/ha had no negative effects on leek marketable yield and quality in presence of disease (*Phytophthora porri*).

3.2.3.1.4 Brassica

A summary of the yield data from efficacy trials is presented in Table 3.2-28.

A total of 6 trials were carried out between 2019 and 2020 in Belgium (1x), Germany (2x) and Poland (3x). The objective was to confirm the yield response of A23109A in presence of disease.

It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

Table 3.2-28: Marketable yield effect of A23109A in efficacy trials on brassica crops in presence of *Peronospora* spp.

Target	Assessment type	EPPO zone	Number of trials; ~~Number of assessments~~	Untreated control Absolute figures (t/ha)		% control			
						A23109A at 0.5 L PR/ha		Standard Infinito 687.5 SC at 1.6 L PR/ha	
				Mean	Min & Max	Mean	Min & Max	Mean	Min & Max
Peronospora spp. (1PEROG)	Marketable yield	MAR	n=3; ~~N=3~~	62.5	53.1-69.5	100.4	99.7-100.8	98.7	97.0-100.6
		NE	n=3; ~~N=3~~	49.6	11.8-83.8	142.3	102.3-175.1	135.4	104.0-161.6

A23109A at the proposed label rate of 0.5 L PR/ha had no negative effects on brassica crops marketable yield in presence of disease (*Peronospora* spp.). In fact, marketable yield increase was observed over the untreated up to 42.3%.

Comments of zRMS:

Yield has been evaluated in the field efficacy trials. No special selectivity trials were carried out in any EPPO zones. A23109A at dose rate of 0,5 l/ha had not negative impact on lettuce, onion, leek and brassica vegetables. Yield increase was observed in the submitted trials.

3.2.3.2 Summary and conclusion

A23109A contains 30 g/L OXTP + 174.4 g/L MFX (EU definition only R enantiomer or 180 g/L MFX global definition R+S enantiomer) and brings at its targeted rate of 0.5 L PR/ha, 15 g/ha OXTP + 87.2 - 90 g/ha MFX (EU - global MFX definition).
It is to note that the rate of MFX in A23109A based on EU MFX definition is 87.2 g ai/ha although it is indicated 90 g ai/ha in the trial reports and the tables of results, which is calculated based on global definition (R+S enantiomer).

A total of 14 field trials were carried out to evaluate the efficacy of A23109A for the control of the *Bremia lactucae* on lettuce. These 14 trials have been conducted in Maritime EPPO zone (Belgium, Germany and France) and North-East EPPO zone (Poland) between 2019 and 2020.
A23109A was tested at 0.5 L PR/ha.
Data demonstrated that the efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the efficacy of standard Revus (A12946B) at 0.6 L PR/ha against *Bremia lactucae* on lettuce. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance in the North-East EPPO zone.

A total of 16 field trials (13 + 3 supportive Polish trials) were carried out to evaluate the efficacy of A23109A for the control of the *Peronospora destructor* on onion. These 16 trials have been conducted in Maritime EPPO zone (Belgium, Czech Republic, France and The Netherlands) and in the North-East EPPO zone (Poland) between 2019 and 2021.
A23109A was tested at 0.5 L PR/ha.
Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Peronospora destructor* on onion. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance.

A total of 9 field trials were carried out to evaluate the efficacy of A23109A for the control of the *Phytophthora porri* on leek. These 9 trials have been conducted in Maritime EPPO zone (Belgium, France and The Netherlands) between 2019 and 2020.
A23109A was tested at 0.5 L PR/ha.

Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was, in most of the cases, superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Phytophthora porri* on leek. Looking only at the means after 2 applications following disease appearance, data demonstrated that the efficacy of A23109A at the proposed rate of 0.5 L PR/ha was similar or inferior to the efficacy of standard Infinito at 1.6 L PR/ha against *Phytophthora porri* on leek.

A total of 11 field trials were carried out to evaluate the efficacy of A23109A for the control of the *Peronospora* spp. on brassica crops. These 11 trials have been conducted Maritime EPPO zone (Belgium, Germany and The Netherlands) and in the North-East EPPO zone (Poland) between 2019 and 2020.
A23109A was tested at 0.5 L PR/ha.
Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Peronospora* spp. on brassica crops. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance.

A total of 5 field trials were carried out to evaluate the efficacy of A23109A for the control of the *Peronospora farinosa* f. sp. *spinaciae* on spinach. These 5 trials have been conducted Maritime EPPO zone (Belgium, France and The Netherlands) between 2019 and 2020.
A23109A was tested at 0.5 L PR/ha.
Data demonstrated that the mean efficacy of the A23109A at the proposed rate of 0.5 L PR/ha was superior to the mean efficacy of standard Infinito at 1.6 L PR/ha against *Peronospora farinosa* f. sp. *spinaciae* on spinach. This trend is well confirmed when considering only the efficacy achieved after the maximum number of two applications following disease appearance.

According to the presented results and in function of the target disease, the dose rates of 0.5 L PR/ha of A23109A provided an optimum overall control and should be considered as effective under a wide range of environmental conditions against the diseases for which activity of A23109A is claimed.

3.3 Information on the occurrence or possible occurrence of the development of resistance (KCP 6.3

The capacity of target pathogens to become resistant to fungicide treatments varies greatly with respect to the different fungicide classes when single site fungicides are compared to multi-site fungicides, and it varies also between different genera or species of target fungi comparing different single site fungicides.

In the following sections it is referred to the mode of action and mechanism of resistance for oxathiapiprolin and metalaxyl-M baseline sensitivity and cross resistance patterns for grapes and vegetable targets. General measures and specifics guidelines are proposed to prevent resistance development against oxathiapiprolin and metalaxyl-M.

Oxathiapiprolin (OSBPI fungicide class) (FRAC 49)

Oxathiapiprolin belongs to the chemical class of the piperidinyl thiazole – isooxazoline.

Oxathiapiprolin and fluoxapiprolin are the two members of the FRAC group 49 named Oxysterol binding protein homologue inhibitors (OSBPI). The OSBPI fungicides are not cross resistant to the other FRAC fungicide classes as for example CAA, PA or QoI. Oxathiapiprolin blocks the sterol-binding domain of an OSBP homologue, preventing it from picking up sterols and making the inter-membrane transfer. Inhibiting OSBP disrupts many further processes in the cell, such as signalling, maintaining cell membranes, and the formation of more complex lipids that are essential for the cell to survive.

Some lab studies were conducted to elucidate the mechanisms of resistance related to the OSBPI fungicide class. In the list below the amino acid changes are unified to the annotation of the oxathiapiprolin target protein of *P. infestans*.

P. capsici was recently used to generate lab mutants resistant to OSBPI either by spontaneous, UV or CRISPR/Cas9 approaches. Some point mutations in the oxysterol binding protein-related protein 1 (ORP1) were observed. In *P. capsici* ultraviolet mutagenesis mutants, L733W, S768I/F/K/Y, G770A/I/P/V/L, N837I/F/Y, G839W, P861H, L863W/F, and I877F/Y were detected.

P. sojae transformants were recovered using the CRISPR–Cas9 system. The following mutations were associated to high OSBPI resistance L733W, S768F, S768Y, N837Y, N837F, P861H, L863W, and I877Y

Some grape downy mildew isolates collected from field trials where oxathiapiprolin had been continuously used for 4 years showed resistance to OSBPI and harboured the following amino acid changes G770V, N837I and L863W.

The resistant alleles G770V and DG818/F819 were observed in *P. nicotianae* resistant mutants produced by UV radiation.

So far little is known about the possible fitness cost associated to resistance in field, however mutants harbouring G770V showed significantly reduced fitness in the lab.

The resistance risk for OSBPI is considered medium to high by FRAC.

Monitoring data has been established for the oomycetes P*lasmopara.viticola* in grapes, *Phytophthora infestans* in potatoes and *Bremia lactucae* in lettuce.

Metalaxyl-M (Phenylamide fungicide class) (FRAC 4)

Metalaxyl-M belongs to the phenylamides (PAs) (FRAC 4) which are a highly active class of fungicides specifically controlling plant pathogens of the Oomycetes (the downy mildews of the *Peronosporales* and *Sclerosporales*, as well as most members of the *Pythiales* (e.g., *Phytophthora* and *Pythium* spp.) and *Saprolegniales*[5]. Metalaxyl-M penetrates the plant tissue rapidly, is translocated acropetally within the plant and as all PAs inhibits rRNA biosynthesis (polymerase complex I) in the target pathogens. The use strategies for PAs have been well established. The presence of resistant subpopulations at varying proportions is well documented in several plant pathogen species of Oomycetes on a range of crops worldwide[6,7]. However, sensitive subpopulations have not disappeared, even though PA-containing products have been used continuously in similar quantities and intensities over the past 30 years. This strongly suggests that the recommended anti-resistance strategies are successful and that biological processes (e.g., sexual reproduction, fitness, winter survival) of the pathogens may contribute to equilibrate sensitivity in populations. Sampling and testing methods for resistance monitoring have been published through FRAC in 1992 and are still valid[8].

Sensitivity data to oxathiapiprolin (OSBPI fungicide class)

Monitoring data

Bioassay sensitivity monitoring conducted by Syngenta since 2015 showed the European population of *P. viticola* is largely sensitive to OSBPI. In total 388 *P. viticola* samples were analysed from 16 European countries since 2015. Samples showing decreased sensitivity to oxathiapiprolin was found at single locations in four European regions.

Molecular analysis conducted to the less sensitive populations highlighted the presence of G770V in a single population and L863W in the other less sensitive samples.

[5] Gisi, U. 2002. Chemical control of downy mildews. pp.119-159 in P.T.N.Spencer, U. Gisi, A. Lebeda, eds., Advances in Downy Mildew Research, Kluwer, Dordrecht.

[6] Gisi, U., Cohen, Y. 1996 Resistance to phenylamide fungicides: A case study with Phytophthora infestans involving mating type and race structure. Annual Review of Phytopathology34, 549-572.

[7] Gisi, U., Sierotzki, H. 2008. Fungicide modes of action and resistance in downy mildews. European Journal Plant Pathology 122: 157-167

[8] Sozzi, D., Schwinn, F.J., Gisi, U. 1992. Determination of the sensitivity of Phytophthora infestans to phenylamides: a leaf disc method. EPPO Bullettin 22: 306-309

Bioassay sensitivity monitoring conducted by Syngenta since 2015 showed the European population of *P. infestans* is largely sensitive to OSBPI. In total 302 *P. infestans* strains were analysed from 21 European countries from 2015 to 2020. No strains showing decreased sensitivity to oxathiapiprolin were monitored.

For *B. lactucae*, a total of 7 samples collected in 2019 from six European countries (Belgium, Spain, Greece, Italy, Portugal and Poland) were monitored. All samples were fully sensitive to oxathiapiprolin showing low EC50 values. No reports of *B. lactucae* decreased sensitivity to oxathiapiprolin have been reported so far.

For more details on monitoring data, please refer to the Biological Assessment Dossier, Annex Point IIIA 3.3 (KCP 6.3).

Mechanism of resistance to metalaxyl-M

The mechanism of resistance against metalaxyl-M and other PAs may involve one (or two) major gene(s) and potentially several minor genes. Therefore, there are no exhaustive molecular methods for the screening of the metalaxyl-resistance. Genetic studies to determine the nature of insensitivity to metalaxyl-M have involved crosses between insensitive and sensitive isolates of various *Phytophthora* sp. Segregation patterns of the trait among progeny revealed a range of insensitivity levels, with many intermediate between parental isolates[9]. Insensitivity is proposed to be conditioned by one or sometimes two incompletely dominant loci, called MEX1 and MEX2. Additional minor genes may also contribute to the level of insensitivity.
Recently, a sequencing approach for the determination of resistance against metalaxyl-M has been carried out[10]. The subunits of RNA polymerase I (RNApolI) were sequenced from sensitive and insensitive isolates and F1 progeny. Single nucleotide polymorphisms (SNPs) specific to insensitive field isolates were identified in the gene encoding the large subunit of RNApolI. In a survey of field isolates, SNP T1145A (Y382F) showed an 86% association with metalaxyl-M insensitivity. Isolates not showing this association belonged predominantly to one *P. infestans* genotype. The transfer of the 'insensitive' allele of RPA190 to a sensitive isolate yielded transgenic lines that were insensitive to metalaxyl-M. These results demonstrate that sequence variation in RPA190 contributes to insensitivity to metalaxyl-M in *P. infestans*.
For pathogens which undergo sexual recombination every winter, the genetic diversity of the primary inoculum is very high[11] and resistance is inherited according to Mendelian rules, i.e. all F1 progeny isolates are intermediate (i) in sensitivity. The proportion of sensitive, intermediate and resistant isolates in F2 progeny should then be 1 : 2 : 1 (theoretical). The sensitivity of field populations fluctuates from year to year and within the season. Sensitive, intermediate and resistant isolates can be detected in fields that have been treated with PAs or remained untreated and are often in a "dynamic equilibrium" with each other. In *Plasmopara viticola*, the proportion of sensitive isolates declines during the epidemics every year. Dynamics of resistance evolution are driven not only by the selection through PA fungicides; equally important are the Mendelian type of inheritance and the genetic background of resistance, as well as high fitness and rate of migration of isolates.

Evidence of resistance to metalaxyl-M

Metalaxyl-M and PA resistant isolates of *Phytophthora infestans* and *Plasmopara viticola* existed at low proportions in wild type populations already before PA fungicides were used commercially (1977/78) suggesting that recurrent mutations give rise to resistant individuals at different locations and time periods. Resistant isolates have been selected through the use of PAs, increased in frequency, survived during over-wintering periods and migrated to other regions through transport of sporangia in

[9] Gisi and Sierotzki. 2008. Fungicide modes of action and resistance in downy mildews. Eur. J. Plant Pathol. 122, 157–167.
[10] Randall et al 2014. Sequence diversity in the large subunit of RNA polymerase I contributes to Mefenoxam insensitivity in Phytophthora infestans. Mol Plant Pathol. DOI: 10.1111/mpp.12124
[11] Gobbin et al. 2007. Epidemiology and population genetics of grape vine downy mildew. pp. 205-209 in A. Lebeda and P.T.N. Spencer-Phillips, eds., Advances in Downy Mildew Research, Vol. 3, Proceedings 2 nd International Downy Mildew Symposium, JOLA, Kostelec na Hané, Olomouc, Czech

rain droplets and infected plant material (tubers, seedlings). Resistant isolates can compete successfully with sensitive isolates even in the absence of PA treatments. Therefore, resistant isolates can be detected in current field populations that were treated with PAs or remained untreated.
Samples for sensitivity analyses should be taken as early in the epidemic cycle as possible. Those taken towards the end of the season will provide results which are a result of selection, migration, mating and competition occurring during epidemics. Consequently, resistance frequencies are often overestimated. Standard sensitivity test methods (e.g., leaf disc assay) provide a fully resistant response to PAs (used as active ingredients) when as little as 1% of the sporangia in bulk samples of field populations are resistant. Since sensitivity tests are made with active ingredients of PAs but products are used for disease control in the field in mixture with multi-site fungicides there is no direct correlation between sensitivity test results in the laboratory and product performance in the field.
The current sensitivity test methods provide valuable information on the distribution of isolates over a certain period in a given agronomic area but should not be used to predict product performance. In most cases mixed populations can be controlled adequately by PA-containing products if the proportion of resistant isolates is not too high and if the number of applications is limited.
In general, PA-tolerance has been associated with a fitness cost for the resistant phenotype over the susceptible phenotype. This fitness coast indirectly justifies the registration of products containing metalaxyl-M and other active ingredients belonging to different class of resistance. A recent study found that the fitness cost of resistance is a crucial parameter to determine the outcome of competition between the sensitive and resistant pathogen strains and to assess the usefulness of a mixture. If fitness costs are absent, then the use of the high-risk fungicide in a mixture selects for resistance and the fungicide eventually becomes non-functional. If there is a cost of resistance, then an optimal ratio of fungicides in the mixture may be found at which selection for resistance is expected to vanish and the level of disease control can be optimized[12].

Cross resistance

There is full cross resistance among all members of PA fungicides (metalaxyl, metalaxyl-M (=mefenoxam), furalaxyl and oxadixyl, benalaxyl and benalaxyl-M (=kiralaxyl) and ofurace) but there is no cross resistance between PAs and fungicides of other chemical classes like cyanoacetamide oximes (Cymoxanil), QoIs (e.g. Azoxystrobin, Famoxadone), phosphonates (Fosetyl-Al), carboxylic acid amide (CAA) fungicides (Dimethomorph, Iprovalicarb, Mandipropamid), carbamates (Propamocarb), dinitroanilines (Fluazinam) and multisite inhibitors (e.g. dithiocarbamates like Mancozeb).

Sensitivity data

- *Phytophthora infestans* on tomato and potato

Phytophthora infestans on tomato and potato in considered by FRAC a high-risk disease for resistance development. Resistance in field to metalaxyl-M and to all the active ingredients belonging to the PA-group of fungicides (Phenylamides) is well known worldwide. The sensitivity of *P. infestans* populations fluctuates from year to year and within the season. In many cases, sensitive isolates predominate early and resistant isolates predominate late in the season for both PA-treated and untreated fields.

Results from recent monitoring conducted by Syngenta since 2007 are presented in the Biological Assessment Dossier, Annex Point IIIA 3.3 (KCP 6.3).

Comparison of the sensitivity in European populations to metalaxyl-M over several years demonstrates strong fluctuation in the frequency on sensitive, moderately sensitive and resistant isolates. Since 2007, the frequency of less sensitive isolates seems to decrease.

Results clearly demonstrate that different situations can be observed in the different regions of Europa where the samples were collected. Resistant isolates of *P. infestans* were detected in 2012 in populations

[12] Mikaberidze et al 2014. Can High-Risk Fungicides be Used in Mixtures Without Selecting for Fungicide Resistance? Analytical and Theoretical Plant Pathology. 104 (4): 324-331

of Portugal, Spain, Germany, Check Republic, Denmark and Netherlands. In 2014, monitoring studies revealed a slightly different scenario where different frequency in resistant isolates was observed in the different countries when compared to 2012. Similar observations can be done on the data available for 2015. In general, monitoring studies revealed a slightly different scenario where different frequency in resistant isolates was observed in the different countries and different frequencies over seasons.

- *Plasmopara viticola* on grape

Much less information on resistance to PAs is available for *Plasmopara viticola* compared to *Phytophthora infestans.* In countries where sensitivity analyses have been conducted recently (e.g. France, Switzerland, Spain, Germany), the proportion of resistant *P. viticola* isolates has remained high (50 – 80%) but more or less stable for many years[13].
Plasmopara viticola on grape is considered by FRAC a high-risk disease for resistance development. The EPPO Guideline PP1/213(3) list this pathogen as high-risk pathogen of which baseline sensitivity is requested.

Results from recent monitoring conducted by Syngenta in 2014 and 2015 are presented in the Biological Assessment Dossier, Annex Point IIIA 3.3 (KCP 6.3).

Results clearly demonstrate that different situations can be observed in the different regions of Europa where the samples were collected. In general, resistant isolates of *Plasmopara viticola* are present in populations of the Mediterranean EPPO zone (France, Italy, Spain and Portugal) and in south-west Germany. A limited number of isolates resistant to metalaxyl-M was detected in populations of the South-East EPPO zone.

Comparison of the sensitivity in European populations to metalaxyl-M over several years demonstrates strong variability in the frequency on sensitive, moderately sensitive and resistant isolates. The situation remained stable in 2014 and 2015 if compared to 2013.

- Other crops

The presence of resistant isolates in field populations has been confirmed in other pathogens including *Bremia lactucae* (e.g. UK, Italy) (FRAC Resistance Survey List, www.frac.info). However, the proportion of resistant isolates in field populations is not well documented. Resistance levels are not uniform and do not necessarily correlate with product performance problems.
Bremia lactucae on lettuce is considered by FRAC a medium risk disease for resistance development. Resistance in field to metalaxyl-M and to all the active ingredients belonging to the PA-group of fungicides (Phenylamides) is known.
Peronospora destructor on onion, *Phytophthora porri* on leek and *Peronospora parasitica* (=*Hyaloperonospora brassicae*) on brassica are considered by FRAC a medium risk disease for resistance development. The EPPO Guideline PP1/213(3) does not list this pathogen as high-risk pathogen of which baseline sensitivity is requested.

Resistance risk associated with unrestricted use pattern

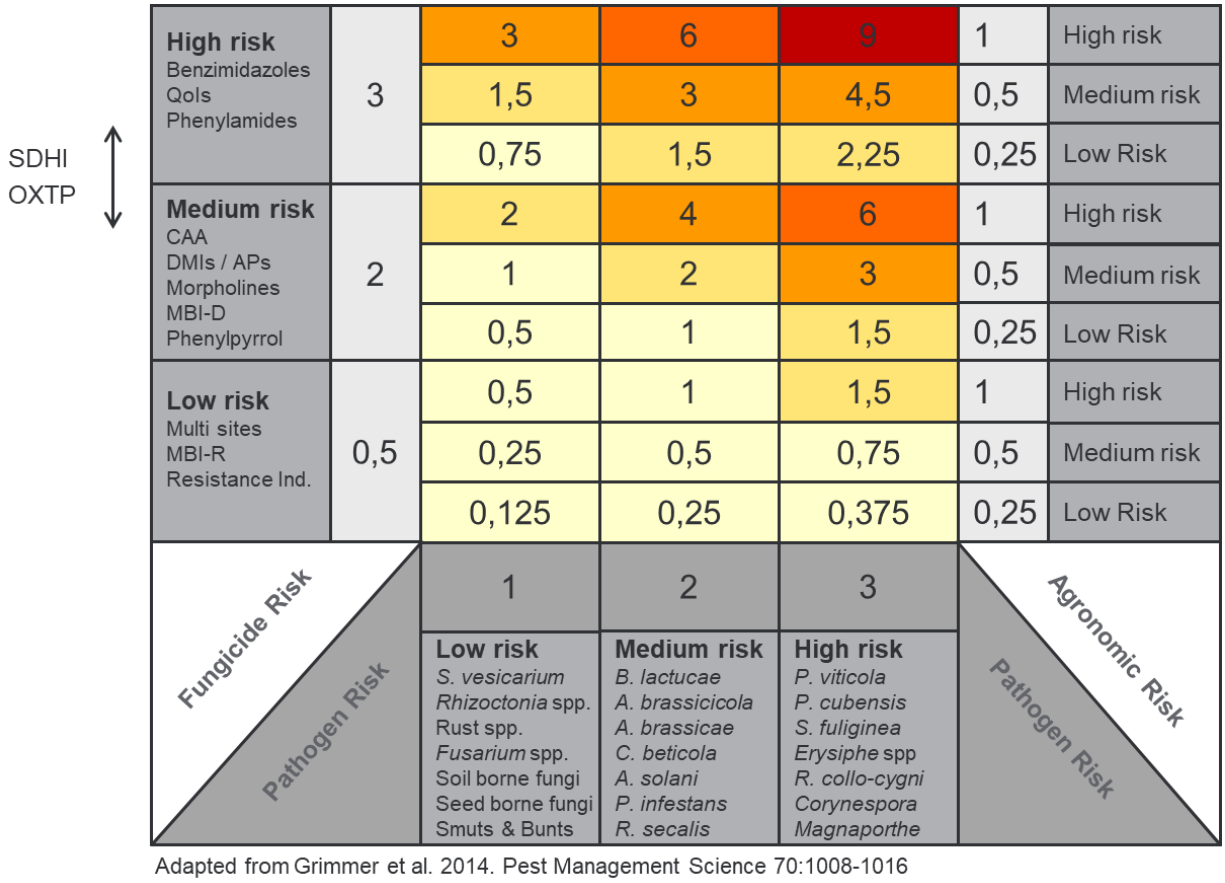
The actual risk for the evolution of resistance towards metalaxyl-M and oxathiapiprolin depends on three different parameters: mechanism of resistance against the compound (intrinsic fungicide risk), biology of the pathogen (pathogen risk) and on agronomical factors (agronomic risk). Additionally, to the risk to the individual fungicides also the combined risk towards the mixture needs to be evaluated.

Oxathiapiprolin and metalaxyl-M are single site inhibitors. OSBPI resistance has been generated in the lab to a range of pathogens, but in field is found sporadically in single pathogens. Only little is known about the dynamics of OSBPI resistance evolution, such as stability, spread and fitness cost. Based on our knowledge today, the intrinsic fungicide risk for oxathiapiprolin is moderate to high.

[13] Gisi U, Sierotzki H. 2008. Fungicide modes of action and resistance in downy mildews. European Journal of Plant Pathology 122:157-167.

The intrinsic resistance risk of phenylamide fungicides is considered as high (FRAC).

The overall resistance risk for phenylamides and OSBPI including metalaxyl-M and oxathiapiprolin should be considered between medium and high depending on the agronomic risk associated to each pathogen/crop system (Figure 3.3-1).



Adapted from Grimmer et al. 2014. Pest Management Science 70:1008-1016

Figure 3.3-1: Resistance risk assessment matrix considering i) Fungicide, ii) Pathogen and iii) Agronomic risk for the discussed pathogen and fungicide classes.

Management strategy

The actual performance of products depends on the strength of the evolved reduced sensitivity and its frequency in a particular population. Monitoring of oxathiapiprolin and metalaxyl-M sensitivity will continue as appropriate for the pathogens discussed above and any change in sensitivity will be reported through FRAC and the relevant country resistance management bodies. Through this process Syngenta can adapt to any changes in sensitivity and readily adopt alternative resistance management strategies as appropriate.

The summaries and recommendations included in this report are based upon data generated by members of the FRAC-OSBPI (FRAC 49) and FRAC-PA Working Group. The working group concentrates its resources on the major crop/pathogen targets from the point of view of resistance risk. To help in making recommendations for crops and pathogens the following general recommendations can be made:

The use of two fungicides in a mixture is considered as valuable anti-resistance strategy compared to the use of solo compounds.

To prevent the development and spread of resistance, applications of A23109A, for both field and protected uses, should be included in program, in alternation with products containing different mode of actions or in bloc system where:

OSBPI products (FRAC 49):

- Make no more than four applications or maximum of 33% of the total period pf protection needed per crop, whichever is the more restrictive.
- Where to total number of fungicide applications targeting oomycetes is less than three, apply no more than 1 application of an OSBPI product.
- Application of OSBPI fungicides to be made no more than three times in sequence before applying a fungicide of a different MoA.
- OSBPI fungicides can be made in alternation with a fungicide with a different MoA.
- In case of multicrop growing systems, do not use more than six (6) applications of OSBPI fungicides per year in the same area for the same pathogen.
- In cases where a OSBPI fungicide is used in seed treatment or soil application, foliar application of OSBP-containing products should not be carried out
- OSBPI fungicides should not be used in nursery production of transplanted crops.

Phenylamide products (FRAC 4)

- The number of phenylamide applications should be limited (two to four consecutive applications per crop and year).
- Application of Phenylamide fungicides to be made no more than two times in sequence before applying a fungicide of a different MoA
- The application intervals should not exceed 14 days and may be shorter in cases of high disease pressure
- Phenylamide sprays are recommended early season or during the period of active vegetative growth of the crop

Conclusion

The resistance management strategy for A23109A is therefore based on limitation of exposure of the pathogen to the fungicide by limiting the number of applications permitted in a program and promoting the use of alternation with products from different MoA cross resistance groups.

- Applications of A23109A to be applied according to label recommendations and can be made in alternation with products containing different cross-resistance group with satisfactory efficacy against the targeted pathogen(s).
- Maximum 2 applications A23109A at 0.5 l/ha per crop and per year.
- Exposure to A23109A should not exceed thirty-three percent (33%) of the total period of protection needed per crop.
- A23109A applications are to be made preventively.

Comments of zRMS:

A23109A contains two active substances: oxathiapiprolin (belonging to the chemical group of piperidinyl-thiazole-isoxazolines, MoA group of OSBPI fungicides) and metalaxyl-M (belonging to the chemical group of acylalanines, MoA group of PA-fungicides). According to FRAC classification, the resistance risk for metalaxyl-M is considered high risk and for oxathiapiprolin - medium to high. Furthermore, the target pathogens indicated in the GAP table are medium risk developed of resistance (*Phytophthora porri, Albugo candida*). The overall resistance risk for phenylamides and OSBPI including metalaxyl-M and oxathiapiprolin should be considered between medium and high depending on the agronomic risk associated to each pathogen/crop system. Due to that the resistance management is required. Taking into account data generated by members of the FRAC-OSBPI (FRAC 49) and FRAC-PA Working Group, the resistance management strategy for A23109A proposed by the applicant is sufficient in opinion of zRMS. The below recommendations should be included to the product label:
- *applications of A23109A to be applied according to label recommendations*
- *use A23109A in rotation with other product containing active substances belonging to other chemical group with different mode of action*

- maximum 2 applications A23109A at 0,5 l/ha per crop and per year
- exposure to A23109A should not exceed thirty-three percent (33%) of the total period of protection needed per crop
- A23109A applications are to be made preventively

3.4 Adverse effects on treated crops (KCP 6.4)

Information on trials submitted (3.4: Adverse effects on treated crops)

Table 3.4-1: Presentation of trials (transformation trials)

Crop(s) *	Country	Years	Type of trial**	Number of trials			GEP, non-GEP, official***	Comments (any other relevant information)
				Maritime zone	Mediterranean zone	Protected conditions		
Leek	Belgium	2020	TP	1	-	-	GEP	Taint test
	France	2020	TP	1	-	-	GEP	Taint test
TOTAL	-	**2020**	-	**2**	-	-	-	-

* According to the GAP table
** S = selectivity trial, Y = trial with yield assessment, Q = trial with quality assessment, T = trial on the basis of the study of impact on transformation process (TP: Physical transformation, TF: transformation involving microbial fermentation), P = trial with assessment of impact on propagation
*** Official: carried out by a national official organisation

Table 3.4-2: Presentation of reference standards used in trials (taint test)

Crop(s)	EPPO ZONE	Reference standard	Country(ies) where the product is registered (1)	Authorization number	Active substance(s)	Formulation		Registered application rate (3)	Application rate in trials (per treatment)	Remark(4)
						Type (2)	Concentration of a.s.			
Leek	Maritime	Ortiva (A12705 [B])	Belgium	9326P/B	Azoxystrobin	SC	250 g/L	1 L/ha	1 L/ha	
			France	9700332	Azoxystrobin	SC	250 g/L	1 L/ha	1 L/ha	

(1) only on use(s) applied for (with the test product)
(2) e.g.WP (wettable powder), EC (emulsifiable concentrate), etc.
(3) Dose / dose range authorized in the country
(4) Other relevant information (e.g. uses, number of applications, spray volume, method of application…)

3.4.1 Phytotoxicity to host crop (KCP 6.4.1)

According to Table 1 of EPPO standard PP 1/135(4), specific selectivity trials and yield assessments are not required for fungicides when no adverse phytotoxic effects are observed in direct efficacy trials. Phytotoxicity of A23109A was thus evaluated in efficacy trials presented in this dossier.

For material and method of the trials refer to Annex Point IIIA 3.2.3 (KCP 6.2). Site and application details are located in Appendix 2 of the Biological Assessment Dossier.

3.4.1.1 Lettuce

Table 3.4-3: Phytotoxicity of product

Number of trials with…		Efficacy trials (14 trials)	
		A23109A/EXF16956C	Revus (=A12946B)
		N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	14	14
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	14	14
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

A total of 14 field trials were carried out on lettuce in Belgium, France, Germany and Poland from 2019 to 2020 on a wide range of commercially grown varieties.
No phytotoxicity symptom caused by A23109A at the proposed dose rate of 0.5 L/ha was recorded in all 14 trials.

3.4.1.2 Onion

Table 3.4-4: Phytotoxicity of product

Number of trials with…		Efficacy trials (16 trials)		
		A23109A/EXF16956C	Infinito 687.5 SC	Amistar 250 SC (=A12705B)
		N	N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	16	13	3
	>5% to 10%	0	0	0
	>10% to 15%	0	0	0
	>15 %	0	0	0
Level of symptoms at the last	0% to 5%	16	13	3

Number of trials with…		Efficacy trials (16 trials)		
		A23109A/EXF16956C	Infinito 687.5 SC	Amistar 250 SC (=A12705B)
		N	N	N
assessments	>5% to 10%	0	0	0
	>10% to 15%	0	0	0
	>15 %	0	0	0

16 trials were carried out on onion in field conditions in Belgium, Czech Republic, France, the Netherlands and Poland from 2019 to 2021 on a wide range of commercially grown varieties.
No phytotoxicity symptom caused by A23109A at the proposed dose rate of 0.5 L/ha was recorded in all 16 trials.

3.4.1.3 Leek

Table 3.4-5: Phytotoxicity of product

Number of trials with…		Efficacy trials (9 trials)	
		A23109A/EXF16956C	Infinito 687.5 SC
		N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	9	9
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	9	9
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

9 trials were carried out on leek in field conditions in Belgium, France and the Netherlands from 2019 to 2020 on a range of commercially grown varieties.
No phytotoxicity symptom caused by A23109A at the proposed dose rate of 0.5 L/ha was recorded in all 9 trials.

3.4.1.4 Brassica

Table 3.4-6: Phytotoxicity of product

Number of trials with…		Efficacy trials (11 trials)	
		A23109A/EXF16956C	Infinito 687.5 SC
		N	N
Maximum of phytotoxicity recorded during the trials	0% to 5%	11	11
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0
Level of symptoms at the last assessments	0% to 5%	11	11
	>5% to 10%	0	0
	>10% to 15%	0	0
	>15 %	0	0

11 trials were carried out on a range of brassica crops (1 *Brassica* sp. trial, 4 cabbage trials, 4 cauliflower trials, 1 Peking cabbage trial and 1 turnip trial) in field conditions in Belgium, Germany, Poland and the Netherlands from 2019 to 2020 on a range of commercially grown varieties.
No phytotoxicity symptom caused by A23109A at the proposed dose rate of 0.5 L/ha was recorded in all 11 trials.

3.4.1.5 Spinach

Table 3.4-7: Phytotoxicity of product

Number of trials with…		Efficacy trials (5 trials)	
		A23109A/EXF16956C	Infinito 687.5 SC
		N	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

5 trials were carried out on spinach in field conditions in Belgium, France and the Netherlands from 2019 to 2020 on a range of commercially grown varieties.
No phytotoxicity symptom caused by A23109A at the proposed dose rate of 0.5 L/ha was recorded in all 5 trials.

Comments of zRMS:

No special selectivity trials have been submitted. The phytotoxicity assessment was provided in the field efficacy trials in the Maritime and North-East EPPO climatic zones. No negative symptoms were observed in all trials. A23109A at dose rate of 0,5 l/ha is safe for lettuce, onion, leek, Brassicas vegetables and spinach.

3.4.1.6 Other crops, including minor crops

The crop safety data presented above were conducted on a range of representative major crops from the different supported crop groups as leafy vegetables (lettuce, spinach), Allium crops (onion, leek) and brassica crops (cabbage, cauliflower, turnip, Romanesco brassica or Chinese cabbage). Perfect selectivity observed in this range of crops may be fully extrapolated to a range of other major and minor crops. For details on major and minor status of intended crops in intended Member States, please refer to Table 3.2-4.

Considering the use in crops belonging to leafy vegetables, full selectivity of A23109A was demonstrated at proposed label rate on lettuce and spinach. This is in accordance with EPPO extrapolation table for effectiveness in leafy vegetables (14/19578) that considers lettuce as indicator crop for *Bremia* sp. efficacy experiment and spinach for *Peronospora* sp. See https://www.eppo.int/media/uploaded_images/ACTIVITIES/plant_protect_products/minor_uses/fungicides/PP1-19578FEET_2014_Leafy_vegetables-effectiveness.pdf.
EPPO crop safety extrapolation table is not available for leafy vegetables.

According to the Dutch Board for the Authorisation of Plant Protection Products and Biocides, document "Chapter 8 efficacy: Appendix E: Extrapolation possibilities - versie2.0", it is advised to test head lettuce for crop safety purpose. The selectivity results obtained on head lettuce may be extrapolated to *Lactuca sativa* sp., endive, green Belgian endive and fresh herbs. See https://english.ctgb.nl/plant-protection/documents/assessment-framework-ppp/2016/09/30/8.-appendices-dutch-extrapolation-document-in-english-em2.1
Head lettuce is indeed a susceptible crop showing thin leaves and can therefore serve as phytotoxicity model for other leafy vegetable crops.

As A23109A appears to be a fully selective fungicide in all crops tested in the frame of this dossier, including lettuce and spinach crops, and further to extrapolations possibilities, it is reasonable to conclude that A23109A will be fully selective, when applied at recommended label rate, with all the whole supported group of leafy vegetables as lettuce, baby leaves, chicory, cress, endive, escarole, herbs & edible flowers, iceberg lettuce, lamb's lettuce, parsley, purple-vein rocket and watercress and as spinach, chards & beet leaves and common purslane.

Considering the use in crops belonging to Allium vegetables, full selectivity of A23109A was demonstrated at proposed label rate on leek and onion. This is in accordance with EPPO extrapolation table for effectiveness in Allium (bulb) vegetables (14/20180) that considers any Allium crop, including onion, as indicator crop for *Peronospora destructor* efficacy experiment and leek for *Phytophthra porri*. See
https://www.eppo.int/media/uploaded_images/ACTIVITIES/plant_protect_products/minor_uses/fungicides/PP1-20180FEET_2014_Bulb_vegetables_effectiveness.pdf.
EPPO crop safety extrapolation table is not available for Allium (bulb) vegetables.

According to the Dutch Board for the Authorisation of Plant Protection Products and Biocides, document "Chapter 8 efficacy: Appendix E: Extrapolation possibilities - versie2.0", it is advised to test onion for crop safety purpose. The selectivity results obtained on onion (1rst year) may be extrapolated to seed onions, onion (2nd year), silver skin onions, pickles, seed- and planted shallots and garlic. From 2nd year onion, crop safety results can be extrapolated to seed onions, seed shallots and planted shallots. See https://english.ctgb.nl/plant-protection/documents/assessment-framework-ppp/2016/09/30/8.-

appendices-dutch-extrapolation-document-in-english-em2.1
Between the different onion and shallots species, there are no difference in sensitivity for phytotoxicity.

As A23109A appears to be a fully selective fungicide in all crops tested in the frame of this dossier, including onion and leek crops, and further to extrapolations possibilities, it is reasonable to conclude that A23109A will be fully selective, when applied at recommended label rate, with the whole supported group of Allium (bulb) vegetables as chives, garlic, leek, onion, shallot and spring Welsh and green onion.

Considering the use in crops belonging to Brassica vegetables, full selectivity of A23109A was demonstrated at proposed label rate on head cabbage, cauliflower, Romanesco brassica, Chinese cabbage and also on turnip. The results on flowerhead brassicas are in accordance with EPPO extrapolation table for effectiveness in vegetables Brassicas (14/20176) that considers these crops as indicator crops for *Hyaloperonospora parasitica* (*Peronospora parasitica*) efficacy experiment. See https://www.eppo.int/media/uploaded_images/ACTIVITIES/plant_protect_products/minor_uses/fungicides/PP1-20176FEET_2014_Brassica-effectiveness.pdf.
Beside this table, the EPPO crop safety extrapolation table is available for vegetable brassicas (08/14211). The results on Chinese cabbage are in accordance with EPPO extrapolation table that considers this crop as indicator crop for crop safety. Additionally, according to this table, lettuce crop safety data may be extrapolated to vegetable brassicas. See https://www.eppo.int/media/uploaded_images/ACTIVITIES/plant_protect_products/minor_uses/fungicides/PP1-14831FCET_2009_Brassica_crop_safety.pdf.

According to the Dutch Board for the Authorisation of Plant Protection Products and Biocides, document "Chapter 8 efficacy: Appendix E: Extrapolation possibilities - versie2.0", phytotoxicity assessments are hard when damage is caused by downy mildew. Selectivity on broccoli plant beds is advised. Additionally, from other uses, it is advised to test cauliflower, broccoli, Brussels sprouts and/or Chinese cabbage for crop safety purpose. The selectivity results obtained on cauliflower may be extrapolated to broccoli, curled kale, Brussels sprouts and head cabbage and the selectivity results obtained on Chinese cabbage may be extrapolated to cauliflower, broccoli, Brussels sprouts, curled kale, Indian mustard, pak-choi cabbage and head cabbage.
See https://english.ctgb.nl/plant-protection/documents/assessment-framework-ppp/2016/09/30/8.-appendices-dutch-extrapolation-document-in-english-em2.1
Chinese cabbage is the more susceptible Brassica crop as it has no wax layer and can therefore serve as phytotoxicity model for other Brassica vegetables crops.

As A23109A appears to be a fully selective fungicide in all crops tested in the frame of this dossier, including a range of Brassica crops such as head cabbage, cauliflower, Romanesco brassica, Chinese cabbage and turnip and further to extrapolations possibilities, it is reasonable to conclude that A23109A will be fully selective, when applied at recommended label rate, with the whole supported group of brassica crops (broccoli, Brussels sprouts, cauliflower, curly kale, head cabbage, kale, red mustard, pe-tsai and Savoy cabbage).

In conclusion, A23109A at recommended label rate is expected to be fully selective on all intended crops.

Comments of zRMS:

No efficacy trials have been submitted for other minor crops indicated in the GAP table. Because no special selectivity trials were available for these crops, the cMSs are kindly asked to consider safety of these crops on national level.

3.4.2 Effect on the yield of treated plants or plant product (KCP 6.4.2)

According to Table 1 of EPPO standard PP 1/135(4), specific selectivity trials and yield assessments are not required for fungicides when no adverse phytotoxic effects are observed in direct efficacy trials.
A23109A appeared fully selective with the supported crops with not any significant symptoms of phytotoxicity (see 3.4.1), therefore no negative effects are expected on yield when A23109A is used as recommended.
No quantitative yield assessments were therefore performed in efficacy trials conducted in the absence of disease pressure.

Comments of zRMS:

Accepted.

3.4.3 Effects on the quality of plants or plant products (KCP 6.4.3)

According to Table 1 of EPPO standard PP 1/135(4), specific selectivity trials and yield assessments are not required for fungicides when no adverse phytotoxic effects are observed in direct efficacy trials.
A23109A appeared fully selective with the supported crops with not any symptoms of phytotoxicity (see 3.4.1), therefore no negative effects are expected on yield quality when A23109A is used as recommended.

Comments of zRMS:

Accepted.

3.4.4 Effects on transformation processes (KCP 6.4.4)

Reference is given to Part B Section 7 for information on residues in harvested/processed parts of plant.

To address transformation process questions, EPPO standard PP 1/243(2) – '*Effects of plant protection products on transformation processes'* provides an indication of the circumstances under which data on transformation processes are required. Additionally, taint tests requirements are further discussed in standard PP 1/242(2) – '*Taint tests'*.

Processing procedures are relevant for some crops that are supported on the label claim including broccoli, cabbage, cauliflower, leek, onion and spinach that are susceptible to be processed by freezing.

In order to confirm the absence of unintentional effects on organoleptic qualities from the use of A23109A at proposed label rate, two trials were set up in leek in the Maritime EPPO climatic zone (Belgium and France) in 2020.

Two trials were conducted under GEP on leek in the Maritime EPPO zone (Belgium and France) in 2020 in absence of disease or insects. For details on trials methodology, please refer to Table 3.4-8.
In the field part of these leek trials, selectivity was assessed according to EPPO guidelines (PP 1/135(4) – '*Phytotoxicity assessment*". No phytotoxicity symptom caused by A23109A at the proposed dose rate of 0.5 L/ha was recorded in both trials.

Table 3.4-8: Details on leek trials methodology (2 trials) – Maritime EPPO zone

Guidelines	General guidelines	EPPO PP 1/135(4)
	Specific guidelines	EPPO PP 1/242(1), PP 1/243(2), CEB 218
Experimental design	Plot design	Randomized complete block
	Treated plot size	15 & 22.5 m²
	Number of replications	4 (2 trials)
Crop	Trials per crop	2 trials (leek)
	Varieties per crop	Krypton & Duraton (leek)
	Planting date	07/07/2020 & 24/03/2020 (leek)
Application	Rate of A23109A	2 applications of 0.5 L PR/ha (BD)
	Rate of Ortiva standard	2 applications of 1 L PR/ha (AC)
	Crop stage (BBCH) at application	Leek BBCH 43-48 (first application timings A or B) & 45-49 (second application timings C or D)
	Number of applications Intervals between applications	2 applications with interval of 9-12 days (A23109A, timings B&D) 2 applications with interval of 12-13 days (Ortiva standard, timings A&C)
	Pre Harvest Interval	14 days between second application (timing D) and leek harvest (A23109A) 18-21 days between second application (timing C) and leek harvest (Ortiva standard)
	Spray volumes	200 & 400 L/ha
Assessment	Assessment types	Field part: % of general phytotoxicity Lab part: leek tasting
	Assessment dates	Field part: 6-8 DA-A, 2-5 DA-B or 9-13 DA-A, 3-7 DA-C or 8-12 DA-B, 5 DA-D or 9 DA-C
Other relevant information	e.g. Field / Protected conditions...	Field part: field Lab part: harvested samples sent to laboratory for taint test

In Belgium, leek samples were harvested and processed the same day (19/02/2021) while in France harvested leeks (13/07/2020) were stored at cooled temperature until the shipment to the processing lab and were processed 4 days later (17/07/2020).
Leeks were sorted and washed. They were blanched into boiling water. These blanched leeks were strained, packed into plastic bags and immediately deep-frozen until the day of taint test.

The triangular test results on frozen leeks obtained in these two trials carried out in the Maritime EPPO zone confirm that the application of A23109A applied twice does not lead to any organoleptic significant modifications compared with a reference product.

It can be concluded that the use of A23109A at proposed label rate and according to good agricultural practice does not lead to any taint on transformed leek (frozen). The same conclusion can be also reasonably drawn on other supported crops that could be intended for transformation (including broccoli, cabbage, cauliflower, leek, onion and spinach).

Comments of zRMS:

Only 2 trials have been submitted to show absence of negative effects on transformation processes. The leek was subjected to a deep-freezing process. According to the applicant's conclusion, A23109A applied twice doses not lead to any organoleptic significant modifications compared with a reference product. However, it should be noted that the EPPO guideline PP 1/243(2) Effects of plant protection products on transformation processes provides: "*the main crops which may be subjected to transformation processes include grapevine (winemaking), cereals (baking and brewing) and hop (brewing). However, other crops such as apples (cider making), or*

vegetables (conservation by fermentation, e.g. sauerkraut) or crops for silage could also be considered." Taking into account that head cabbage is indicated in the GAP table, some special trials for a fermentation processes would be appreciated. The cMSs are kindly asked to consider this conclusion on national level.

3.4.5 Impact on treated plants or plant products to be used for propagation (KCP 6.4.5)

According to Table 2 of EPPO standard PP 1/135(4), no data are normally required for fungicides on plants parts for propagation except when the plant protection product has systemic activity, is applied close to harvest and some phytotoxic effects are seen on some crops.

Because A23109A has no herbicidal activity and no phytotoxicity was reported from the trials with no negative impact on quality and yield, no data on plant parts for propagation are required.

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)

Due to the good selectivity of formulated product A23109A, no negative impacts on succeeding crops can be expected if the product is applied according to good agricultural practice (GAP).
Based on this evidence and the risk assessment for non-target terrestrial plants as provided in **Part B, Section 8** (Environmental Fate), it is concluded that the risk to succeeding crops is low.

Table 3.5-1: Endpoints and effect values relevant for the risk assessment for non-target terrestrial plants – metalaxyl-M

Species	Substance	Exposure System	Results	Reference
Brassica napus d *Avena fatua* m *Beta vulgaris* d *Zea mays* m *Glycine max* d *Allium cepa* m	RIDOMIL GOLD (A9651D)	Screening study	No effects on seedling emergence or vegetative vigour at 4.5 kg/ha	EFSA Journal 2015;13(3):3999; Walder, L., 2001, report no. CGA329351/1457

m: monocotyledonous; d: dicotyledonous
EFSA Journal 2015 ;13(3):3999. [105 pp.] doi: 10.2903/j.efsa.2015.3999

Table 3.5-2: Endpoints and effect values relevant for the risk assessment for non-target terrestrial plants – oxathiapiprolin

Species	Substance	Exposure System	Results	Reference
Zea mays m *Avena sativa* m *Allium cepa* m *Lolium perenne* m *Cucumis sativus* d *Pisum sativum* d *Brassica napus* d *Glycine max* d *Beta vulgaris* d *Lycopersicon esculentum* d	Oxathiapiprolin (formulated as 100 g/L OD)	21 d Seedling emergence	ER_{50} > 600 g a.s./ha for all species tested	EFSA 2016;14(7):4504, DuPont-32478

Species	Substance	Exposure System	Results	Reference
Zea mays m *Avena sativa* m *Allium cepa* m *Lolium perenne* m *Cucumis sativus* d *Pisum sativum* d *Brassica napus* d *Glycine max* d *Beta vulgaris* d *Lycopersicon esculentum* d	Oxathiapiprolin (formulated as 100 g/L OD)	21 d Vegetative vigour	ER_{50} > 600 g a.s./ha for all species tested	EFSA 2016;14(7):4504, DuPont-32479

m: monocotyledonous; d: dicotyledonous
EFSA Journal 2016 ;14(7):4504. [19 pp.] doi:10.2903/j.efsa.2016.4504.

Table 3.5-3: Endpoints and effect values relevant for the risk assessment for non-target terrestrial plants – A23109A

Species	Substance	Exposure System	Results	Reference
*Allium cepa*m *Triticum aestivum*m *Beta vulgaris*d *Brassica napus*d *Cucumis sativus*d *Glycine max*d	A23109A	28 d phytotoxicity screen, seedling emergence	No phytotoxic effects at rates up to and including 1 000 mL/ha, the highest rate tested	Jones 2020; Syngenta file no. VV-890173
*Allium cepa*m *Triticum aestivum*m *Beta vulgaris*d *Brassica napus*d *Cucumis sativus*d *Glycine max*d	A23109A	21 d phytotoxicity screen, vegetative vigour	No phytotoxic effects at rates up to and including 1 000 mL/ha, the highest rate tested	Jones 2020; Syngenta file no. VV-890173

m: monocotyledonous; d: dicotyledonous

Conclusion
Screening test rates up to and including 1000 mL/ha were tested with formulation A23109A and effects were below the critical threshold as defined by the "Guidance Document on Terrestrial Ecotoxicology", (SANCO/10329/2002 rev.2 final, 2002). There were no phytotoxic effects based on seedling emergence or vegetative vigour up to and including the highest test rate of 1000 mL A23109A/ha.

The test rates exceed the highest field application rate of 500 mL A23109A/ha and are thus considered an indicator for an acceptable risk.

Comments of zRMS:

The trial results submitted in Section 8 show that A23109A at dose rate of 0,5 l/ha does not negative influence on the tested crop species: onion, wheat, beet, rapeseed, cucumber and soybean. No phytotoxic symptoms were observed in case of seedling emergence and vegetative vigour. However, no information about selectivity of formulated product in situation of earlier plowing of the crops has been presented. Also no date about intervals between using of A23109A and sowing succeeding crops was given. Due to that, no recommendations to the product label are proposed. The assessment conducted in Section 8 is precedent in this case.

3.5.2 Impact on other plants including adjacent crops (KCP 6.5.2)

In accordance with EPPO Standard PP 1/256 'Effects on adjacent crops', a step-wise approach should be taken to assess the impact on other plants including adjacent crops.

A23109A is a foliar spray fungicide for which no phytotoxic effects were observed at any point during

profiling or development. Following the decision-support scheme for the risk assessment for adjacent crops proposed in Appendix 2 of EPPO Standard PP 1/256, the data produced for the risk assessment for non-target terrestrial plants, presented in Part B, section 9, is relevant to assess the impact on other plants including adjacent crops. For ease of reference a summary and interpretation of the data are presented in Table 3.5-3.

Screening test rates up to and including 1000 mL/ha were tested with formulation A23109A and effects were below the critical threshold as defined by the "Guidance Document on Terrestrial Ecotoxicology", (SANCO/10329/2002 rev.2 final, 2002). There were no phytotoxic effects based on seedling emergence or vegetative vigour up to and including the highest test rate of 1000 mL A23109A/ha.

It is the applicant's conclusion that A23109A will cause no adverse effects on adjacent crops.
Since no effects are observed on sensitive crops in field trials, nor in the risk assessment studies for non-target terrestrial plants, authorization should be granted without restrictions concerning adjacent crops.

Tank cleaning

In agreement with the EPPO guideline PP1/292(1) *"Cleaning pesticide application equipment (PAE) – efficacy aspects"*, which provides a stepwise, tiered guide to identify the risk of crop damage from tank residues, *Tier I* data to assess the efficiency of tank cleaning procedures can usually be taken even from efficacy studies if a range of sensitive crops have been tested.

A23109A has fungicide activity and no herbicidal activity, therefore the risk from tank residues is of no relevance and no testing of cleaning method are required. Furthermore, A23109A causes no phytotoxic symptoms on the plant species tested.

However, one test (Report Number: 450796; VV-Number: VV-903870) was carried out with the objective to investigate the effectiveness of the conventional (rinsing the tank three times with tapwater, no use of detergents) tank cleaning procedure.

Data to determine the effectiveness of the tank cleaning procedure for A23109A showed that after applying the cleaning procedure, 0.06 % residue was found in the refilled spray tank. These data demonstrate that the rinsing procedure sufficiently reduced the amount of residue in the spray tank. Further details in the relative dRR section.

For all these reasons, when applied according to the recommendations, traces of residues of A23109A remained in the application equipment after cleaning should pose no risk to subsequently treated crops.

Cleaning Procedure

Immediately after use, clean the spray equipment thoroughly. Drain the system completely and rinse spray tank, boom, and nozzles two to three times with clean water until the foam and all traces of the formulation have been removed.

Comments of zRMS:

The trial results submitted in Section 9 show that A23109A at dose rate of 1 l/ha does not cause negative symptoms on the tested crops: onion, wheat, sugar beet, oilseed rape, cucumber and soybean. It can be considered that the test product is safe for sensitive crops and no special recommendations in the label in case of adjacent crops are required. Based on the test results, tank cleaning procedure proposed by the applicant is justified. Rinsing with clean water two to three times removes residues to a safe level. The below recommendation can be included to the product label:
"*Immediately after use, clean the spray equipment thoroughly. Drain the system completely and rinse spray tank, boom, and nozzles two to three times with clean water until the foam and all traces of the formulation have been removed*."

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 were observed, nor could any negative impacts on the environment be noticed in the trials summarized in this dossier. Also, no adverse effects on natural predators or other organisms are reported, applying Metalaxyl-M formulations since the ’80 on a range of crops as well as for Oxathiapiprolin. Therefore, it can be concluded that A23109A does not have adverse effects on beneficial organisms.

Detailed studies on the possible adverse effects to beneficial organisms are submitted and summarised in **Part B, Section 9** (Ecotoxicology).

Compatibility with current management practices including IPM

There are no specific tests presented in this dossier using A23109A in strategies of application with other partner fungicides.

The principles of the Integrated Pest Management (IPM) are listed and described in Annex III of the Directive 2009/128/EC.

In IPM, integrated control seeks to identify the best mix of chemical and biological controls for a given disease.

In compliance with this approach, A23109A is a suitable candidate for inclusion in IPM thanks to its profile and characteristics

Summary and conclusion

A23109A applied on a wide range of field and vegetable crops grown in open field, according to recommendations, does not lead to unacceptable risk to succeeding crops, adjacent crops, beneficial insects and non–target organisms. Further details are given in Part B Section 8 and Section 9 of the dRR.

Furthermore, it’s demonstrated the effectiveness of the conventional tank cleaning procedure following the application of A23109A.

Finally, A23109A is a suitable candidate for inclusion in IPM thanks to its profile and characteristics.

Comments of zRMS:
Accepted.

3.6 Other/special studies (KCP 6.6)

No special studies.

3.7 List of test facilities including the corresponding certificates

The following table gives information about the testing facilities where trials were done. All facilities are certified, and the trials conducted according to GEP.

The corresponding certificates are available in the GEP Certificate Database System (Certibase) (http://www.gepcertibase.eu) via the hyperlinks provided in the table below.

Table 3.7-1: List of test facilities

Hyperlink to certificate	Test facility	Country	Address	Number of trials		
				2019	2020	2021
~~1d6cb032edb (2021-2024)~~	~~Agri2000 Hellas Ltd.~~	~~Greece~~	~~Venizelou 45 (81), 57009 Kalochori~~	~~-~~	~~-~~	~~4~~

Hyperlink to certificate	Test facility	Country	Address	Number of trials		
				2019	2020	2021
1d6cb032d07 (2016-2021)	Agroblu Romania SRL	Romania	Calea Bucurestilor, no. 30 B, Saftica, 077015 Ilfov, Saftica	-	-	3
1d6cb032dd6 (2018-2023)	Anadiag Polska	Poland	Sadowa 16/22, 95-100 Zgierz	-	-	1
~~1d6cb032d06 (2017-2022)~~	~~Anadiag Portugal~~	~~Portugal~~	~~Rua dos Olivais, 3 R\C Dto, 3780-229 Anadia~~	~~-~~	~~-~~	~~1~~
1d6cb032c76 (2017-2022)	Anadiag SAS	France	8, route de Gray, 21490 Varois-et-Chaignot	-	-	1
1d6cb032cd2 (2019-2024)	BioChem agrar GmbH	Germany	Kupferstraße 6, 04827 Gerichshain	-	-	2
1d6c95f8d6d (2015-2100)	Biochem agrar Polska Spólka z o.o.	Poland	Kozielska 48, 47-270 Urbanowic	2	-	-
1d6c9ca5eac (2019-2024)	Essais +	France	1 Rue du Huit Mai, 62128 Boyelles	1	2	-
1d6c95f8d86 (2015-2100)	Eurofins Agroscience Services Sp. Z o.o	Poland	Parkowa 6, 64-530 Kaźmierz	-	1	-
1d6c9ca5dca (2016-2022)	Exploras Agro Development	The Netherlands	Eindsestraat 38, 5105 AC Dongen	-	3	-
1d6cb032b0d (2016-2021) 1d6cb032e25 (2021-2026)	Gemerprodukt Valice – OVD, Rimavska Sobota	Slovakia	Okruzna 3771, 97901 Rimavska Sobota	-	-	1
1d6cba1dc31	Syngenta Agro GmbH	Germany	Am Technologiepark 1, 63477 Maintal	1	-	-
1d6c9ca5e23 (2017-2021)	Inagro vzw	Belgium	Ieperseweg 87, 8800 Rumbeke-Beitem	-	1	-
1d6c95f907b (2021-2026)	Institut of Horticulture in Skierniewice	Poland	3, Konstytucji 3 Maja 1, 96-100 Skierniewice	1	1	-
1d6c9ca5f16 (2017-2100)	Research Institute of Horticulture	Poland	3, Konstytucji 3 Maja 1, 96-100 Skierniewice	1	2	2
1d6c9ca5e28 (2018-2023)	InTec Agro Trials, s.r.o.	Czech Republic	Blatnická 179, 687 24 Uherský Ostroh	-	1	-
1d6c9ca5db9 (2015-2021)	Martin – Feldversuchswesen	Germany	Im Grund 20, 78359 Orsingen-Nenzingen	-	1	-
1d6c95f8f76 (2019-2020) 1d6c95f8e40 (2017-2019)	PCG (Provinciaal Proefcentrum voor de Groenteteelt Oost-Vlaanderen vzw)	Belgium	Karreweg 6, 9770 Kruishoutem	4	2	-
1d6c9ca6080 (2020-2026)	PerfectBAD	Poland	ul. Pzytargowa 4, 99-412 Kiernozia	-	-	1
1d6c9ca5dcd (2015-2021)	Proeftuin Zwaagdijk (Stichting Proeftuin Zwaagdijk)	The Netherlands	Tolweg 13, 1681 ND Zwaagdijk	3	3	-
1d6c95f904b (2019-2020) 1d6c95f8fca (2020-2021) 1d6c95f904b (2020-2024)	PSG SKW (Proefstation voor de Groenteteelt VZW)	Belgium	Duffelsesteenweg 101, 2860 Sint-Katelijne-Waver	~~5~~ 3	~~6~~ 4	-
1d6c95f8fb6 (2018-2023)	Qualiphyt	France	80 chemin de Riboulin, 26270 Loriol sur Drôme	~~1~~	~~2~~ 1	-
1d6c9ca5dd7 (2016-2021)	Staphyt	France	23 Rue de Moeuvres, 62860 Inchy-en-Artois	2	1	-
1d6c95f8d51 (2016-2021)	Syngenta Agro GmbH	Germany	Am Technologiepark 1, 63477 Maintal	1	-	-
~~1d6c95f8dc9 (2016-2021)~~	~~Syngenta España, S.A.~~	~~Spain~~	~~C. de la Ribera del Loira, 8, 10, 28042 Madrid~~	~~3~~	~~1~~	~~-~~
1d6c95f8f45 (2018-2023)	Syngenta France SAS	France	1 avenue des Près, CS 10537, 78286 Guyancourt	-	3	-
~~1d6cb032de7 (2020-2022)~~	~~Syngenta Italia S.p.A~~	~~Italy~~	~~Via Montesanto, 16, Monestirolo, 44100 Ferrara~~	~~-~~	~~-~~	~~2~~

Hyperlink to certificate	Test facility	Country	Address	Number of trials		
				2019	2020	2021
~~1d6c95f8f31 (2018-2020)~~ ~~1d6c95f9007 (2020-2022)~~	~~Syngenta Italia S.p.A.~~	~~Italy~~	~~Viale Fulvio Testi, 280/6, 20126 Milano MI~~	~~-~~	~~2~~	~~-~~
1d6c95f8ff4 (2014-2021)	Syngenta Polska Sp.z o.o.	Poland	Szamocka 8, 01-748 Warszawa	-	3	-
1d6c95f8cee (2015-2100) 1d6c95f900e (2020-2100)	SynTech Research Poland	Poland	Bajeczna 6, 05-870 Bramki	-	1	-
~~1d6c9ca5e47 (2017-2022)~~	~~SynTech Research Spain S.L.~~	~~Spain~~	~~Camino de los Huertos s/n, 46210 Picanya, Valencia~~	~~-~~	~~1~~	~~-~~
Uniwersytet Przyrodniczy, ZDD Gorzyn (2021-2026)	Uniwersytet Przyrodniczy, ZDD Gorzyn	Poland	Mazowiecka 45, 60-623 Poznań	2	2	-
1d6cb032e88 (2021-2027)	Vertify	The Netherlands	Tolweg 13, 1681 ND Zwaagdijk-Oost, Noord-Holland	-	-	1
Wageningen Plant Research (2017-2022)	Wageningen Plant Research	The Netherlands	Radix, Droevendaalsesteeg 1, 6708 PB Wageningen	-	1	-

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6	Redebel Regulatory Affairs scrl, Syngenta	2022	Biological Assessment Dossier <A23109A> Syngenta -,- non GEP Unpublished VV-882408	N	SYN
Trial Reports					
KCP 6.1	Apahidean A.	2021	Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF Agroblu Romania SRL ROANZF9102021 GEP Unpublished VV-944371	N	SYN
KCP 6.1	Apahidean A.	2021	Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF Agroblu Romania SRL ROANZF9012021 GEP Unpublished VV-944370	N	SYN
KCP 6.1	Apahidean A.	2021	Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021 Agroblu Romania SRL ROANZF9342021 GEP Unpublished VV-944372	N	SYN
KCP 6.1	Commandeur I.	2021	Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF Vertify NLA2ZF9032021 GEP Unpublished VV-944367	N	SYN

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner SYN = Syngenta
~~KCP 6.1~~	~~Fortusini M.~~	~~2020~~	~~EAME Registration OXTP + MFX (A23109A) and OXTP+AZT (A22773A) for lettuce against bremia in FIELD in EU – 2020~~ ~~Syngenta Italia S.p.A.~~ ~~ITNOZF1012020~~ ~~GEP~~ ~~Unpublished~~ ~~VV-938033~~	~~N~~	~~SYN~~
KCP 6.1	Ingenerf M.	2021	Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021 BioChem agrar GmbH, Branch office Agroplan DEANZF9292021 GEP Unpublished VV-944357	N	SYN
KCP 6.1	Jatczak K.	2021	Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF Anadiag Polska PLANZF9042021 GEP Unpublished VV-944368	N	SYN
~~KCP 6.1~~	~~Marques M.~~	~~2020~~	~~Profiling & registration of EXF16939C / EXF16956C (OXTP + MFX) in onion in EAME 2019~~ ~~Syngenta España S.A.~~ ~~ESEAZF1142019~~ ~~GEP~~ ~~Unpublished~~ ~~VV-937994~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Marques M.~~	~~2020~~	~~Profiling & registration of EXF16939C / EXF16956C (OXTP + MFX) in onion in EAME 2019~~ ~~Syngenta España S.A.~~ ~~ESEAZF1132019~~ ~~GEP~~ ~~Unpublished~~ ~~VV-937993~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Oliveira M.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF~~ ~~Anadiag Portugal~~ ~~PTANZF9112021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944369~~	~~N~~	~~SYN~~

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner SYN = Syngenta
~~KCP 6.1~~	~~Palmieri N.~~	~~2020~~	~~EAME Registration OXTP + MFX (A23109A) in onion against DM in open field in EU – 2020~~ ~~Syngenta Italia S.p.A.~~ ~~ITSOZF1122020~~ ~~GEP~~ ~~Unpublished~~ ~~VV-938035~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Palmieri N.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021~~ ~~Syngenta Italia SpA~~ ~~ITSOZF2902021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944366~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Renovell A.~~	~~2020~~	~~EAME Registration OXTP + MFX (A23109A) in onion against DM in open field in EU – 2020~~ ~~SynTech Research Spain~~ ~~ESSTZF0142020~~ ~~GEP~~ ~~Unpublished~~ ~~VV-938000~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Ripaud H.~~	~~2019~~	~~EAME Profiling & registration of A22773A and EXF16956C for Lettuce against Bremia GH 2019~~ ~~Qualiphyt~~ ~~FRQUZF9312019~~ ~~GEP~~ ~~Unpublished~~ ~~VV-938009~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Ripaud H.~~	~~2020~~	~~EAME Registration of A23109A and A22773A for lettuce against bremia in GH in EU – 2020~~ ~~Qualiphyt~~ ~~FRQUZF0262020~~ ~~GEP~~ ~~Unpublished~~ ~~VV-938008~~	~~N~~	~~SYN~~
KCP 6.1	Toth F.	2021	Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021 Gemerprodukt Valice – OVD, Rimavska Sobota, Slovakia SKANZF9332021 GEP Unpublished VV-944373	N	SYN

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner SYN = Syngenta
~~KCP 6.1~~	~~Tselikis I.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021~~ ~~Agri 2000 Hellas~~ ~~GRA2ZF9262021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944363~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Tselikis I.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021~~ ~~Agri 2000 Hellas~~ ~~GRA2ZF9332021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944364~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Tsopelopoulos K.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF~~ ~~Agri2000 Hellas Ltd.~~ ~~GRA2ZF9012021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944361~~	~~N~~	~~SYN~~
~~KCP 6.1~~	~~Tsopelopoulos K.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF~~ ~~Agri2000 Hellas Ltd.~~ ~~GRA2ZF9022021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944362~~	~~N~~	~~SYN~~
KCP 6.1	Viard J.	2021	Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021 Anadiag SAS France FRANZF9312021 GEP Unpublished VV-944360	N	SYN
~~KCP 6.1~~	~~Visentin F.~~	~~2021~~	~~Efficacy trials with A13947B (MFX solo) in onion against DM Peronospora destructor – 2021~~ ~~Syngenta Italia SpA~~ ~~ITNOZF3052021~~ ~~GEP~~ ~~Unpublished~~ ~~VV-944365~~	~~N~~	~~SYN~~

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner SYN = Syngenta
KCP 6.1	Vega P.	2019	EAME Profiling & registration OXTP+AZT – Orondis Evo (A22773A) and OXTP+MFX for Lettuce against Bremia in the field 2019 Syngenta España S.A. ESSEZF3122019 GEP Unpublished VV-937997	N	SYN
KCP 6.1	Vega P.	2020	EAME Registration OXTP + MFX (A23109A) and OXTP+AZT (A22773A) for lettuce against bremia in FIELD in EU – 2020 Syngenta España S.A. ESSEZF3052020 GEP Unpublished VV-937996	N	SYN
KCP 6.1	Venneman S.	2019	EAME Profiling & registration of A22773A and EXF16956C for Lettuce against Bremia GH 2019 PSG SKW BESKZF9112019 GEP Unpublished VV-937974	N	SYN
KCP 6.1	Venneman S.	2019	EAME Profiling & registration of A22773A and EXF16956C for Lettuce against Bremia GH 2019 PSG SKW BESKZF9122019 GEP Unpublished VV-937975	N	SYN
KCP 6.1	Venneman S.	2020	EAME Registration of A23109A and A22773A for lettuce against bremia in GH in EU – 2020 PSG SKW BESKZF0062020 GEP Unpublished VV-937966	N	SYN

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner SYN = Syngenta
~~KCP 6.1~~	~~Venneman S.~~	~~2020~~	~~EAME Registration of A23109A and A22773A for lettuce against bremia in GH in EU – 2020~~ ~~PSG SKW~~ ~~BESKZF0052020~~ ~~GEP~~ ~~Unpublished~~ ~~VV-937965~~	~~N~~	~~SYN~~
KCP 6.1	Zappe C.	2021	Efficacy trials with A13947B (MFX solo) in brassicas against downy mildew in Europe OF BioChem agrar GmbH DEANZF9072021 GEP Unpublished VV-944356	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Bertin B.	2021	EAME Registration of A23109A in allium against Peronospora destructor in open field in EU – 2020 Syngenta France SAS FRBEZF0352020 GEP Unpublished VV-938002	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Cap N.	2019	Profiling & registration of EXF16939C / EXF16956C in onion in EAME 2019 PC Groententeelt Kruishoutem BEKHZF9082019 GEP Unpublished VV-937960	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Cap N.	2021	EAME Registration of A23109A and A22773A for lettuce against Bremia in FIELD in EU – 2020 PCG BEKHZF0012020 GEP Unpublished VV-937958	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Carstens H.	2020	EAME Profiling & registration OXTP+AZT – Orondis Evo (A22773A) and OXTP+MFX for Lettuce against Bremia in the field 2019 Syngenta Agro GmbH DEDSZF1452019 GEP Unpublished VV-937988	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.1 KCP 6.2 KCP 6.4.1	Chatelier B.	2020	EAME Registration of A23109A and A22773A for lettuce against Bremia in FIELD in EU – 2020 Qualiphyt – France FRQUZF0232020 GEP Unpublished VV-938007	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Commandeur I.	2019	Profiling & registration of EXF16956C / EXF16939C (OXTP + MFX) against Peronospora brassicae in brassicae in EAME 2019 Stichting Proeftuin Zwaagdijk NLZWZF9142019 GEP Unpublished VV-938046	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Darwich S.	2020	EAME Registration of A23109A against Peronospora parasitica in brassicae in EAME 2020 Inagro vzw BEINZF0032020 GEP Unpublished VV-937957	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	de Vries H.	2019	Profiling & registration of EXF16939C / EXF16956C (OXTP + MFX) in onion in EAME 2019 Proeftuin Zwaagdijk NLZWZF9062019 GEP Unpublished VV-938042	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	de Vries H.	2021	EAME Registration of A23109A in allium against Peronospora destructor in open field in EU – 2020 Proeftuin Zwaagdijk NLZWZF9042020 GEP Unpublished VV-938041	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Evenhuis B.	2020	EAME Registration of A23109A in allium against Peronospora destructor in open field in EU – 2020 Wageningen Plant Research NLPPZF9032020 GEP Unpublished VV-938040	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.1 KCP 6.2 KCP 6.4.1	Hoitink R.	2020	EAME Registration of A23109A against Peronospora parasitica in brassicae in EAME 2020 Proeftuin Zwaagdijk NLZWZF9092020 GEP Unpublished VV-938045	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2019	EAME Profiling & registration OXTP+AZT – Orondis Evo (A22773A) and OXTP+MFX for Lettuce against Bremia in the field 2019 Institut of Horticulture in Skierniewice PLIWZF1102019 GEP Unpublished VV-938058	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2020	Profiling & registration of EXF16956C / EXF16939C (OXTP + MFX) against Peronospora brassicae in brassicae in EAME 2019 Instytut Sadownictwa I Kwiaciarstwa, Skierniewice PLIWZF1122019 GEP Unpublished VV-938059	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2020	EAME Registration of A23109A (OXTP + MFX) against Peronospora parasitica in brassicae in EAME 2020 Institut of Horticulture in Skierniewice PLIWZF1072020 GEP Unpublished VV-938057	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2020	EAME Registration OXTP + MFX (A23109A) and OXTP+AZT (A22773A) for lettuce against bremia in FIELD in EU – 2020 Institut of Horticulture in Skierniewice PLIWZF1022020 GEP Unpublished VV-938054	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.1 KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2020	EAME Registration OXTP + MFX (A23109A) in onion against DM in open field in EU – 2020 Instytut Ogrodnictwa Skierniewice PLIWZF1042020 GEP Unpublished VV-938056	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Krosschell A.	2020	EAME Registration of A23109A in allium against Peronospora destructor in open field in EU – 2020 Exploras Agro Development NLEXZF9022020 GEP Unpublished VV-938037	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Martin T.	2020	EAME Registration of A23109A (OXTP + MFX) against Peronospora parasitica in brassicae in EAME 2020 Martin – Feldversuchswesen DEFMZF1022020 GEP Unpublished VV-937990	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Matusiak J.	2020	EAME Registration OXTP + MFX (A23109A) and OXTP+AZT (A22773A) for lettuce against bremia in FIELD in EU – 2020 Syngenta Polska Sp. z o.o. PLDSZF5172020 GEP Unpublished VV-938050	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Matusiak J.	2020	EAME Registration OXTP + MFX (A23109A) in onion against DM in open field in EU – 2020 Syngenta Polska Sp. z o.o. PLDSZF5202020 GEP Unpublished VV-938051	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Mesange C.	2020	EAME Registration of A23109A and A22773A for lettuce against bremia in FIELD in EU – 2020 Syngenta SAS FRCMZF0322020 GEP Unpublished VV-938003	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.1 KCP 6.2 KCP 6.4.1	Otrhalkova P.	2020	EAME Registration OXTP + MFX (A23109A) in onion against DM in open field in EU – 2020 InTec Agro Trials, s.r.o. CZITZF1052020 GEP Unpublished VV-937986	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Reinhard R.	2019	Profiling & registration of EXF16956C / EXF16939C (OXTP + MFX) against Peronospora brassicae in brassicae in EAME 2019 Syngenta Agro GmbH DEDSZF5572019 GEP Unpublished VV-937989	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Slowiak K.	2019	EAME Profiling & registration OXTP+AZT – Orondis Evo (A22773A) and OXTP+MFX for Lettuce against Bremia in the field 2019 Biochem agrar Polska Spólka z o.o. PLBCZF1082019 GEP Unpublished VV-938048	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Szymańska B.	2019	Profiling & registration of EXF16939C / EXF16956C (OXTP + MFX) in onion in EAME 2019 Uniwersytet Przyrodniczy PLUPZF1022019 GEP Unpublished VV-938063	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Venneman S.	2019	EAME Profiling & registration of A22773A and EXF16956C for Lettuce against Bremia in the field 2019 PSG SKW BESKZF9102019 GEP Unpublished VV-937973	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.1 KCP 6.2 KCP 6.4.1	Venneman S.	2020	EAME Registration of A23109A and A22773A for lettuce against bremia in FIELD in EU – 2020 PSG SKW BESKZF0042020 GEP Unpublished VV-937964	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Wachowiak P.	2020	EAME Registration OXTP + MFX (A23109A) and OXTP+AZT (A22773A) for lettuce against bremia in FIELD in EU – 2020 Eurofins Agroscience Services Sp. Z o.o PLEUZF1072020 GEP Unpublished VV-938052	N	SYN
KCP 6.1 KCP 6.2 KCP 6.4.1	Willocq B.	2019	Profiling & registration of EXF16939C / EXF16956C in onion in EAME 2019 Staphyt FRSTZF9082019 GEP Unpublished VV-938028	N	SYN
KCP 6.2 KCP 6.4.1	Bertin B.	2020	EAME Registration of A23109A and A22773A for Leek against Phytophthora porri 2020 Syngenta France SAS FRBEZF0272020 GEP Unpublished VV-938001	N	SYN
KCP 6.2 KCP 6.4.1	Descamps A.	2020	Profiling & registration of EXF16939C/EXF16956C against P. porri in leek in EAME 2019 Staphyt FRSTZF9152019 GEP Unpublished VV-938029	N	SYN
KCP 6.2 KCP 6.4.1	de Vries H.	2019	Profiling & registration of EXF16939C / EXF16956C (OXTP + MFX) in onion in EAME 2019 Proeftuin Zwaagdijk NLZWZF9072019 GEP Unpublished VV-938043	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.2 KCP 6.4.1	Hoitink R.	2021	EAME Registration of A23109A against Peronospora 151arinose in spinach in 2020 – FIELD Stichting Proeftuin Zwaagdijk NLZWZF9082020 GEP Unpublished VV-938044	N	SYN
KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2021	EAME tank mixes efficacy of OXTP (+AZT or +MFX) in onion against DM in open field in PL- 2021 The National Institute of Horticultural PLIWZF1032021 GEP Unpublished VV-938055	N	SYN
KCP 6.2 KCP 6.4.1	Jarecka-Boncela A.	2021	EAME tank mixes efficacy of OXTP (+AZT or +MFX) in onion against DM in open field in PL- 2021 The National Institute of Horticultural PLIWZF1012021 GEP Unpublished VV-938053	N	SYN
KCP 6.2 KCP 6.4.1	Kasperek M.	2020	EAME Registration OXTP + MFX (A23109A) and OXTP+AZT (A22773A) for lettuce against bremia in FIELD in EU – 2020 SynTech Research Poland PLSYZF1012020 GEP Unpublished VV-938061	N	SYN
KCP 6.2 KCP 6.4.1	Kozlowska A.	2021	EAME tank mixes efficacy of OXTP (+AZT or +MFX) in onion against DM in open field in PL- 2021 PerfectBAD PLPBZF1022021 GEP Unpublished VV-938060	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.2 KCP 6.4.1	Krosschell A.	2021	EAME Registration A23109A (OXTP+MFX) and A22773A (OXTP+AZT) for Leek against Phytophthora porri 2020 Exploras Agro Development NLEXZF9112020 GEP Unpublished VV-938039	N	SYN
KCP 6.2 KCP 6.4.1	Matusiak J.	2020	EAME Registration of A23109A (OXTP + MFX) against Peronospora parasitica in brassicae in EAME 2020 Syngenta Polska Sp. z o.o. PLDSZF5132020 GEP Unpublished VV-938049	N	SYN
KCP 6.2 KCP 6.4.1	Neukermans J.	2019	EAME Profiling & registration of A22773A and EXF16956C for Lettuce against Bremia in the field 2019 PC Groentenseelt Kruishoutem BEKHZF9122019 GEP Unpublished VV-937962	N	SYN
KCP 6.2 KCP 6.4.1	Neukermans J.	2019	EAME Profiling & registration of A22773A and EXF16956C for Lettuce against Bremia in the field 2019 PC Groentenseelt Kruishoutem BEKHZF9132019 GEP Unpublished VV-937963	N	SYN
KCP 6.2 KCP 6.4.1	Peters E.	2021	EAME Registration of A23109A against Peronospora 152arinose in spinach in 2020 – FIELD Exploras Agro Development NLEXZF9092020 GEP Unpublished VV-938038	N	SYN
KCP 6.2 KCP 6.4.1	Rivet J.	2020	Profiling & registration of EXF16939C/EXF16956C against P. porri in leek in EAME 2019 Essais + FREPZF9292019 GEP Unpublished VV-938006	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.2 KCP 6.4.1	Rivet J.	2020	EAME Registration of A23109A against Peronospora 153arinose in spinach in 2020 – FIELD Essais + FREPZF0252020 GEP Unpublished VV-938004	N	SYN
KCP 6.2 KCP 6.4.1	Rivet J.	2021	EAME Registration of A23109A and A22773A for Leek against Phytophthora porri 2020 Essais + FREPZF0272020 GEP Unpublished VV-938005	N	SYN
KCP 6.2 KCP 6.4.1	Slowiak K.	2019	Profiling & registration of EXF16956C / EXF16939C (OXTP + MFX) against Peronospora brassicae in brassicae in EAME 2019 BioChem agrar Polska Spólka z o.o. PLBCZF1022019 GEP Unpublished VV-938047	N	SYN
KCP 6.2 KCP 6.4.1	Szymańska B.	2020	EAME Registration of A23109A (OXTP + MFX) against Peronospora parasitica in brassicae in EAME 2020 Uniwersytet Przyrodniczy PLUPZF1182020 GEP Unpublished VV-938065	N	SYN
KCP 6.2 KCP 6.4.1	Szymanska B.	2019	Profiling & registration of EXF16956C / EXF16939C (OXTP + MFX) against Peronospora brassicae in brassicae in EAME 2019 Uniwersytet Przyrodniczy PLUPZF1012019 GEP Unpublished VV-938062	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	Vertebrate study Y/N	Owner SYN = Syngenta
KCP 6.2 KCP 6.4.1	Szymańska B.	2020	EAME Registration OXTP + MFX (A23109A) in onion against DM in open field in EU – 2020 Uniwersytet Przyrodniczy PLUPZF1162020 GEP Unpublished VV-938064	N	SYN
KCP 6.2 KCP 6.4.1	Venneman S.	2019	Profiling & registration of EXF16956C / EXF16939C against Peronospora 154arinose in spinach in EAME 2019 – FIELD PSG SKW BESKZF9132019 GEP Unpublished VV-937976	N	SYN
KCP 6.2 KCP 6.4.1	Venneman S.	2020	Profiling & registration of EXF16939C/EXF16956C against P. porri in leek in EAME 2019 PSG SKW BESKZF9072019 GEP Unpublished VV-937972	N	SYN
KCP 6.2 KCP 6.4.1	Venneman S.	2020	EAME Registration of A23109A and A22773A for Leek against Phytophthora porri 2020 PSG SKW BESKZF0122020 GEP Unpublished VV-937970	N	SYN
KCP 6.2 KCP 6.4.1	Venneman S.	2020	EAME Registration of A23109A against Peronospora 154arinose in spinach in 2020 – FIELD PSG SKW BESKZF0132020 GEP Unpublished VV-937971	N	SYN
KCP 6.2 KCP 6.4.1	Venneman S.	2021	EAME Registration of A23109A and A22773A for Leek against Phytophthora porri 2020 PSG SKW BESKZF0112020 GEP Unpublished VV-937969	N	SYN

Data point	Author(s)	Year	**Title** **Source** **Company Report No.** **GLP or GEP status** **Published or Unpublished** **Syngenta File No.**	**Vertebrate study Y/N**	**Owner SYN = Syngenta**
KCP 6.2 KCP 6.4.1 KCP 6.4.3	Cap N.	2020	Profiling & registration of EXF16939C/EXF16956C against P. porri in leek in EAME 2019 PC Groentenveelt Kruishoutem BEKHZF9112019 GEP Unpublished VV-937961	N	SYN
KCP 6.4.4	Furlan A.	2020	Registration trials with A23109A – taint test on leek in EU – 2020 Staphyt France FRSTZF0192020 GEP Unpublished VV-938027	N	SYN
KCP 6.4.4	Cap N.	2021	Registration trials with A23109A – taint test on leek in EU – 2020 Unpublished BEKHZF0042020 GEP Unpublished VV-937959	N	SYN
KCP 6.5.2	Jones K.	2020-2021	Oxathiapiprolin/metalaxyl-M DC (A23109A) - Phytotoxicity to Non-Target Plants Screening Test, Final Report Amendment 1 AgroChemex Ltd. Study Number: ACE-20-109 GLP Unpublished	N	SYN
KCP 6.5.2	Breedt C.	2020	A23109A – The Effectiveness of the Spray Tank Cleaning Procedure, Final Report Syngenta Crop Protection AG Analytical Development & Product Chemistry Report Number: 450796 GLP Unpublished	N	SYN

List of data submitted by the applicant and not relied on

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner
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List of data relied on not submitted by the applicant but necessary for evaluation

Data point	Author(s)	Year	Title Source Company Report No. GLP or GEP status Published or Unpublished Syngenta File No.	Vertebrate study Y/N	Owner
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