

REGISTRATION REPORT
Part B
Section 3
Efficacy Data and Information
Concise summary

Product code: A23282A
Product name: **KAYAK ERA**
Chemical active substance:
Cyprodinil, 225 g/L
Prothioconazole, 75 g/L

Central Zone
Zonal Rapporteur Member State: Poland

CORE ASSESSMENT
(New product authorization)

Applicant: XXXX
Submission date: July 2022
Evaluation date: March 2023
MS Finalisation date: December 2023

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

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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.

Version history

When	What
July 2022	dRR submitted by applicant (XXXX)
March 2023	Version evaluated by zRMS
December 2023	Version revised by zRMS to take into account comments submitted by cMS and the applicant

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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)

This is the version of dRR from July 2022, submitted by applicant in the framework of Article 33 of Regulation (EC) 1107/2009. The original text provided by applicant has been retained for transparency. The applicant's text is commented by zRMS and the comments and conclusions are placed in commenting boxes shaded in grey at the end of each chapter. Amendments in the text are highlighted in yellow.

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

Abstract

Comments of zRMS:	<p>ABSTRACT</p> <p>This evaluation concerns the registration of A23282A (Kayak Era), containing two active substances: cyprodinil (225 g/L) and prothioconazole (75 g/L) for cereal disease control in field uses, in the Central Regulatory Zone. The zRMS is Poland, cMS are Austria, Belgium, Czech Republic, Germany, Hungary, Luxembourg, the Netherlands, Poland, the Republic of Ireland, Romania, Slovenia and Slovakia.</p> <p>Cyprodinil and prothioconazole are included into Annex I of Council Directive 91/414/EEC. Currently, both compounds are included in some fungicides as single active substances and are used in many European countries.</p> <p>ZRMS confirms that the submitted trials were carried out by contractor companies and Research Institutes, officially recognized for efficacy testing of plant protection products, by the authorities of relevant countries, under the principles of Good Experimental Practice and with EPPO general guidelines and specific EPPO standards. The assessment was made following the Uniform Principles.</p> <p>Preliminary tests. The applicant did not provide preliminary tests, but to justify the benefit of using a mixture of the two actives, he presented the comparison of data on the efficacy of A23282A (Kayak Era), containing two active substances cyprodinil and prothioconazole with products including single substances, e.g. Kayak 300 EC and Proline 250 EC. In all zones, A23282A used at the rate of 2.0 L/ha gave a higher efficacy than the two active substances cyprodinil and prothioconazole applied alone. A23282A caused the strongest reduction of fungal disease severity on the leaves. It confirms that the ratio of both active substances in A23282A is correct.</p> <p>Minimum effective dose. To determine the Minimum effective dose (MED for the use of A23282A (Kayak Era) in cereal crops for foliar disease control and eyespot control on the stems the efficacy trials were conducted at the rates of 1.0, 1.5, and 2.0 L/ha, which reflects 100%, 75% and 50% of the maximum recommended rate of A23282A. In several trials, the rate of 1.8 L/ha was also tested, what corresponds to 90% of the maximum recommended rate. The Minimum Effective Dose was determined based on 216 efficacy trials, conducted across Europe.</p> <p>In most of the trials, the mean efficacy of A23282A at the rate of 2.0 L/ha was higher, in comparison to the lower dose rate, except in the cases of rye and oat, where the results were at the same level or slightly lower than after the use of 1.5 L/ha rate. It means, that A23282A use at the rate of 1.5 L/ha, under certain conditions, provided acceptable efficacy of foliar disease control. Therefore, 2.0 L/ha should be considered as the Minimum effective dose rate in cereals, although in some countries the rate of 1.5-2.0 L/ha</p>
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<p>can be considered, depending on the local conditions</p> <p>Efficacy. The efficacy of A23282A (Kayak Era), was tested in 3 climatic zones: Maritime zone, North-East zone and South-East zone, belonging to Central Regulatory zone. In the trials A23282A was used in 1 application, at the rate of 2.0 L/ha, at the growth stages between BBCH 30-59 or 30-69, depends of the crop, with the spray volume 200-300 L/ha. All the trials were carried out in accordance with EPPO general guidelines and specific EPPO guidelines. In all trials, the level of infestation by diseases on untreated plots was above 5%, so presented data were recognized as valid to evaluate the efficacy of A23282A in cereal crops.</p> <p>The efficacy of A23282A was studied in 97 trials in wheat in total (for <i>Zymoseptoria tritici</i> control – 72 trials; <i>Puccinia recondita</i> – 12 trials, <i>Puccinia striiformis</i> – 18 trials, <i>Blumeria graminis</i> – 24 trials, Eyespot – 26 trials); in 103 trials in barley (for <i>Pyrenophora teres</i> control – 56 trials, <i>Rhynchosporium secalis</i> – 22 trials, <i>Ramularia collo-cygni</i> – 19 trials, <i>Puccinia hordei</i> – 42 trials, <i>Blumeria graminis</i> – 18 trials, Eyespot – 15 trials); in 20 trials in rye (<i>Rhynchosporium secalis</i> control), in 10 trials in triticale (<i>Zymoseptoria tritici</i> control) and in 6 trials in oat (<i>Blumeria graminis</i> control)</p> <p>The results of the trials show a high efficacy of A23282A for disease control in cereal crops. The efficacy of A23282A is on the same level or higher than the reference products, so it confirms that tested fungicide meets the registration requirements in terms of effectiveness. The number of efficacy trials to support the registration of A23282A for disease control in cereal crops in Central regulatory zone, as well as in Poland, is sufficient. The number of trials for individual disease control in most zones is sufficient but in the zones where the number of trials is too low, the decision on registration should be taken by cMS.</p> <p>ZRMS suggest the authorization of A23282A (Kayak Era) for diseases control in cereal crops with sufficient number of trials, according to GAP table and if the trial number is insufficient, the cMS should decide on accepting the data from another zones or register this product as minor use, in accordance with art. 51 of Regulation (EC) No. 1107/2009.</p> <p>The yield from efficacy trials with diseases. The cereals treated with A23282A (Kayak Era), were harvested and quantity and quality of yield were determined. The yield was determined in wheat, barley, triticale, rye, and oats, where the foliar diseases or eyespot were present. The disease's infection was natural. The number of trials in each crop was varied. In wheat A23282A at early application was studied in 83 trials and at late application in 58 trials; in barley at early applications in 66 trials and late application in 69 trials; in rye in 20 trials; in triticale in 10 trials and oats in 6 trials. The grain yield of cereals was higher than from untreated control and similar to the yield of reference products. The results show a positive impact of A23282A on the yield of cereal crops across all EPPO zones and fully confirm its intended registration for disease control in cereal crops in the Central regulation zone. A23282A did not affect negatively on cereal yield under a wide range of environmental conditions.</p> <p>Effects on the quality of plants or plant products with diseases. The yield quality of cereal crops, sprayed with A23282A (Kayak Era), at the rate of 2.0 L/ha, at the growth stages BBCH 31-72, was determined in the trials with the presence of diseases, across all EPPO zones. The yield parameters such as hectolitre weight (HLW), thousand grain weight (TGW), and protein content (%), were studied after harvest. The results showed that A23282A did not effects negatively on the yield quality parameters. HLW and TGW in most trials were higher in comparison to untreated control and similar to reference products. The positive impact of A23282A on the yield quality parameters of cereal crops across EPPO zones fully confirms its intended registration for disease control in cereal crops in the Central registration zone.</p> <p>Risk of possible occurrence of the development of resistance. The modified risk and the resistance management strategy proposed by the applicant seem sufficient to manage</p>
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the risk to an acceptable level. The resistance management strategy for minimizing the risk of resistance development on cyprodinil and prothioconazole, should be included in the label of the tested product.

Phytotoxicity to host crop. The phytotoxicity of A23282A (Kayak Era), to cereals was undertaken in efficacy trials with diseases and without diseases/low symptoms of diseases. The assessments were carried out on wheat in 97 trials with diseases and 13 trials with no or low symptoms of diseases; on barley in 103 trials with diseases and 25 trials with no or low symptoms of diseases; on rye in 20 trials with diseases, only; on triticale in 10 trials with diseases and 2 trials with no or low symptoms of diseases and in oats in 6 trials with diseases and 2 trials with no or low diseases.

The phytotoxicity on cereal crops was not observed in the majority of trials and in some trials has been noted below 5%, wherein these symptoms were temporary and did not effects negatively on the yield and its quality. In some trials, the phytotoxicity symptoms exceeded 5% and were mainly observed after A23282A application at 2N rate, while in these trials after 1N rate the phytotoxicity was usually below 5%. It can be concluded that A23282A is selective to tested cereal crops. It can be concluded that submitted data on phytotoxicity to cereal crops support the registration of A23282A in the Central Regulation Zone. The number of trials both for the entire zone and for individual EPPO zones is sufficient.

The yield from the trials under disease-free conditions. The applicant presented the yield data from disease free trials (including the trials with very low infection below the minimum infection threshold) carried out in wheat (12 trials), barley (24 trials), triticale (1 trial), and oats (2 trials). In the trials, the mean yield of cereals treated A23282A at the rate of 2 L/ha, was higher than from untreated control and was comparable to or higher than the yield of the reference product. It can be concluded that A23282A has a positive impact on the yield of wheat, barley, triticale, and oats across all EPPO zones, which is a supporting element for the intended registration of this fungicide in cereal crops in the Central regulatory zone.

Effect on the quality of plants or plant products under disease-free conditions. The grain quality of cereals treated A23282A at the rate of 2 L/ha, were determined after harvest. The parameters such as: thousand grain weight (TGW), hectolitre weight (HLW) and protein content were evaluated in wheat, barley, triticale and oats. The results of the trials demonstrate no negative impact of A23282A on grain evaluated parameters, in comparison to the untreated. The data were also similar or higher to those obtained from the reference product. It can be concluded that no negative impact on the quality of cereal crops yield is an important argument for registering of A23282A in a tested crops.

Effects on transformation processes. The fungicides containing cyprodinil and prothioconazole, either in co-formulations or as a single active substance, are used for the long term in many countries all over the world, and no clear adverse effects on any relevant transformation processes were observed. ZRMS agrees with the applicant that the application of A23282A according to the label recommendations on cereal crops would not be expected to harm relevant transformation processes.

Impact on treated plants or plant products to be used for propagation. The impact of A23282A on propagating material was determined on the basis of post-harvest germination tests with seeds, collected from 19 efficacy trials carried out in winter wheat, 1 trial carried out in spring wheat, and 22 in barley, all disease free/low disease. The seeds germinating were higher or similar to untreated control and reference product, except for 1 trial in wheat and 1 trial in barley, where lower germination was noted. In can be concluded that A23282A had no adverse effect on the germination of wheat and barley seeds. ZRMS agrees with the applicant, that A23282A application on cereals, according to the label recommendations would not be expected to have an adverse effect on the relevant propagation of cereal crops.

	<p>Impact on succeeding crops. The applicant presented results of pot tests on the seedling emergence of six higher plant species (onion, wheat, sugar beet, oilseed rape, cucumber, and soybean), in which A23282A at the rate of 62.5–2000 mL/ha was applied on the soil surface, immediately after sowing the seeds of tested crops. The tests did not show any phytotoxicity on the tested crops, which can be as succeeding crops after a field failure of a crop treated with A23282A. ZRMS agrees with the applicant that A23282A does not pose a risk to succeeding crops and restrictions for application are not required.</p> <p>Impact on other plants including adjacent crops. The applicant presented the tests on vegetative vigor carried out on 6 plant species (onion, wheat, sugar beet, oilseed rape, cucumber, and soybean) treated A23282A at the rate of 62.5–2000 mL/ha, at 2-4 true leave stage. The data have shown that A23282A can cause phytotoxicity symptoms on sugar beet, after using the rate of 250 mL/ha, on soybean after 500 mL/ha, on cucumber after 1000 mL/ha, and on oilseed rape after 2000 mL/ha but the risk to cereal crops is minor. The resistant crops were onion and wheat. ZRMS recommends to enter the appropriate information into the product label.</p> <p>The proposed label claim: the application of A23282A (Kayak Era) at the rate of 2.0 L/ha (cyprodinil – 450 g/ha + prothioconazole – 150 g/ha) or 1.5-2 L/ha, for disease control in wheat, barley, triticale and rye. The fungicide should be recommended as foliar application in one treatment per season, at the growth stages at BBCH 30-69 in wheat, rye and triticale or 30-59 in barley, with water volume 100–400 L/ha.</p> <p>The water volume in the trials was 200-300 L/ha but in GAP applicant states 100-400 L/ha. Due to the varied water volume used for the spraying, cMS has to decide to recommend the rate given in GAP or may adopt the dose used in the experiments. However, it seems that the dose should not be lowered too much due to the effectiveness of fungicide. For Poland zRMS suggests 150-400 L/ha of ewater volume.</p>
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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	11a	11b	12	13	14	15
Use- No * 	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (⁽ⁱ⁾)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/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)															
AT1	Austria	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT2	Austria	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT3	Austria	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT4	Austria	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT5	Austria	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT6	Austria	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT7	Austria	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT8	Austria	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT9	Austria	durum	F	Zymoseptoria	foliar	BBCH30-69	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		wheat; TRZDU		tritici; SEPTTR	spray		b) 1		b) 2	b) 450	b) 150	400			
AT10	Austria	durum wheat; TRZDU	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT11	Austria	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT12	Austria	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT13	Austria	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT14	Austria	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT15	Austria	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT16	Austria	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT17	Austria	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT18	Austria	spring barley;	F	Oculimacula yallundae;	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		HORVS		PSDCHE											
AT19	Austria	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT20	Austria	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT21	Austria	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT22	Austria	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT23	Austria	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT24	Austria	winter barley; HORVW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT25	Austria	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT26	Austria	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT27	Austria	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT28	Austria	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
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					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
AT29	Austria	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT30	Austria	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE1	Belgium	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE2	Belgium	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE3	Belgium	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE4	Belgium	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE5	Belgium	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE6	Belgium	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE7	Belgium	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE8	Belgium	winter	F	Oculimacula	foliar	BBCH30-69	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		wheat; TRZAW		yallundae; PSDCHE	spray		b) 1		b) 2	b) 450	b) 150	400			
BE9	Belgium	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE10	Belgium	durum wheat; TRZDU	F	Puccinia striiformis; PUCGST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE11	Belgium	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE12	Belgium	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE13	Belgium	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE14	Belgium	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE15	Belgium	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE16	Belgium	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE17	Belgium	spring barley;	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		HORVS													
BE18	Belgium	spring barley; HORVS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE19	Belgium	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE20	Belgium	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE21	Belgium	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE22	Belgium	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE23	Belgium	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE24	Belgium	winter barley; HORVW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE25	Belgium	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE26	Belgium	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE27	Belgium	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
BE28	Belgium	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE29	Belgium	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE30	Belgium	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
CZ1	Czech Republic	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	Including durum wheat and spelt	
CZ2	Czech Republic	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	Including durum wheat and spelt	
CZ3	Czech Republic	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	Including durum wheat and spelt	
CZ4	Czech Republic	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	Including durum wheat and spelt	
CZ5	Czech Republic	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ6	Czech Republic	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ7	Czech Republic	winter wheat;	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZAW													
CZ8	Czech Republic	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ13	Czech Republic	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ14	Czech Republic	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ15	Czech Republic	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ16	Czech Republic	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ17	Czech Republic	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ18	Czech Republic	spring barley; HORVS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ19	Czech Republic	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ20	Czech Republic	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
CZ21	Czech Republic	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ22	Czech Republic	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ23	Czech Republic	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ24	Czech Republic	winter barley; HORVW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ25	Czech Republic	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ26	Czech Republic	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ27	Czech Republic	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ28	Czech Republic	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ29	Czech Republic	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ30	Czech Republic	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
CZ35	Czech Republic	spring wheat;	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	Including durum wheat and spelt	

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZAS													
CZ36	Czech Republic	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
DE1	Germany	Wheat; TRZSS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring wheat, winter wheat, durum wheat and spelt	
DE2	Germany	Wheat; TRZSS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring wheat, winter wheat, durum wheat and spelt	
DE3	Germany	Wheat; TRZSS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring wheat, winter wheat, durum wheat and spelt	
DE4	Germany	Wheat; TRZSS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring wheat, winter wheat, durum wheat and spelt	
DE13	Germany	Barley; HORVX	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring barley and winter barley	
DE14	Germany	Barley; HORVX	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring barley and winter barley	
DE15	Germany	Barley; HORVX	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring barley and winter barley	

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
DE16	Germany	Barley; HORVX	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring barley and winter barley	
DE17	Germany	Barley; HORVX	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring barley and winter barley	
DE18	Germany	Barley; HORVX	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring barley and winter barley	
DE25	Germany	Rye; SECCE	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring rye and winter rye	
DE27	Germany	Oat; AVESS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring oat and winter oat	
DE29	Germany	Triticale; TTLSS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***	Including spring triticale and winter triticale	
HU1	Hungary	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU2	Hungary	spring wheat; TRZAS	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU3	Hungary	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU4	Hungary	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
HU5	Hungary	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU6	Hungary	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU7	Hungary	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU8	Hungary	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU13	Hungary	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU14	Hungary	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU15	Hungary	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU16	Hungary	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU17	Hungary	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU18	Hungary	winter	F	Pyrenophora teres;	foliar	BBCH30-59	a) 1	NA	a) 1.5-2	a) 338-450	a) 113-150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (⁽ⁱ⁾)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVW		PYRNTE	spray		b) 1		b) 1.5-2	b) 338-450	b) 113-150	400			
HU19	Hungary	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU20	Hungary	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU21	Hungary	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU22	Hungary	winter barley; HORVW	F	Ramularia collo-cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
IE1	Ireland	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE2	Ireland	spring wheat; TRZAS	F	Puccinia striiformis; PUCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE3	Ireland	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE4	Ireland	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE5	Ireland	winter wheat;	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZAW													
IE6	Ireland	winter wheat; TRZAW	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE7	Ireland	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE8	Ireland	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE9	Ireland	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE10	Ireland	durum wheat; TRZDU	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE11	Ireland	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE12	Ireland	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE13	Ireland	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE14	Ireland	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
IE15	Ireland	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE16	Ireland	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE17	Ireland	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE18	Ireland	spring barley; HORVS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE19	Ireland	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE20	Ireland	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE21	Ireland	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE22	Ireland	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE23	Ireland	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE24	Ireland	winter	F	Oculimacula	foliar	BBCH30-59	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVW		yallundae; PSDCHE	spray		b) 1		b) 2	b) 450	b) 150	400			
IE25	Ireland	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE26	Ireland	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE27	Ireland	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE28	Ireland	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE29	Ireland	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE30	Ireland	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU1	Luxembourg	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU2	Luxembourg	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU3	Luxembourg	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU4	Luxembourg	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
LU5	Luxembourg	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU6	Luxembourg	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU7	Luxembourg	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU8	Luxembourg	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU9	Luxembourg	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU10	Luxembourg	durum wheat; TRZDU	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU11	Luxembourg	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU12	Luxembourg	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU13	Luxembourg	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU14	Luxembourg	spring	F	Rhynchosporium	foliar	BBCH30-59	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVS		secalis; RHYNSE	spray		b) 1		b) 2	b) 450	b) 150	400			
LU15	Luxembourg	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU16	Luxembourg	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU17	Luxembourg	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU18	Luxembourg	spring barley; HORVS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU19	Luxembourg	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU20	Luxembourg	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU21	Luxembourg	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU22	Luxembourg	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU23	Luxembourg	winter barley;	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No *	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		HORVW													
LU24	Luxembourg	winter barley; HORVW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU25	Luxembourg	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU26	Luxembourg	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU27	Luxembourg	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU28	Luxembourg	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU29	Luxembourg	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU30	Luxembourg	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL1	Netherlands	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL2	Netherlands	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL3	Netherlands	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
NL4	Netherlands	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL5	Netherlands	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL6	Netherlands	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL7	Netherlands	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL8	Netherlands	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL9	Netherlands	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL10	Netherlands	durum wheat; TRZDU	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL11	Netherlands	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL12	Netherlands	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL13	Netherlands	spring	F	Pyrenophora teres;	foliar	BBCH30-59	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVS		PYRNTE	spray	(April – July)	b) 1		b) 2	b) 450	b) 150	400			
NL14	Netherlands	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL15	Netherlands	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL16	Netherlands	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL17	Netherlands	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL18	Netherlands	spring barley; HORVS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL19	Netherlands	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL20	Netherlands	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL21	Netherlands	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL22	Netherlands	winter barley;	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59 (April –	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		HORVW				July)									
NL23	Netherlands	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL24	Netherlands	winter barley; HORVW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL25	Netherlands	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL26	Netherlands	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30- 69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL27	Netherlands	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL28	Netherlands	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL29	Netherlands	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL30	Netherlands	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL31	Netherlands	winter wheat;	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (⁽ⁱ⁾)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZAW													
NL32	Netherlands	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
NL33	Netherlands	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL1	Poland	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL2	Poland	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	-	
PL3	Poland	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL4	Poland	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	-	
PL5	Poland	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL6	Poland	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL7	Poland	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
PL8	Poland	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL13	Poland	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL14	Poland	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	-	
PL15	Poland	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL16	Poland	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL17	Poland	spring barley; HORVS	F	Ramularia collo-cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL18	Poland	spring barley; HORVS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	-	
PL19	Poland	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL20	Poland	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL21	Poland	winter	F	Blumeria graminis;	foliar	BBCH30-59	a) 1	NA	a) 1.5-2	a) 338-450	a) 113-150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVW		ERYSGR	spray		b) 1		b) 1.5-2	b) 338-450	b) 113-150	400			
PL22	Poland	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL23	Poland	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL24	Poland	winter barley; HORVW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL25	Poland	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	Minor use under art. 33	
PL26	Poland	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL27	Poland	Oat, spring; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL28	Poland	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***	-	
PL29	Poland	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL30	Poland	winter triticale; TTLWI	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL44	Poland	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
PL45	Poland	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO1	Romania	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO2	Romania	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO3	Romania	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO4	Romania	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO5	Romania	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO6	Romania	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO7	Romania	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO8	Romania	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO13	Romania	spring	F	Pyrenophora teres;	foliar	BBCH30-59	a) 1	NA	a) 1.5-2	a) 338-450	a) 113-150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVS		PYRNTE	spray		b) 1		b) 1.5-2	b) 338-450	b) 113-150	400			
RO14	Romania	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO15	Romania	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO16	Romania	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO17	Romania	spring barley; HORVS	F	Ramularia collo-cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO18	Romania	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO19	Romania	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO20	Romania	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO21	Romania	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO22	Romania	winter barley;	F	Ramularia collo-cygni;	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		HORVW		RAMUCC											
SK1	Slovakia	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK2	Slovakia	spring wheat; TRZAS	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK3	Slovakia	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK4	Slovakia	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK5	Slovakia	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK6	Slovakia	winter wheat; TRZAW	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK7	Slovakia	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK8	Slovakia	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK9	Slovakia	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
SK10	Slovakia	durum wheat; TRZDU	F	Puccinia striiformis; PUCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK11	Slovakia	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK12	Slovakia	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK13	Slovakia	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK14	Slovakia	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK15	Slovakia	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK16	Slovakia	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK17	Slovakia	spring barley; HORVS	F	Ramularia collo-cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK18	Slovakia	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK19	Slovakia	winter	F	Rhynchosporium	foliar	BBCH30-59	a) 1	NA	a) 1.5-2	a) 338-450	a) 113-150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		barley; HORVW		secalis; RHYNSE	spray		b) 1		b) 1.5-2	b) 338-450	b) 113-150	400			
SK20	Slovakia	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK21	Slovakia	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK22	Slovakia	winter barley; HORVW	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SI1	Slovenia	spring wheat; TRZAS	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI2	Slovenia	spring wheat; TRZAS	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI3	Slovenia	spring wheat; TRZAS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI4	Slovenia	spring wheat; TRZAS	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI5	Slovenia	winter wheat; TRZAW	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI6	Slovenia	winter wheat;	F	Puccinia striiformis;	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (⁽ⁱ⁾)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZAW		PUC CST											
SI7	Slovenia	winter wheat; TRZAW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI8	Slovenia	winter wheat; TRZAW	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI13	Slovenia	spring barley; HORVS	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI14	Slovenia	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI15	Slovenia	spring barley; HORVS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI16	Slovenia	spring barley; HORVS	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI17	Slovenia	spring barley; HORVS	F	Ramularia collo- cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI18	Slovenia	winter barley; HORVW	F	Pyrenophora teres; PYRNTE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI19	Slovenia	winter barley; HORVW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
SI20	Slovenia	winter barley; HORVW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI21	Slovenia	winter barley; HORVW	F	Puccinia hordei; PUCCHD	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI22	Slovenia	winter barley; HORVW	F	Ramularia collo-cygni; RAMUCC	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT35	Austria	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT36	Austria	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT37	Austria	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE31	Belgium	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE32	Belgium	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE33	Belgium	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
DE30	Germany	Wheat;	F	Puccinia recondita;	foliar	BBCH30-69	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***	Including spring	

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZSS		PUCCRE	spray		b) 1		b) 2	b) 450	b) 150	400		wheat, winter wheat, durum wheat and spelt	
HU25	Hungary	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU26	Hungary	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU27	Hungary	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
IE35	Ireland	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE36	Ireland	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE37	Ireland	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU31	Luxembourg	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU32	Luxembourg	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU33	Luxembourg	durum	F	Puccinia recondita;	foliar	BBCH30-69	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No.*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		wheat; TRZDU		PUCCRE	spray		b) 1		b) 2	b) 450	b) 150	400			
NL34	Netherlands	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL32	Netherlands	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL33	Netherlands	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69 (April – July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
RO27	Romania	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO28	Romania	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO29	Romania	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK27	Slovakia	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30- 69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK28	Slovakia	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK29	Slovakia	durum wheat;	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZDU													
SI33	Slovenia	spring wheat; TRZAS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI34	Slovenia	winter wheat; TRZAW	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI35	Slovenia	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
HU14	Hungary	spring barley; HORVS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
Minor uses according to Article 51 (zonal uses)															
NL34	Netherlands	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April–July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL35	Netherlands	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69 (April–July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL36	Netherlands	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69 (April–July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL37	Netherlands	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69 (April–July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
PL9	Poland	durum	F	Zymoseptoria	foliar	BBCH30-69	a) 1	NA	a) 1.5-2	a) 338-450	a) 113-150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (i)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		wheat; TRZDU		tritici; SEPTTR	spray		b) 1		b) 1.5-2	b) 338-450	b) 113-150	400			
PL10	Poland	durum wheat; TRZDU	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL11	Poland	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL12	Poland	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL31	Poland	spring rye; SECCS	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL32	Poland	spring rye; SECCS	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL33	Poland	spring rye; SECCS	F	Fusarium culmorum; FUSACU	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL34	Poland	durum wheat; TRZDU	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL35	Poland	durum wheat; TRZDU	F	Fusarium sp.; FUSASP	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL36	Poland	spring triticale; TTLISO	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL37	Poland	spring rye;	F	Puccinia	foliar	BBCH30-69	a) 1	NA	a) 1.5-2	a) 338-450	a) 113-150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (⁽ⁱ⁾)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		SECCS		striaformis; PUCGST	spray		b) 1		b) 1.5-2	b) 338-450	b) 113-150	400			
PL38	Poland	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL39	Poland	spelt; TRZSP	F	Puccinia striaformis; PUCGST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL40	Poland	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL41	Poland	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL42	Poland	spelt; TRZSP	F	Puccinia recondita; PUCCRE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
PL43	Poland	spelt; TRZSP	F	Fusarium sp.; FUSASP	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
Minor uses according to Article 33 (zonal uses)															
AT31	Austria	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT32	Austria	spelt; TRZSP	F	Puccinia striaformis; PUCGST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT33	Austria	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
AT34	Austria	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
HU9	Hungary	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU10	Hungary	durum wheat; TRZDU	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU11	Hungary	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU12	Hungary	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU23	Hungary	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
HU24	Hungary	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
IE31	Ireland	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE32	Ireland	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE33	Ireland	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
IE34	Ireland	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
RO9	Romania	durum wheat;	F	Zymoseptoria tritici;	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		TRZDU		SEPTTR											
RO10	Romania	durum wheat; TRZDU	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO11	Romania	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO12	Romania	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO23	Romania	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO24	Romania	spelt; TRZSP	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO25	Romania	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
RO26	Romania	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK23	Slovakia	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK24	Slovakia	spelt; TRZSP	F	Puccinia striiformis; PUC CST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SK25	Slovakia	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (^f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
SK26	Slovakia	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 1.5-2 b) 1.5-2	a) 338-450 b) 338-450	a) 113-150 b) 113-150	100- 400	N/A***		
SI9	Slovenia	durum wheat; TRZDU	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI10	Slovenia	durum wheat; TRZDU	F	Puccinia striiformis; PUCGST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI11	Slovenia	durum wheat; TRZDU	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI12	Slovenia	durum wheat; TRZDU	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI23	Slovenia	spring rye; SECCS	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI24	Slovenia	winter rye; SECCW	F	Rhynchosporium secalis; RHYNSE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI25	Slovenia	Oat, spring ; AVESP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI26	Slovenia	Oat, winter; AVESW	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-59	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI27	Slovenia	spring triticale; TTLSO	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI28	Slovenia	winter	F	Zymoseptoria	foliar	BBCH30-69	a) 1	NA	a) 2	a) 450	a) 150	100-	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No*	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (f)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
		triticale; TTLWI		tritici; SEPTTR	spray		b) 1		b) 2	b) 450	b) 150	400			
SI29	Slovenia	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI30	Slovenia	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI31	Slovenia	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
SI32	Slovenia	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE34	Belgium	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE35	Belgium	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE36	Belgium	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
BE37	Belgium	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
HU28	Hungary	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
HU29	Hungary	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

1	2	3	4	5	6	7	8	9	10	11a	11b	12	13	14	15
Use- No *	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I**	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Application				Application rate				PHI (days)	Remarks: e.g. g safener/synergist per ha (⁽ⁱ⁾)	zRMS Conclusion (efficacy)
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product / ha a) max. rate per appl. b) max. total rate per crop/season	g cyprodinil/ha a) max. rate per appl. b) max. total rate per crop/season	g prothioconazole/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
HU30	Hungary	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
HU31	Hungary	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU34	Luxembourg	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU35	Luxembourg	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU36	Luxembourg	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
LU37	Luxembourg	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL34	Netherlands	spelt; TRZSP	F	Zymoseptoria tritici; SEPTTR	foliar spray	BBCH30-69 (April-July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL35	Netherlands	spelt; TRZSP	F	Puccinia striiformis; PUCCST	foliar spray	BBCH30-69 (April-July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL36	Netherlands	spelt; TRZSP	F	Blumeria graminis; ERYSGR	foliar spray	BBCH30-69 (April-July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		
NL37	Netherlands	spelt; TRZSP	F	Oculimacula yallundae; PSDCHE	foliar spray	BBCH30-69 (April-July)	a) 1 b) 1	NA	a) 2 b) 2	a) 450 b) 450	a) 150 b) 150	100- 400	N/A***		

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

- ** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application
- *** N/A stands for 'Not Applicable'; The PHI is covered by the conditions of use and/or the vegetation period remaining between the application of the plant protection product and the use of the commodity (e.g. harvest) and/or the setting of a PHI in days is not required

Column 15: zRMS conclusion.

A	Acceptable
R	Acceptable with further restriction
C	To be confirmed by cMS
IN	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 A23282A containing cyprodinil and prothioconazole

Cyprodinil was included into Annex I of Council Directive 91/414/EEC (2006/64/CE of 18 July 2006) and approved in accordance with Regulation (EC) No. 1107/2009 by Commission Implementing Regulation (EU) No. 540/2011 of May 2011.

Prothioconazole was included into Annex I of Council Directive 91/414/EEC (2008/44/CE of 4 April 2008) and approved in accordance with Regulation (EC) No. 1107/2009 by Commission Implementing Regulation (EC) No. 540/2011 of May 2011.

The SANCO reports for cyprodinil (SANCO/10014/2006 final rev 1 – 09/07/2010) and prothioconazole (SANCO/3923/07 – final from December 2007 and updated on 26 January 2021) are considered to provide the relevant review information or a reference to where such information can be found.

The Commission Implementing Regulations (EU) for cyprodinil and prothioconazole provide specific provisions which need to be considered by the applicant in the preparation of their submission and by the MS prior to granting an authorisation.

For the implementation of the uniform principles of Annex VI, the conclusions of the review report on cyprodinil and prothioconazole, and in particular Appendices I and II thereof, as finalised in the Standing Committee on the Food Chain and Animal Health on 04.04.2006 for cyprodinil and on 22.01.2008 for prothioconazole shall be taken into account. Consideration of active substances for Annex I inclusion does not include an evaluation of efficacy. Therefore there are no concerns to address arising from the inclusion directive of cyprodinil and prothioconazole relating to efficacy.

The data and crop extrapolation argumentation presented in this dossier fully support the registration of A23282A for the control of:

- *Zymoseptoria tritici*, *Puccinia recondita*, *Puccinia striiformis*, *Blumeria graminis* and Eyespot on winter and spring wheat, durum wheat.
- *Pyrenophora teres*, *Rhynchosporium secalis*, *Ramularia collo-cygni*, *Puccinia hordei*, *Blumeria graminis* and Eyespot on winter and spring barley.
- *Zymoseptoria tritici* on winter and spring triticale.
- *Rhynchosporium secalis* on winter and spring **rye**.
- *Blumeria graminis* on winter and spring oats.

The intended member states for an authorisation of the product in the Central Regulatory Zone are:

Central regulatory zone: Austria, Belgium, Czech Republic, Germany, Hungary, Ireland, Luxemburg, the Netherlands, Poland (zRMS), Romania, Slovakia, Slovenia.

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

Report:	KCP 6 / 01 Biological Assessment Dossier A23282A
	Veeva No. VV-894835

Description of active substances

Cyprodinil (N-(4-cyclopropyl-6-methyl-pyrimidin-2-yl)-aniline) is a systemic and contact fungicide belonging to the anilino-pyrimidines fungicide family. Cyprodinil was introduced by Ciba-Geigy in 1994 for the control of several fungal diseases on cereal, grape, vegetable and orchard crops.

Biochemical studies indicate that the cyprodinil inhibits the biosynthesis of the sulphured aminoacid methionin by blocking the enzyme cystathionine- β -lyase (Fritz et al., 1997).

This compound offers a broad spectrum of fungicidal activity against cereal diseases like powdery mildew or several leaf spot diseases, *Botrytis cinerea* on grapes, vegetables and field crop. (Knauf-Beiter et al., 1995). Another strength of cyprodinil is its activity against *Venturia inaequalis*, *Alternaria spp.* and *Monilia spp.* on deciduous fruits (Heye et al., 1994).

Acting mainly as a contact fungicide but it has also shown good systemic uptake into plants after foliar application. Once inside the plant cyprodinil is transported acropetally in the xylem.

Site of action studies have shown cyprodinil to be effective by inhibiting penetration of the pathogen into the leaf and mycelial growth if penetration has already occurred (Heye et al., 1994). This dual activity ensures a high level of performance in both protective and curative programs.

Cyprodinil is been registered against several fungal diseases in cereals, vegetables, tobacco, grapes etc. in several EU countries, under the trade name KAYAK 300 EC or CHORUS WG or other formulation.

Table 3.2-1 below shows the countries with the registration numbers where KAYAK 300 EC is currently registered.

Table 3.2-1: List of countries in the EU where cyprodinil (KAYAK 300 EC) is registered

Country	Trade Name	Reg.Number	EPPO-zone	Regulatory zone
CZ	KAYAK	4655/0	MAR	Central
DK	KAYAK	1-202/72288	MAR	Northern
FR	KAYAK	2100052	MAR/MED	Southern
DE	KAYAK	006306-00	MAR	Central
GR	QUALY (MCW-225 300 EC	60399	MED	Southern
HU	QUALY	04.2/942/1/2013	SE	Central
IRE	KAYAK	05476	MAR	Central
IT	QUALY	15200	MED	Southern
PL	QUALY 300 EC	R-154/2013	NE	Central
PT	QUALY	AV0551	MED	Southern
SR	CIPRODEX	321-01-2057/2018-11	SE	Non EU
SK	QUALY 300 EC	18-00320-AU	SE	Central
ES	QUALY	25720	MED	Southern
SE	KAYAK	4980	MAR	Northern
GB	KAYAK	14847	MAR	Central

Prothioconazole

Prothioconazole is a synthetic compound of the triazolinthione family of compounds. It is a broad spectrum systemic fungicide of the group of triazoles, with curative, preventative and eradicated action. It can be used as both a seed treatment and a foliar treatment. After absorption it moves into cells of the target organisms, effecting sterol biosynthesis and thereby disrupting membrane structure. This ultimately effects hyphal growth and germ tube elongation. Fungi susceptible to prothioconazole include Early leaf spot (*Mycosphaerella arachidis*), eyespot, *Fusarium* spp., powdery mildew, net blotch, phoma leaf spot, *Rhynchosporium secalis*, *Sclerotinia sclerotiorum*, *Sclerotium rolfsii*, *Zymoseptoria tritici*, *Septoria nodorum*, rust and tan spot. Prothioconazole is approved for use on barley, durum wheat, oats, oilseed rape (winter), rye (winter), and wheat. Prothioconazole is sold in combination with numerous other fungicides, including benzovindiflupyr, bifaxen, spiroxamine, tebuconazole, fluoxastrobin, trifloxystrobin and fluopyram.

Prothioconazole has been registered against fungal disease in cereals, forage grasses, oilseed crops, protein crops, pulses, crops for seed production, etc. in several EU countries under the trade name PROLINE 250 EC.

Table 3.2-2 below shows the countries with the registration numbers where PROLINE 250 EC is currently registered.

Table 3.2-2: List of countries in the EU where prothioconazole (PROLINE 250 EC) is registered

Country	Trade Name	Reg. Number	EPPO-zone	Regulatory zone
AT	CURBATUR 250 EC	3771/901	MAR	Central
BE	PROLINE 250 EC	9805P/B	MAR	Central
BG	PARADISE	n/a	SE	Southern
CZ	PROLINE 250 EC	4523-1	MAR	Central
DE	PROLINE 250 EC	025287-00	MAR	Central
DK	PROLINE 250 EC	18-473/72200	MAR	Northern
EE	PROLINE	717	NE	Northern
FI	PROLINE 250 EC	2788	NE	Northern
FR	JOAO	2060116	MAR / MED	Southern
GR	PROLINE 250 EC	60838	MED	Southern
HR	PROLINE 250 EC	UP/I-320-20/17-03/357	SE	Central
HU	PROLINE	6300/2172-2/2020 6300/1205-1/2020	SE	Central
IRE	PROLINE 250 EC	3786	MAR	Central
IT	PRAKTIS	17751	MED	Southern
LT	PROLINE	AS2-6F(2018)	NE	Northern
LV	CURBATUR	655	NE	Northern
NL	PROLINE 250 EC	W3-12725	MAR	Central
PL	EXACTRIS	R-30/2020wu	NE	Central
PT	PRAKTIS	AV1485	MED	Southern
RO	PROLINE 250 EC	457PC	SE	Central
SE	PROLINE 250 EC	4688	MAR	Northern
SK	PROLINE 250 EC	06-02-0768	SE	Central

Country	Trade Name	Reg. Number	EPPO-zone	Regulatory zone
SL	PRAKTIS	U34330-16/20/11	SE	Central
SP	PRAKTIS	ES-01135	MED	Southern
GB	PROLINE	12084	MAR	Central

Description of the plant protection product

A23282A is an emulsion concentrate (EC) formulation containing 225 g/l cyprodinil and 75 g/l prothioconazole.

The product is recommended one time at 1.5 - 2.0 L/ha at BBCH 30-69.

In all cereal crops, the proposed maximum rate of A23282A is 2.0 litre product per ha with a maximum of 1 application per season which will deliver a maximum of 450 g cyprodinil and 150 g prothioconazole per ha and season. In order to support the proposed use of A23282A, data is presented from trials conducted over two seasons (2020 and 2021) across 15 countries from the Maritime, the North-East and the South-East EPPO zones. The combination of cyprodinil and prothioconazole in A23282A will provide excellent foliar control against the various fungal diseases claimed on the label in winter, spring and durum wheat, barley, rye, triticale and in oats with acceptable crop safety.

A23282A is an emulsifiable concentrate (EC) formulation containing 225 g/L cyprodinil and 75 g/L prothioconazole. It is a foliar fungicide treatment proposed for disease control in winter and spring wheat, Durum wheat, winter and spring barley, winter and spring rye, winter and spring triticale and winter and spring oats. The proposed maximum label rate for use on all crops is 2.0 L product/hectare, with a maximum of one application per season, which will deliver 450 g cyprodinil + 150 g prothioconazole per hectare. A23282A provides broad spectrum control against target fungal pathogens with good crop safety.

A23282A is proposed for use for the control of:

- *Zymoseptoria tritici*, *Puccinia recondita*, *Puccinia striiformis*, *Blumeria graminis* and Eyespot on winter and spring wheat, durum wheat.
- *Pyrenophora teres*, *Rhynchosporium secalis*, *Ramularia collo-cygni*, *Puccinia hordei*, *Blumeria graminis* and Eyespot on winter and spring barley.
- *Zymoseptoria tritici* on winter and spring triticale.
- *Rhynchosporium secalis* on winter and spring ye.
- *Blumeria graminis* on winter and spring oats.

In order to support the proposed uses data are presented from trials conducted over two seasons in 2020 and 2021 in a wide range of European countries in the Maritime EPPO zone (Belgium, Denmark, France, Germany, Ireland, the Netherlands, and the United Kingdom), the South-East EPPO zone (Bulgaria, Croatia, Hungary, Romania, Slovenia) and the North East EPPO zone (Latvia, Lithuania and Poland).

Table 3.2-3: Details of the active substances

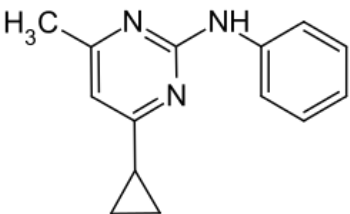
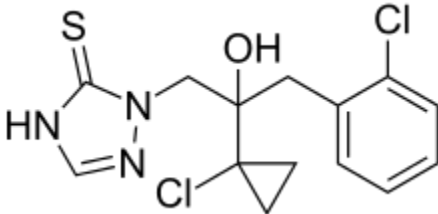
Active substance	Cyprodinil	Prothioconazole
Concentration	225 g/L	75 g/L
Mode of action	Methionin biosynthesis (FRAC D1)	Demethylase inhibitor (DMI)
Plant translocation	contact, systemic	contact, systemic
Biological action	Fungicide, preventive and curative	Fungicide, preventive and curative
Chemical group	Anilino-pyrimidines	Triazoles
CAS No.	121552-61-2	178928-70-6
IUPAC name:	4-Cyclopropyl-6-methyl-N-phenylpyrimidin-2-amin	2-[2-(1-chlorocyclopropyl)-3-(2-chlorophenyl)-2-hydroxypropyl]-1,2-dihydro-1,2,4-triazole-3-thione
Formula:	C ₁₄ H ₁₅ N ₃	C ₁₄ H ₁₅ Cl ₂ N ₃ OS
Structure:		
Molar Mass:	225.29 g mol ⁻¹	344.26 g mol ⁻¹
Melting point:	75.9 °C	141.8 °C
Solubility at 25 °C:	Not soluble in water, soluble in ethanol and acetone	Not soluble in water, soluble in ethanol and ethylacetat
Boiling point:	>360 °C at 101.325 kPa	>487 °C
Vapour pressure:	0.51 µPa (25 °C)	0.4 µPa (25 °C)

Table 3.2-4: Simplified table of requested uses of A23282A

Crop	Target (s)	Max. number of applications	Max. Individual Dose
Winter wheat	<i>Blumeria graminis</i> <i>Zymoseptoria tritici</i> <i>Puccinia striiformis</i> <i>Oculimacula yallundae</i> <i>P. recondita</i>	1	2 L/ha
Winter barley	<i>Blumeria graminis</i> <i>Puccinia hordei</i> <i>Oculimacula yallundae</i> <i>Pyrenophora teres</i> <i>Ramularia collo-cygni</i>	1	2 L/ha

Crop	Target (s)	Max. number of applications	Max. Individual Dose
	<i>Rhynchosporium secalis</i>		
Winter rye	<i>Rhynchosporium secalis</i>	1	2 L/ha
Winter triticale	<i>Zymoseptoria tritici</i>	1	2 L/ha
Spring wheat	<i>Blumeria graminis</i> <i>Zymoseptoria tritici</i> <i>Puccinia striiformis</i> <i>Oculimacula yallundae</i> <i>P. recondita</i>	1	2 L/ha
Spring barley	<i>Blumeria graminis</i> <i>Puccinia hordei</i> <i>Oculimacula yallundae</i> <i>Pyrenophora teres</i> <i>Ramularia collo-cygni</i> <i>Rhynchosporium secalis</i>	1	2 L/ha
Spring rye	<i>Rhynchosporium secalis</i> <i>Blumeria graminis</i> <i>Fusarium culmorum</i> <i>Puccinia recondita</i>	1	2 L/ha
Spring triticale	<i>Zymoseptoria tritici</i> <i>Puccinia striiformis</i>	1	2 L/ha
Oat (winter)	<i>Blumeria graminis</i>	1	2 L/ha
Oat (spring)	<i>Blumeria graminis</i>	1	2 L/ha
Durum	<i>Blumeria graminis</i> <i>Zymoseptoria tritici</i> <i>Puccinia striiformis</i> <i>Puccinia recondita</i> <i>Oculimacula yallundae</i> <i>Fusarium sp.</i>	1	2 L/ha

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

The importance of cereals in countries for which registration is proposed

The harvested production of cereals (including rice) across the EU-27 was 299.3 million tonnes in 2019. This was 25.3 million tonnes more than the drought-affected level in 2018, the equivalent of a 9.2 % upswing. However, the harvested production of cereals remained below the record 308.2 million tonnes harvested in 2014 (Figure 3.2-1).

France harvested 71.2 million tonnes of cereals in 2019, a little less than one quarter (23.8 %) of the EU-27's total harvested production. Germany harvested 44.3 million tonnes (14.8 % of the EU total), Romania a further 30.4 million tonnes of cereals (10.2 % of the EU total) and Poland harvested 29.0 million tonnes (9.7 % of the EU total).

The rebound in the harvested production of cereals was prominent across central and northern Europe. Among the main cereal producing Member States, the harvested production of cereals was higher in France (+13.8 %), Germany (+16.7 %) and Poland (+8.3 %). The sharpest rates of rebound were in the Baltic and Scandinavian Member States as well as Cyprus. By contrast, harvested production in many southern European Member States was lower, including in Romania (-3.6 %) and in Spain (-18.6 %).

The EU-27 harvested 131.8 million tonnes of common wheat and spelt in 2019, the equivalent of 44.0 % of all cereal grains harvested (Figure 3.2-2). This was 16.2 million tonnes more than in 2018, an increase of 14.0 %. The main reason for this upturn was the bounce back from the drought in 2018, although the cultivated area of common wheat and spelt was also higher (+3.7 %).

The harvested production of grain maize and corn-cob-mix for the EU-27 was 70.1 million tonnes in 2019, 1.1 million tonnes more than in 2018. Higher production levels in most Member States offset the relatively sharp decline (-6.6 %) in Romania, which remained the main producer of this cereal and accounted for one quarter of the EU's harvested production.

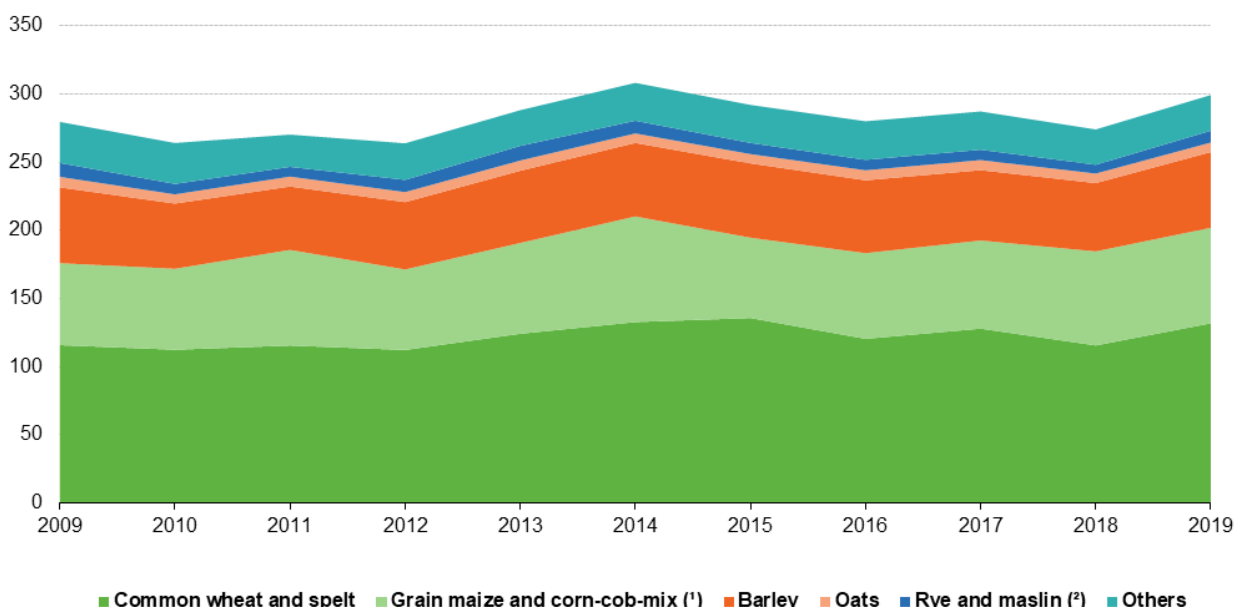
In 2019, the EU's harvested production of barley was 10.8 % higher than in 2018 at 55.6 million tonnes, despite little change (-0.1 %) in the area cultivated. The rebound from the drought-affected levels of 2018 was notable in many Member States including France (+22.8 %), and Germany (+21.0 %). The less favourable weather conditions on the Iberian Peninsula, however, resulted in a lower harvested production of barley in Spain (-18.9 %).

It was a similar scenario for rye and maslin, the harvested production of which across the EU was one third higher (+33.3 %) in 2019 than in 2018. This recovery was also underpinned by a strong expansion in the area cultivated; a further 273 000 hectares of rye and maslin were harvested in 2019 than in 2018, an increase of 13.4 %. Production levels rebounded in a number of key producer countries like Germany (+47.1 %), Poland (+12.2 %) and Denmark (+85.4 %).

By contrast, the harvested production of oats in 2019 was little changed from the level in 2018 (+0.4 %). The reduction in cultivated area (-6.9 %, or 177 000 hectares) was offset by higher yields in many Member States. Harvested production levels bounced back somewhat in Poland (+5.7 %), but strongly in Finland (+43.0 %) and Sweden (+84.6 %). Elsewhere, there were strong declines in harvested production, such as in Spain (-45.6 %) and Germany (-10.1 %).

Production of main cereals, EU-27, 2009-2019

(million tonnes)



Note: 'Rye and maslin' includes mixture of rye with other winter sown cereals. 'Others' includes rice, triticale and sorghum.

(1) Includes estimate for Denmark, 2009.

(2) Includes estimate for Italy, 2013.

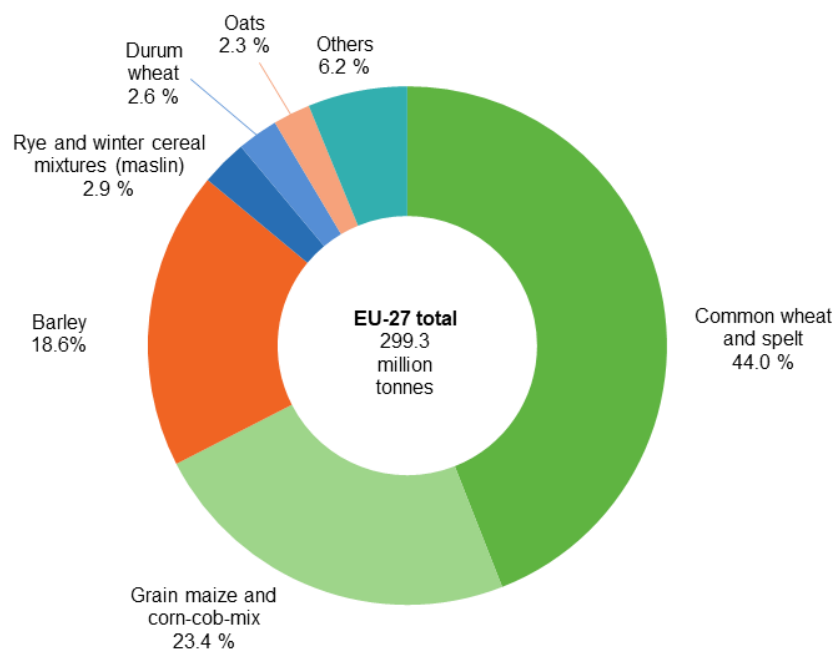
Source: Eurostat (online data code: apro_cpn1)

eurostat

Figure 3.2-1: Production of main cereals in EU-27 countries, 2009-2019

Main cereals, EU-27, 2019

(% share of EU-27 total cereals production)



Note: 'Total cereals' includes cereals for the production of grain (including seed). 'Others' includes rice, spring cereal mixtures, triticale, sorghum and buckwheat, millet, canary seed, etc.

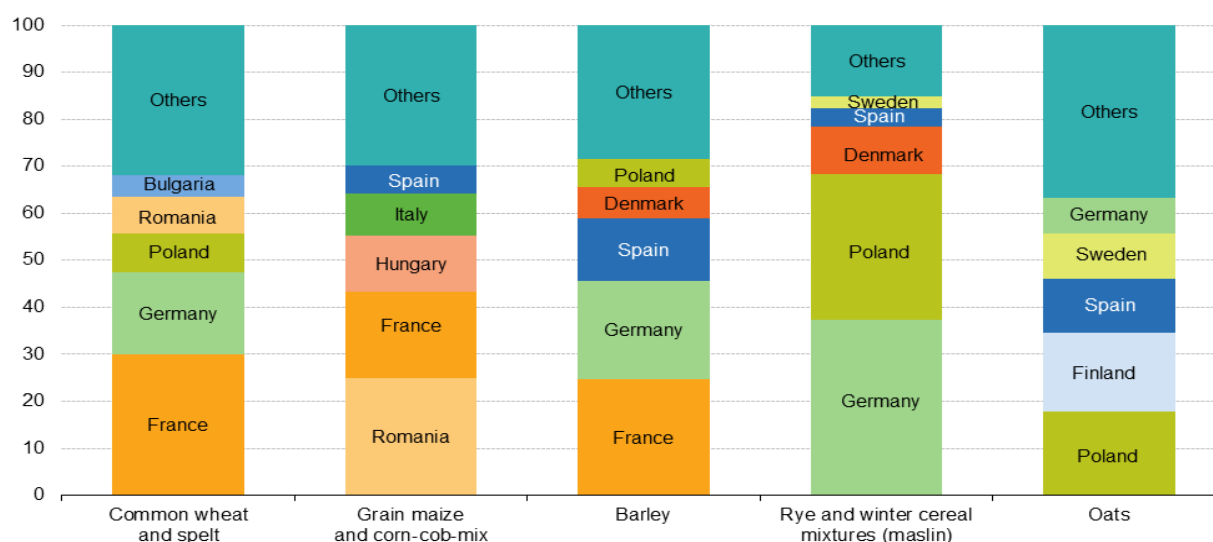
Source: Eurostat (online data code: apro_cpn1)

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Figure 3.2-2: Distribution of main cereal production in EU-27 countries, 2009-2019

Production of cereals by main producing Member States, 2019

(% share of EU-27 totals)



Source: Eurostat (online data code: apro_cpn1)

(source: EUROSTAT, 2020)

eurostat 

Figure 3.2-3: Production of cereals by main producing member states, 2019

Table 3.2-5: Area of cultivation of winter wheat in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	259.86	1562.6	6.01
Belgium	192.8	1751.4	9.08
Czech Republic	774.6	4799.3	6.2
Germany	2758.7	21751.6	7.88
Hungary	899.75	4861.8	5.4
Ireland	34.97	281.4	8.05
Luxemburg	11.43	69.5	6.08
Netherlands	92.46	829.2	8.97
Poland	2014.6	10010.85	4.81
Romania	2125.8	6348.5	2.99
Slovakia	347.4	1919.3	5.63
Slovenia	-	-	-

Table 3.2-6: Area of cultivation of winter barley in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	103.5	712.4	6.88
Belgium	39.9	307.7	7.71
Czech Republic	114.63	698.0	6.09
Germany	1304.0	8776.6	6.73
Hungary	235.0	1327.1	5.65
Ireland	51.03	401.4	7.87
Luxemburg	4.0	21.8	5.48
Netherlands	9.62	71.5	7.43
Poland	240.0	1112.7	4.43
Romania	371.0	982.3	2.65
Slovakia	50.5	285.0	5.6
Slovenia	-	-	-

Table 3.2-7: Area of cultivation of rye (including winter and summer rye) in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	42.7	217.9	5.1
Belgium	0.7	2.8	3.94
Czech Republic	31.4	172.4	5.48
Germany	n.a		
Hungary	25.7	82.1	3.2
Ireland	0	0	0
Luxemburg	1.0	4.7	4.58
Netherlands	1.8	7.6	4.26
Poland	950.0	3029.9	3.02
Romania	10.3	28.5	2.77
Slovakia	12.5	48.6	3.84
Slovenia	0.8	3.4	4.13

n.a.=not available

Table 3.2-8: Area of cultivation of triticale (including winter and summer triticale) in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	56.2	328.3	5.84
Belgium	5.1	29.0	5.71
Czech Republic	42.1	213.26	5.07
Germany	341.3	2036.3	5.97
Hungary	72.8	298.9	4.1
Ireland	0	0	0
Luxemburg	4.5	25.8	5.71
Netherlands	1.2	5.46	4.68
Poland	1262.7	5050.3	3.86
Romania	75.5	262.9	3.48
Slovakia	10.0	35.8	3.59
Slovenia	5.6	28.3	5.05

Table 3.2-9: Area of cultivation of oats in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	20.1	84.0	4.17
Belgium	4.0	18.95	4.76
Czech Republic	46.7	183.36	3.92
Germany	157.1	721.9	4.6
Hungary	23.8	68.9	2.9
Ireland	25.0	177.6	7.11
Luxemburg	1.6	8.19	5.16
Netherlands	1.6	7.58	4.84
Poland	516.3	1557.24	2.87
Romania	103.1	199.0	1.93
Slovakia	12.3	33.0	2.71
Slovenia	0.8	2.71	3.36

Table 3.2-10: Area of cultivation of durum wheat in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	16.5	78.87	4.78
Belgium	0.0	-	-
Czech Republic	0.0	-	-
Germany	34.0	183.0	5.38
Hungary	26.52	117.0	4.41
Ireland	0.0	-	-
Luxemburg	0.13	0.52	4.13
Netherlands	0.0	-	-
Poland	0.0	-	-
Romania	6.17	19.72	3.19
Slovakia	33.95	173.51	5.12
Slovenia	0.0	-	-

Table 3.2-11: Area of cultivation of spring wheat in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	2.65	11.24	4.26
Belgium	2.2	12.63	5.66
Czech Republic	23.95	103.16	4.31
Germany	42.8	237.5	5.55
Hungary	7.19	31.31	4.35
Ireland	11.44	79.84	6.98
Luxemburg	0.37	2.31	6.24
Netherlands	16.45	102.67	6.24
Poland	456.95	1717.42	3.61
Romania	13.65	41.67	3.05
Slovakia	11.77	40.49	3.45
Slovenia	-	-	-

Table 3.2-12: Area of cultivation of spring barley in the relevant European countries, 2020

Country	Area of cultivation (1000 ha)	Harvested product (1000 t)	Yield (t/ha)
Austria	31.31	152.46	4.87
Belgium	4.1	19.50	4.74
Czech Republic	217.28	1118.27	5.15
Germany	363.3	1992.6	5.49
Hungary	24.63	106.39	4.32
Ireland	140.36	935.29	6.66
Luxemburg	2.0	11.18	5.52
Netherlands	28.76	174.67	6.07
Poland	738.0	2646.7	3.43
Romania	66.6	138.57	2.08
Slovakia	80.37	394.36	4.91
Slovenia	-	-	-

Description of the target pests

Table 3.2-13: Glossary of pests mentioned in the dossier

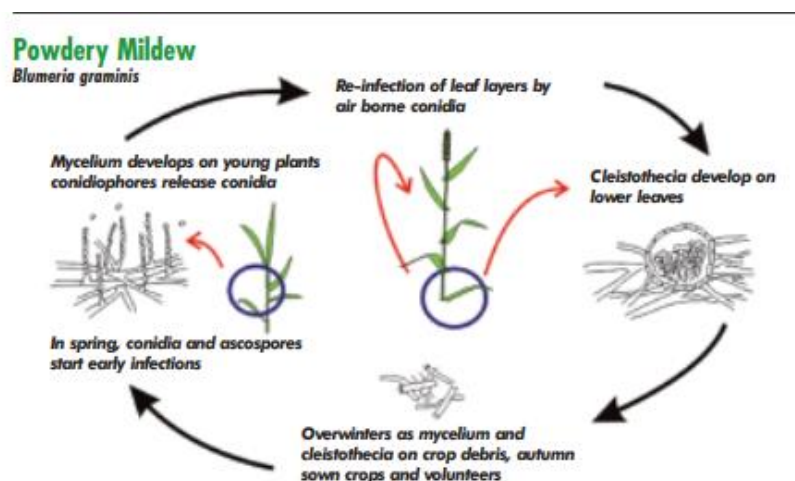
EPPO code	Scientific name	Common name
ERYSGR	<i>Blumeria graminis</i>	Powdery mildew
PUCCST	<i>Puccinia striiformis</i>	Yellow (stripe) rust
PUCCRE	<i>Puccinia recondita</i>	Brown leaf rust of rye and triticale
PUCCHD	<i>Puccinia hordei</i>	Brown leaf rust of barley
SEPTTR	<i>Zymoseptoria tritici</i>	Septoria leaf blotch
PYRNTR	<i>Pyrenophora tritici-repentis</i>	Tan Spot, Drechslera Leaf Spot
PSCDHE PSDCHE	<i>Oculimacula (=Tapesia) yallundae</i> (= <i>Pseudocercospora</i> <i>herpotrichoides</i>)	Eyespot of cereals
RAMUCC	<i>Ramularia collo-cygni</i>	Ramularia leaf spot
RHYNSE	<i>Rhynchosporium secalis</i>	Leaf scald of cereals

Powdery mildew (*Blumeria graminis*) on wheat, barley, rye and triticale

Powdery mildew is a fungal disease caused by *Blumeria graminis* f.sp. *tritici* on wheat and triticale and *Blumeria graminis* f.sp. *hordei* on barley.

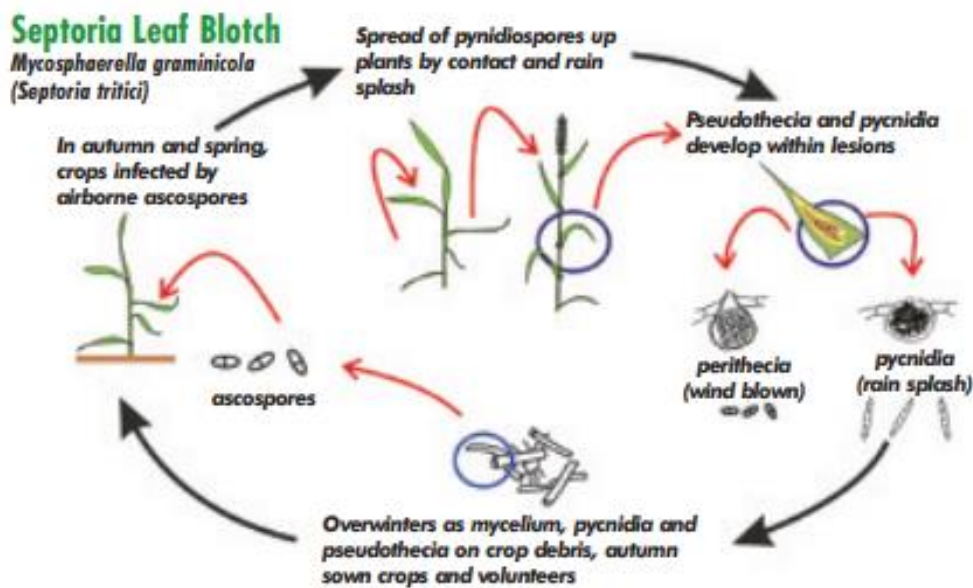
Mildew is one of the most widespread foliar diseases of cereals in Europe. Its white pustular growth reduces the photosynthetic area of the leaf tissue and under conducive conditions can affect up to 80% of the foliage. On wheat it can also affect the ear where it causes a further reduction in the plants photosynthetic area.

On early sown crops the disease may develop in the autumn and on light land severe early attacks may reduce plant and/or tiller number. In the spring the disease will develop when conditions become conducive as the temperature increases and may continue to develop throughout the season. High levels of inoculum often build up in the bottom of the crop during the spring and if these are not controlled severe epidemics are likely to occur later in the season. Such attacks of powdery mildew during the summer reduce yield by affecting grain filling and hence can have a substantial adverse effect on thousand grain weight and specific weight.



Septoria leaf blotch (*Zymoseptoria tritici*) on wheat

Zymoseptoria tritici occurs mainly on wheat, but also occasionally on rye, triticale and some grass species. Symptoms of Septoria can be seen very early in the growing season in most years. On young autumn-sown wheat, water-soaked patches which quickly turn brown and necrotic may be evident by early December and throughout the winter on the lowest leaves. These contain the visible black pycnidia which are the most characteristic feature of *S. tritici*. Pycnidia are particularly common on dead over-wintering leaves of winter wheat. Lesions on the mature plant are brown and are sometimes restricted by veins giving a rectangular appearance. The black pycnidia become more visible in the lesions as the symptoms develop. Lesions may coalesce leading to large areas of necrotic brown tissue. The disease cycle of *S. tritici* is similar to that of *S. nodorum*, although *S. tritici* can go through its life cycle at slightly lower temperatures with 15-20°C as the optimum and requires longer periods of high humidity to initiate infection. The lower leaves of winter-sown crops are normally infected by long distance spread of airborne ascospores throughout the winter and early spring. In the spring the lower leaves of the most susceptible varieties are infected and have actively sporulating lesions. Most disease spread to upper leaves occurs by rain-splash from the lower-leaves during heavy rainfall. Physical spread can occur without heavy rainfall, particularly when leaves 3 and 4 overlap the upper leaves as they emerge. This is the most important foliar disease on winter wheat in the UK. Losses of 50% have been reported in severely affected crops. This is largely because of the predominance of varieties which are susceptible to the disease.

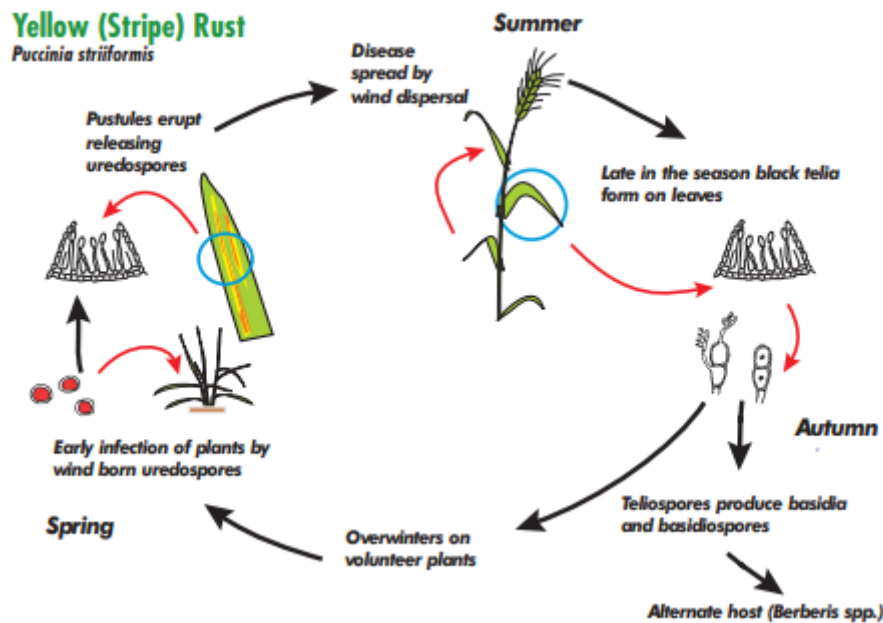


Yellow rust (*Puccinia striiformis*) on wheat, spelt and triticale

There are distinct forms of the fungus that are specific to different cereal crops, i.e. *P. striiformis* f.sp. *tritici* attacks wheat whereas *P. striiformis* f.sp. *hordei* can only attack barley. Within the forms of *P. striiformis* there are a number of different races that can only attack certain varieties. However, most frequently wheat and triticale are affected by *P. striiformis*. Yellow rust is a foliar disease which can cause very severe yield reductions. Development of yellow rust is favoured by cool humid conditions. It appears as yellow powdery pustules on the leaf surface, arranged in stripes parallel to the veins in the leaf. It can affect plants at all stages of growth. On seedlings, pustules are scattered across the leaves in no order. Spores can be found on both the leaves and the heads of wheat plants. Severe infections quickly give rise to chlorosis, and later necrosis, of leaves resulting in desiccation in May/June if the weather conditions are warm and dry. In severe attacks yellow rust infection of the ears can occur with the formation of masses of spores between the grain and the glumes.

Yellow rust over-winters and reproduces on cereal shoots and wild grasses. Depending on the sowing season (autumn crops or spring crops), infection occurs in autumn-winter or in spring through urediniospores forming on the shoots. Teliospores are darker and form when the cereal is mature. Spores are blown onto growing wheat crops, thereby infecting young seedlings. The spores germinate on the leaf surface and penetrate the plant directly, forming a root-like structure that is used to gather nutrients. This structure produces more spores and these can be dispersed very long distances by the wind and through physical contact throughout the season.

The disease can develop very quickly causing severe damage and up to 60% yield loss.

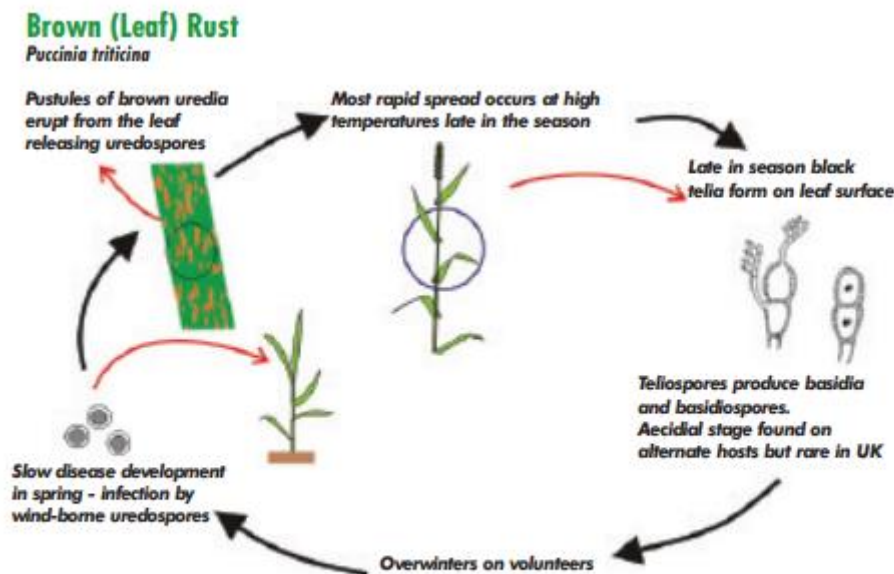


Brown rust (*Puccinia recondita*) on wheat, spelt, rye and triticale

Brown rust is a serious fungal disease affecting cereal crops caused by the rust fungus *Puccinia recondita*. It is the most prevalent of all the wheat rust diseases, occurring in nearly all areas where wheat is grown. Especially moist conditions promote the development of the disease.

Brown rust appears as small circular to oval brown pustules on the upper surface of the leaf. These pustules are scattered across the leaves randomly or may group into patches in serious cases. Spores develop on the leaves and leaf sheaths; they do not form on the upper stem or heads of wheat plants. Under favourable environmental conditions, rust spores germinate and penetrate the wheat leaf. After around 10 – 14 days of infection, the fungi will begin to sporulate and the symptoms will become visible on the leaves. *Puccinia recondita* has an asexual and sexual life cycle. In order to complete its sexual life cycle *P. recondita* requires a second host *Thalictrum* spp. which it will over-winter on. In places where *Thalictrum* does not grow, the pathogen will only undergo its asexual life cycle and will over-winter as mycelium or uredinia.

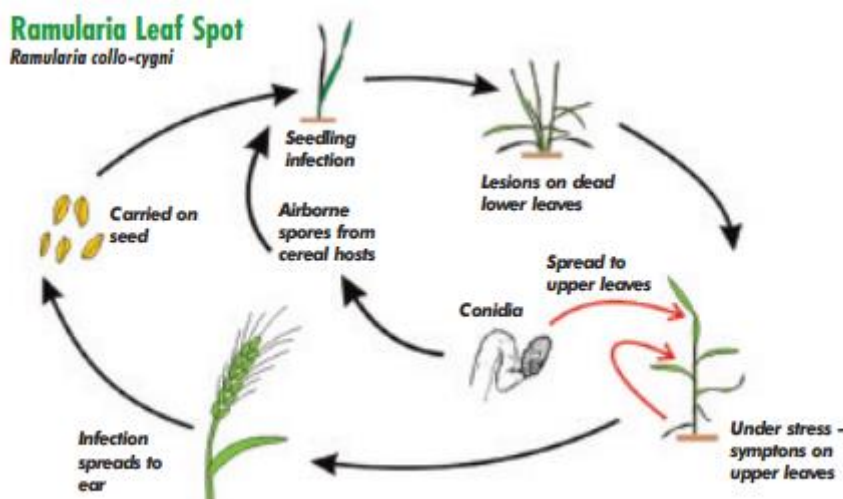
Brown rust is most destructive on winter wheat, probably because this allows the pathogen to over-winter. Early infections can lead to high yield loss because infected leaves die earlier and all the nutrients are directed to the growing fungi. Infection can also cause grain to shrivel. Usually onset of the disease is slow but accelerated in temperatures above 15°C, making it a disease of the mature cereal plant in summer, usually too late to cause significant damage in temperate areas. However, under favourable conditions the disease can develop quickly and losses of between 5 and 20% are normal but may reach up to 60% in severe cases.



Ramularia leaf spot (*Ramularia collo-cygni*) on barley

Ramularia collo-cygni is meanwhile recognized as an important pathogen of barley in northern Europe. It is characterized by abundant small brown speckles usually with a yellow halo occurring in most cases late in the growing season. The spots are often confused with physiological spotting caused by abiotic factors. *R. collo-cygni* can sporulate abundantly, spores are small, about 1/10 of the spores of *Blumeria graminis* which has airborne spores. In addition, *R. collo-cygni* spores are equipped with warts and can easily attach to any air particle.

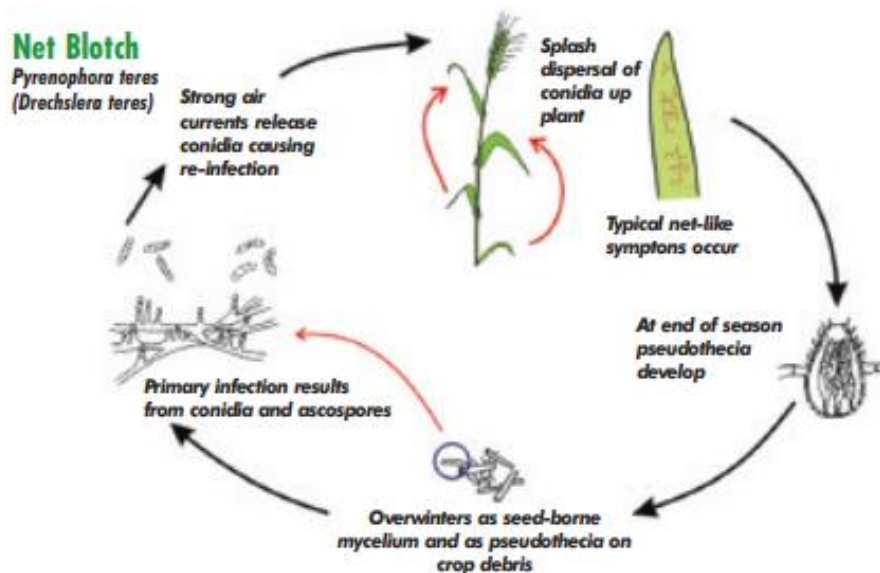
The fungus produces a number of anthraquinone toxins called rubellins, which act as host nonspecific toxins with photodynamic activity. These toxins induce lipid peroxidation and are possibly the cause of the chlorosis and necrosis observed in leaves infected with *R. collo-cygni*. The fact that the fungus can remain latent in barley plants until flowering, coupled with its very slow growth *in vitro*, makes it difficult to detect in crops. The severity of the disease depends upon the variety and the weather conditions between tillering and ear emergence. Dull wet weather during this period usually leads to a higher incidence of the disease. The necrotic leaf spotting and premature leaf senescence, leads to loss of green leaf area and can cause substantial economical damage to barley quality and quantity.



Net blotch (*Pyrenophora teres*) on barley

Net blotch is a foliar disease of barley which is found predominantly on winter sown varieties. The typical symptom of brown net like lesions can affect a high proportion of the leaf tissue, giving reduced photosynthetic area which in turn causes reductions in yield and quality.

The primary source of over wintering inoculum is infected stubble and crop debris. In early spring the disease is seen on the lower leaves of the crop and unless controlled can develop into a severe epidemic.



Dwarf rust (*Puccinia hordei*) on barley

Dwarf rust is the most important rust disease of barley and is widely distributed where the crop is grown. It does not cause severe losses on a widespread and regular basis but it is locally important, particularly in the cool temperature regions of barley cultivation. Especially the intensification of barley cultivation in the cool, temperate regions has resulted in a considerable increase in the disease in the last 10–15 years.

Pustules of leaf rust are small and circular, producing a mass of orange-brown powdery spores. They appear on the leaf sheaths and predominantly on the upper leaf surfaces. With severe infections late in the season, some stem, glume and awn infection can occur, and there is often general tissue chlorosis and eventual necrosis associated with these late infections. Late in the season, blackish-brown telia are formed. These often occur in stripes, particularly on leaf sheaths, and they are long-covered by the epidermis; they also occur on stems, heads, and leaf blades. Leaf rust develops rapidly between 15 and 22°C when moisture is not limiting. Following infection, new pustules and spores may be produced within 8 days. Urediniospores are wind-borne and can be spread long distances. Teliospore development occurs later in the season either within uredial sori or within separate telial sori. The teliospores are thick-walled and can persist between crops.

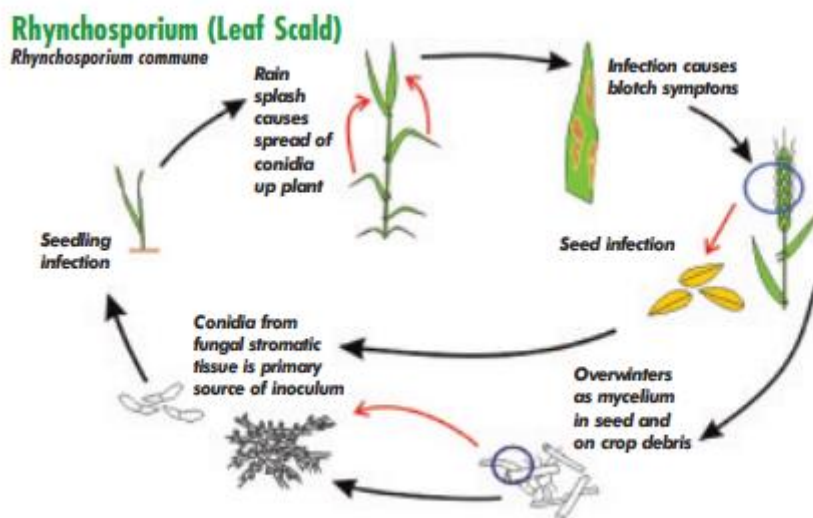
Effects on the host depend on the duration and severity of infection, but it is in the nature of biotrophy that there are general adverse effects on photosynthesis, respiration, transport of nutrients, and water relationships. Spring barley, especially if late-sown, is particularly affected as it is at risk when the pathogen is actively developing. Early, severe infections can thus result in reduced root and shoot growth, which gives rise to stunting and to reduction in fertile tiller numbers and numbers of grains per ear. Epidemics tend to occur late, and consequently the most common effect is on grain size and quality.

Leaf blotch (*Rhynchosporium secalis*) on barley, triticale and rye

Leaf blotch is usually a foliar disease of barley which can cause severe yield reductions, but often also affects rye and triticale. Like other foliar diseases it reduces the photosynthetic area of the plant, which leads to poorly filled grain giving reductions in grain yield and quality.

The fungus over winters on stubble, debris and autumn sown crops from which conidia disperse onto healthy plant tissue. As with other foliar diseases the disease develops on the lower parts of the crop in spring, from which inoculum can spread to cause serious epidemics.

Crop losses where the disease is severe can be up to 30-40%.



Eyespot (*Oculimacula yallundae*) on wheat and barley

Early symptoms can be confused with sharp eyespot and *Fusarium* spp. Frequently, all that is visible is a brown smudge on the leaf sheath at the stem-base. In early-sown crops eyespot lesions may penetrate one or two leaf sheaths, making identification more conclusive. Lesions caused by *Fusarium* spp. and sharp eyespot are generally confined to the outer leaf sheath. Later in the season eyespot symptoms become more distinct and appear as an eye-shaped lesion with a dark margin, usually below the first node. Later still, the margin of the eyespot lesion is often dark and diffuse with a central black 'pupil' occasionally visible. In severe attacks of eyespot, white-heads ("bleached" ears) are commonly seen scattered through the crop, later in the season these may become colonised by sooty moulds. Eyespot tends to be more severe if plants are also suffering from takeall.

The fungus over-winters on infected stubble, volunteers and grass weeds acting as sources of inoculum. It can survive on stubble for up to three years, so a break from cereals will not necessarily reduce eyespot risk in following crops. Spores are produced throughout autumn and winter, posing a threat to early-sown crops. Infection occurs at temperatures above 5°C and during wet periods. Spores are rain splashed short distances from infected stubble. The development of symptoms following infection takes 6-8 weeks, depending upon environmental conditions. Eyespot can be a serious problem in continuous cereals, where inoculum may build up from year to year. The sexual stage of both eyespot fungi may play an important part in the pathogen life cycle. This stage of the fungus is produced on stubble at the end of the season and after harvest, ascospores may travel long distances and infect emerging or young plants.

Eyespot is often underestimated in importance because few farmers ever look at the stem bases of crops at the milky ripe stage or later - when severe eyespot can often be seen. Moderate or severe eyespot infections

can cause yield loss in the order of 10-30%, even in the absence of lodging. Where eyespot is severe, lodging can occur - causing problems in harvesting and frequently a reduction in Hagberg Falling Number.

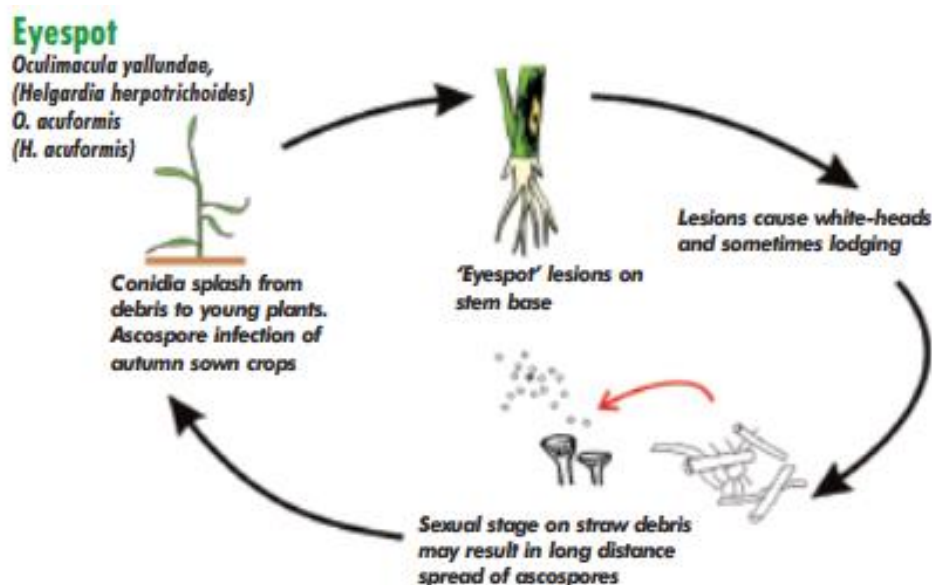


Table 3.2-14 presents the major and minor status of the intended uses of A23282A.

Table 3.2-14: Major / minor status of intended uses (for all cMS and zRMS)

Crop and/or situation	Crop status		Pests or group of pests controlled	Pest status	
	Major	Minor		Major	Minor
Wheat (TRZSS)	AT, BE, CZ, DE, IE, NL, HU, RO, SL, SK, PL	-	<i>Zymoseptoria tritici</i> (SEPTTR) <i>Puccinia recondita</i> (PUCCRE) <i>Puccinia striiformis</i> (PUCCST) <i>Blumeria graminis</i> (ERYSGR)	AT, BE, CZ, DE, IE, NL, HU, RO, SL, SK, PL	-
			Eyespot (<i>Oculimacula yallundae</i>) (PSDCHE)	AT, BE, CZ, DE, IE, NL, RO, SL, SK, PL	HU
			<i>Fusarium sp.</i> (FUSASP) (only durum wheat)	PL	-
Barley (HORVX)	AT, BE, CZ, DE, IE, NL, HU, RO, SL, SK, PL	-	<i>Pyrenophora teres</i> (PYRNTE) <i>Puccinia hordei</i> (PUCCHD) <i>Blumeria graminis</i> (ERYSGR)	AT, BE, CZ, DE, IE, NL, RO, SL, SK, PL	-

Crop and/or situation	Crop status		Pests or group of pests controlled	Pest status	
	Major	Minor		Major	Minor
			<i>Rhynchosporium secalis</i> (RHYNSE) <i>Ramularia collo-cygni</i> (RAMUCC) Eyespot (<i>Oculimacula yallundae</i>) (PSDCHE)	AT, BE, CZ, DE, IE, NL, RO, SL, SK, PL -	HU
Rye (SECCE)	AT, CZ, DE, SK, PL	BE, IE, NL, RO, SL	<i>Rhynchosporium secalis</i> (RHYNSE)	AT, CZ, DE, SK, PL	BE, IE, NL, RO, SL
			<i>Puccinia recondita</i> (PUCCRE) <i>Fusarium culmorum</i> (FUSACU) <i>Blumeria graminis</i> (ERYSGR)	PL	
Triticale (TTLRI)	AT, DE, HU, SK, PL	BE, CZ, IE, NL, RO, SL	<i>Zymoseptoria tritici</i> (SEPTTR)	AT, DE, HU, SK, PL	BE, CZ, IE, NL, RO, SL
			<i>Puccinia striiformis</i> (PUCCST)	AT, DE, HU, SK, PL	BE, CZ, IE, NL, RO, SL
Oat (AVESA)	AT, BE, CZ, DE, IE, SK, PL	NL, HU, RO, SL	<i>Blumeria graminis</i> (ERYSGR)	AT, BE, CZ, DE, IE, SK, PL	NL, HU, RO, SL

Compliance with the Uniform Principles

The overall assessment presented in this dossier was performed according to the Uniform Principles. All the trials were conducted by GEP recognized testing units and according to EPPO guidelines. All trials summarized in the present document were considered as reliable and valid.

Supporting information from earlier formulations of the active substance or similar active substances

All data summarised within this Biological Assessment Dossier has been generated with the same emulsifiable concentrate (EC) containing 225 grams per litre (g/l) cyprodinil and 75 grams per litre (g/l) prothioconazole, identified by the product code A23282A. Information on the detailed composition of A23282A can be found in the confidential dossier of this submission (Registration Report - Part C).

Comments of zRMS:	ZRMS states that the active substances cyprodinil and prothioconazole, their mode of actions, the plant protection product A23282A (Kayak Era), pathogens characteristics and area of cereals cultivation were widely and clearly described. ZMRS recognized the status of crops and pests for intended uses as presented by the applicant in the table. If crop status or pest status in the individual countries are different than in the table zRMS asks cMS about such information.
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Information on trials submitted (3.1 Efficacy data)

The trials implemented and reported to support effectiveness of A23282A in this dossier are presented in

Table 3.2-15 below and Table 3.2-16 provides details of the reference standard used within the trials.

Table 3.2-15: Presentation of trials (efficacy trials, preliminary trials...)

Crop	Target	Country	Years	Type of trial*	Number of trials				All GEP Trials
					MAR zone	MED zone	SE zone	NE zone	
Wheat	<i>Zymoseptoria tritici</i>	BE	2020	E, MED	1				
		BG	2020 2021	E, MED E, MED			1 6		
		DE	2020 2021	E, MED E, MED	4 2				
		DK	2020 2021	E E, MED	1 4				
		FR	2020-2021 2020-2021 2021	E, MED E E, MED	4 5 -				
		GB	2021	E, MED	1				
		HR	2021	E, MED			2		
		HU	2020 2021	E, MED E, MED			1 1		
		LT	2020-2021 2020	E, MED E				3 1	
		LV	2021	E, MED				1	
		PL	2020-2021 2020-2021	E, MED E				10 2	
		RO	2021	E, MED			5		
		SL	2020 2021	E, MED E			1 1		
	TOTAL				22	-	18	17	-
	<i>Puccinia recondita</i>	BG	2020 2021	E E			1 1		
		DE	2020 2021	E E	1 1				
		DK	2021	E	1				
		FR	2020 2021	E E					
		HR	2021	E			1		

Crop	Target	Country	Years	Type of trial*	Number of trials				All GEP Trials
					MAR zone	MED zone	SE zone	NE zone	
		HU	2020 2021	E E			1 1		
		PL	2020	E				2	
		RO	2021	E			2		
		TOTAL			3	-	7	2	-
	<i>Puccinia striiformis</i>	BE	2020 2021	E E	1 1				
		BG	2020 2021	E E			1 1		
		DE	2020 2021	E E	2 1				
		FR	2020-2021 2021	E E	4 -				
		UK	2021	E	2				
		LV	2021	E				1	
		PL	2021	E				3	
		RO	2021	E			1		
		TOTAL			11	-	3	4	-
	<i>Blumeria graminis</i>	BG	2021	E			2		
		DE	2021	E	3				
		DK	2021	E	1				
		FR	2021	E	2				
		HU	2021	E			2		
		LT	2020 2021	E E				2 2	
		LV	2021	E				1	
		PL	2020 2021	E E				2 2	
		TOTAL			6	-	4	9	-
	Eyespot	DE	2020 2021	E, MED E, MED	2 2				
		DK	2020	E, MED	1				
		FR	2020 2021	E, MED E, MED					
		UK	2020 2021	E, MED E, MED	1 1				
		LT	2021	E, MED				2	
		LV	2021	E, MED				2	
		PL	2021	E, MED				5	

Crop	Target	Country	Years	Type of trial*	Number of trials				All GEP Trials
					MAR zone	MED zone	SE zone	NE zone	
		RO	2021	E, MED			2		
		SK	2021	E, MED			2		
		TOTAL			7	-	4	9	-
Barley	<i>Pyrenophora teres</i>	BE	2021	E, MED	1				
		BG	2020 2021	E, MED E, MED			6 3		
		DE	2020 2021	E, MED E, MED	2 2				
		DK	2021	E, MED	3				
		FR	2020 2021 2021	E, MED E, MED E	2 3 1				
		UK	2021	E	1				
		HR	2020 2021	E, MED E, MED			2 2		
		HU	2020 2021	E, MED E, MED			1 1		
		LT	2021	E, MED				1	
		LV	2021	E, MED				3	
		PL	2020 2021	E, MED E, MED				8 3	
		RO	2020 2021	E, MED E, MED			1 4		
		SL	2020 2021	E, MED E, MED			1 1		
		TOTAL			15	-	22	15	-
	<i>Rhynchosporium secalis</i>	DE	2021	E, MED	2				
		DK	2021	E, MED	3				
		FR	2020	E, MED	1				
		UK	2021	E, MED	1				
		HU	2021	E, MED			2		
		IE	2021	E, MED	1				
		PL	2020 2021	E, MED E, MED				3 3	
		RO	2021	E, MED			1		
		TOTAL			8	-	3	6	-
	<i>Ramularia collo-cygni</i>	DE	2020	E, MED	2				
		FR	2020 2021	E, MED E, MED	1 1				

Crop	Target	Country	Years	Type of trial*	Number of trials				All GEP Trials
					MAR zone	MED zone	SE zone	NE zone	
			2021	E	-				
		UK	2020	E, MED	1				
		HR	2021	E, MED			2		
		IE	2021	E, MED	1				
		NL	2021 2021	E, MED E	1 1				
		PL	2020 2021	E, MED E, MED				2 2	
		RO	2021	E, MED			2		
		SL	2020 2021	E, MED E, MED			1 2		
		TOTAL			8	-	7	4	-
	<i>Puccinia hordei</i>	BE	2021	E	1				
		BG	2020 2021	E E			2 1		
		DE	2020 2021	E E	1 2				
		DK	2021	E	2				
		FR	2020 2021	E E	1 1				
		UK	2020 2021	E E	1 1				
		HR	2020	E			1		
		HU	2020 2021	E E			3 1		
		LV	2021	E				2	
		NL	2020 2021	E E			1 2		
		PL	2020 2021	E E				9 7	
		RO	2021	E			1		
		TOTAL			10	-	12	18	-
	<i>Blumeria graminis</i>	DK	2021	E	1				
		UK	2021	E	2				
		HU	2021	E			2		
		LV	2021	E				1	
		PL	2020 2021	E E				4 2	
		RO	2020 2021	E E			1 1		

Crop	Target	Country	Years	Type of trial*	Number of trials				All GEP Trials
					MAR zone	MED zone	SE zone	NE zone	
	TOTAL				3	-	4	7	-
	Eyespot	DE	2021	E, MED	1				
		FR	2021	E, MED	1				
		UK	2020 2021	E, MED E, MED	1 3				
		LV	2021	E, MED				2	
		PL	2020 2021	E, MED E, MED				2 4	
	TOTAL				6	-	-	8	-
Rye	<i>Rhynchosporium secalis</i>	DE	2021	E, MED	4				
		DK	2021	E, MED	4				
		FR	2020 2021	E, MED E, MED	2 1				
		LT	2021	E, MED				1	
		PL	2020 2021	E, MED E, MED				1 7	
	TOTAL				11	-	-	9	-
Triticale	<i>Zymoseptoria tritici</i>	DE	2021	E, MED	2				
		DK	2020	E, MED	1				
		FR	2021	E, MED	1				
		PL	2020 2021	E, MED E, MED				1 5	
	TOTAL				4	-	-	6	
Oats	<i>Blumeria graminis</i>	DK	2020	E, MED	2				
		PL	2021	E, MED				1	
		UK	2021	E, MED	3				
	TOTAL				5	-	-	1	

* P = preliminary trial, MED = minimum effective dose, E = efficacy trial

** GEP: Good Experimental Practices. Official: carried out by a national official organisation.

n.b. Some trials contained more than one application timing so for the purposes of this table have been included twice. Some trials also contained more than one disease. Therefore totals differ from the total numbers of trials conducted.

The distribution of efficacy trials performed across the Maritime, the South-East and the North-East EPPO climatic zones covers a representative range of growing conditions for wheat, barley, rye, triticale and oats. The set of trials is therefore considered sufficient to evaluate the performance of A23282A against the claimed diseases; *Zymoseptoria tritici* (SEPTTR), *Blumeria graminis* (ERYSGR), *Puccinia recondita* (PUCCRE) and *Puccinia striiformis* (PUCCST) and Eyespot (PSDCHE) on wheat, *Pyrenophora teres* (PYRNTE), *Rhynchosporium secalis* (RHYNSE), *Puccinia hordei* (PUCCHD), *Ramularia collo-cygni* (RAMUCC), *Blumeria graminis* (ERYSGR) and Eyespot (PSDCHE) on barley; *Rhynchosporium secalis* (RHYNSE) on rye; *Zymoseptoria tritici* (SEPTTR) on triticale and *Blumeria graminis* (ERYSGR) on oats.

The reference product FANDANGO 200EC (prothioconazole + fluoxastrobin) was used in all trials **targeted** for foliar diseases except eyespot and the reference product FLEXITY 300SC (metrofenone) was used in all trials targeted for eyespot, **but** reference standards with well-known properties, by comparison with A23282A to evaluate its performance and crop plant safety and to validate the reliability of trials. The authorization details of the reference product in the countries where the trials were undertaken are presented in Table 3.2-16 below.

Comments of zRMS:	ZRMS confirms that the submitted trials were carried out by contractor companies and Research Institutes, officially recognized for efficacy testing of plant protection products, by the authorities of relevant countries, in accordance with the principles of Good Experimental Practice and with EPPO general guidelines and specific EPPO standards. The assessment was made in accordance with the Uniform Principles.
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Table 3.2-16: Presentation of reference standards used in trials (efficacy trials, preliminary trials...)

Reference standard	Country where the product is registered ⁽¹⁾	Authorization number	Active substance(s)	Formulation		Application rate in trials (per treatment)	Remark
				Type ⁽²⁾	Concentration of a.s.		
FANDANGO EC	BE	9458P/B	Prothioconazole + Fluoxastrobin	EC	100 + 100	1.25 L/ha	Active ingredients registered alone and in mixture on wide range of crops across Europe
	BG	Not registered					
	DE	025315-00/024					
	DK	Not registered					
	FR	Not registered					
	GB	17318					
	HR	Not registered					
	HU	Not registered					
	IE	03787					
	IT	17139					
	LT	0282F/09					
	NL	W3-12723					
	PL	R-10/2011					
	RO	Not registered					
	SI	Not registered					
FLEXITY SC	DE	025311-00/001	Metrafenone	SC	300	0.5 L/ha	Active ingredients registered alone and in mixture on wide range of crops across Europe
	DK	650-77/72353					
	FR	2060051					
	GB	11917					
	IT	Not registered					
	LT	AS2-50F(2019)					
	PL	R-143/2019					
	RO	454PC					
	HU	6300/13436-1/2019					

3.2.1 Preliminary tests (KCP 6.1)

3.2.1.1 Preliminary laboratory / semi-field trials

Products containing cyprodinil and prothioconazole have been authorized for use in a wide range of European countries for several years as a foliar fungicide, both alone and in mixture, on cereals and other crops and as such the activity of the active ingredient has been widely researched and established through commercial use.

Due to the fact that products containing cyprodinil and prothioconazole have been previously registered in several countries throughout Europe and the fungicidal activity of the active ingredient has been widely researched and established through commercial use the applicant believes that further preliminary studies are not required within this submission. Therefore, no results from preliminary laboratory/greenhouse/semi-field tests are submitted.

Ratio justification

This section describes how the rate and ratio of both actives cyprodinil and prothioconazole were defined in A23282A. This formulation was designed as ready mix for the protection from various fungal diseases on wheat, barley, rye, triticale and oat. In this section results for *Zymoseptoria tritici* and eyespot (*Pseudocercospora herpotrichoides*) on wheat, *Pyrenophora teres*, *Rhynchosporium secalis*, *Ramularia collo-cygni* and eyespot on barley, *Rhynchosporium secalis* on rye, *Zymoseptoria tritici* on triticale and *Blumeria graminis* on oats are presented as they have been considered as representative. Justification of the ratio will be supported by the currently registered solo products of the AI's.

Selection of MIN rates of Cyprodinil

The biological performance of the active ingredient cyprodinil can be regarded as well known and was defined in detail in the context of the requests on inclusion of the mentioned active substances in Annex I of Directive 91/414/EEC.

Furthermore, cyprodinil containing products are already registered in different European countries on cereals and are introduced in the markets for the use for the same indication as applied for the test product against the same fungal diseases as claimed on the label of A23282A. Cyprodinil is registered across Europe at a range of rates, depending on the crop and target diseases. The rate could be increased in some countries depending on the water volume used and the period of application. Based on all current registered cyprodinil products we consider 450 gai/ha as the minimum effective rate.

Since its market launch, cyprodinil is used as a constant component of spray programs in practice.

Selection of MIN rates of Prothioconazole

The biological performance of the active ingredient prothioconazole can be regarded as well known and was defined in detail in the context of the requests on inclusion of the mentioned active substances in Annex I of Directive 91/414/EEC.

Prothioconazole containing products are already registered in different European countries on cereals and are introduced in the markets for the use for the same indication as applied for the test product against the different fungal diseases claimed on the label. Prothioconazole is registered across Europe at a range of rates, depending on the crop and target diseases. Based on all current registered prothioconazole products we consider a rate of 150 gai/ha as the minimum effective rate.

Since its market launch, prothioconazole is used as a constant component of spray programs in practice.

Summary and conclusion

Specific ratio justification trials have not been conducted. Rates and ratios were justified in the first submission for registration of cyprodinil and prothioconazole based products. This new formulation A23282A is a mixture delivering 450 g/ha cyprodinil and 150 g/ha prothioconazole when applied at the recommended rate of 2.0 LPR/ha, which have been defined as the optimal rates based on the registered rates of the solo products KAYAK 300 EC and PROLINE 250 EC to control the fungal diseases claimed on the label on cereals.

The AI cyprodinil at the minimum needed rate of 225 g/ha has been defined as the optimal rate in registered products like KAYAK against fungal diseases in cereals. The AI prothioconazole at rate of 75 g/ha has been defined as the optimal rate in registered products like PROLINE against fungal diseases in cereals.

This ratio, combining different MoA for good control of different fungal diseases in cereals, provides a good resistance management strategy, as recommended in FRAC (see Annex Point IIIA 3.3 (KCP 6.3) Information on the occurrence or possible occurrence of the development of resistance, resistance management).

Justification of the mixture

Mixture justification in wheat

Data for the mixture justification from all EPPO zones are presented for *Zymoseptoria tritici* from 48 efficacy trials conducted in wheat (43 winter wheat, 4 spring wheat and 1 durum wheat) and for Eyespot from 26 efficacy trials conducted in winter wheat. These trials were carried out during 2020 and 2021 in Belgium, Denmark, Germany, France and the United Kingdom, Bulgaria, Croatia, Hungary, Romania, Slovenia, Slovakia, Poland, Latvia and Lithuania. The objective was to justify the benefit of the mixture of the two actives cyprodinil and prothioconazole in A23282A over the two single actives in terms of efficacy against fungal diseases in wheat.

In all trials the efficacy of A23282A at 2.0 LPR/ha (containing 450 g cyprodinil and 150 g prothioconazole) was compared to the efficacy of KAYAK 300 EC (A14325E) at 1.5 LPR/ha containing 450 g cyprodinil and of PROLINE 250 EC at 0.6 LPR/ha containing 150 g prothioconazole. The pest severity on leaves was evaluated in the trials. For further information on material and methods refer to point 3.2.3.1.

For the mixture justification section in wheat two fungal diseases (*Zymoseptoria tritici* and Eyespot (*Pseudocercospora sp.*)) have been selected which have been considered as most representative. These two fungal diseases are discussed below in separate sections.

***Zymoseptoria tritici* on wheat**

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 16 trials (13 winter wheat, 2 spring wheat and 1 durum wheat), in the South-East EPPO zone in 16 winter wheat trials and in the North-East EPPO zone in 16 trials (14 winter wheat and 2 spring wheat) targeted for *Zymoseptoria tritici* (SEPTTR). These trials were conducted in Belgium, Denmark, Germany, France and the United Kingdom in the Maritime EPPO zone, in Bulgaria, Croatia, Hungary, Romania and Slovenia in the South-East EPPO zone and in Poland, Latvia and Lithuania in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in table Table 3.2-17.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling SEPTTR in wheat compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across all EPPO zones.

Table 3.2-17: Summary of the efficacy of A23282A against *Zymoseptoria tritici* in wheat in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	16	22.7	77.6	61.3	68.2
South-East	16	11.7	88.2	69.4	78.8
North-East	17	25.6	75.3	61.2	69.2

Eyespot on wheat

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 13 winter wheat trials, in the South-East EPPO zone in 4 winter wheat trials and in the North-East EPPO zone in 9 winter wheat trials targeted for Eyespot (*Pseudocercospora herpothrichoides*, PSDCHE). These trials were conducted in Denmark, Germany, France and the United Kingdom in the Maritime EPPO zone, in Romania and Slovakia in the South-East EPPO zone and in Poland, Latvia and Lithuania in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-18.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling Eyespot in wheat compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across all EPPO zones.

Table 3.2-18: Summary of the efficacy of A23282A against Eyespot in wheat in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	13	22.2	56.1	43.0	50.6
South-East	4	23.2	78.1	65.1	72.2
North-East	9	40.7	64.1	49.2	42.3

Overall summary of mixture justification in wheat

Overall 74 mixture justification trials conducted in wheat, are presented in this section from the Maritime, the South-East and the North-East EPPO zone to show the benefit in efficacy of A23282A the combination of cyprodinil and prothioconazole in one product over the two single active ingredients applied alone. The trials were conducted in against *Zymoseptoria tritici* and Eyespot as these two diseases were considered as representative in wheat.

The weighted averages from all mixture justification trials conducted in all EPPO zones are presented in the Table 3.2-19 and Table 3.2-20.

Table 3.2-19: Summary of the efficacy of A23282A against *Zymoseptoria tritici* in wheat in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	16	22.7	77.6	61.3	68.2
South-East	16	11.7	88.2	69.4	78.8
North-East	17	25.6	75.3	61.2	69.2

Table 3.2-20: Summary of the efficacy of A23282A against Eyespot in wheat in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	13	22.2	56.1	43.0	50.6
South-East	4	23.2	78.1	65.1	72.2
North-East	9	40.7	64.1	49.2	42.3

The following statement can be made based on the results:

- the two single actives cyprodinil (KAYAK) and prothioconazole (PROLINE) applied alone achieved on average a lower level of efficacy than the treatment with A23282A containing both actives.

In summary, it is evident from the results presented in this chapter that the combination product A23282A has a clear advantage over the single actives.

In the product A23282A the two active ingredients cyprodinil with its systemic and curative activity especially on leaves and prothioconazole with its curative/preventative activity complement each other and provide consistently effective control of fungal diseases in wheat.

Comments of zRMS	Mixture justification in wheat In “Overall summary of mixture justification in wheat” the tables 3.2-19 and 3.2-20 (highlighted in yellow) are a repetition of the tables 3.2-17 and 3.2-18, included above, when describing the efficacy for each disease. It is not necessary.
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Mixture justification in barley

Data for the mixture justification from all EPPO zones are presented for *Pyrenophora teres* from 44 efficacy trials conducted in barley (34 winter barley, 10 spring barley), for *Rhynchosporium secalis* from 17 trials conducted in barley (16 winter barley, 1 spring barley), for *Ramularia collo-cygni* from 19 trials conducted in barley (16 winter barley and 3 spring barley) and for Eyespot from 15 efficacy trials conducted in winter barley. These trials were carried out during 2020 and 2021 in Belgium, Denmark, Germany, France, the United Kingdom, Ireland, the Netherlands, Bulgaria, Hungary, Croatia, Romania, Slovenia, Poland, Latvia and Lithuania. The objective was to justify the benefit of the mixture of the two actives cyprodinil and prothioconazole in A23282A over the two single actives in terms of efficacy against fungal diseases in barley.

In all trials the efficacy of A23282A at 2.0 LPR/ha (containing 450 g cyprodinil and 150 g prothioconazole) was compared to the efficacy of KAYAK 300 EC (A14325E) at 1.5 LPR/ha containing 450 g cyprodinil and of PROLINE 250 EC at 0.6 LPR/ha containing 150 g prothioconazole. The pest severity on leaves was evaluated in the trials. For further information on material and methods refer to point 3.2.3.2.

For the mixture justification section in barley four fungal diseases (*Pyrenophora teres*, *Rhynchosporium secalis*, *Ramularia collo-cygni* and Eyespot (*Pseudocercospora* sp.)) have been selected which have been considered as representative. These four fungal diseases are discussed below in separate sections.

***Pyrenophora teres* on barley**

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 8 trials (4 winter barley and 4 spring barley), in the South-East EPPO zone in 22 trials (20 winter barley and 2 spring barley) and in the North-East EPPO zone in 14 trials (10 winter barley and 4 spring barley) targeted for *Pyrenophora teres*. These trials were conducted in Belgium, Denmark and Germany in the Maritime EPPO zone, in Bulgaria, Croatia, Hungary, Romania and Slovenia in the South-East EPPO zone and in Poland, Latvia and Lithuania in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-21.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling *Pyrenophora teres* in barley compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across all EPPO zones.

Table 3.2-21: Summary of the efficacy of A23282A against PYRNTE in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	8	20.7	91.6	78.3	83.4
South-East	22	11.3	85.7	57.3	78.9
North-East	14	12.2	87.5	71.5	72.5

***Rhynchosporium secalis* on barley**

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 8 trials (7 winter barley and 1 spring barley), in the South-East EPPO zone in 3 winter barley trials and in the North-East EPPO zone in 6 winter barley trials targeted for *Rhynchosporium secalis*. These trials were conducted in Denmark, Germany, France, the United Kingdom and Ireland in the Maritime EPPO zone, in Hungary and Romania in the South-East EPPO zone and in Poland in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-22.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling *Rhynchosporium secalis* in barley compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across all EPPO zones.

Table 3.2-22: Summary of the efficacy of A23282A against RHYNSE in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	8	14.0	92.1	82.0	86.8
South-East	3	18.5	86.9	70.2	80.1
North-East	6	8.3	87.7	67.8	72.2

***Ramularia collo-cygni* on barley**

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 8 trials (7 winter barley and 1 spring barley), in the South-East EPPO zone in 7 trials (6 winter barley and 1 spring barley) and in the North-East EPPO zone in 4 trials (3 winter barley and 1 spring barley) targeted for *Ramularia collo-cygni*. These trials were conducted in Germany, France, the United Kingdom, Ireland and the Netherlands in the Maritime EPPO zone, in Croatia, Romania and Slovenia in the South-East EPPO zone and in Poland in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-23.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling *Ramularia collo-cygni* in barley compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across all EPPO zones.

Table 3.2-23: Summary of the efficacy of A23282A against RAMUCC in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	8	23.1	74.1	30.8	65.3
South-East	7	19.7	83.9	38.7	80.4
North-East	4	14.2	93.8	72.2	73.2

Eyespot on barley

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 6 winter barley trials and in the North-East EPPO zone in 9 winter barley trials targeted for Eyespot. These trials were conducted in Germany, France, and the United Kingdom in the Maritime EPPO zone and in Poland and Latvia in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-24.

The strongest reduction of the pest severity on stem was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling Eyespot in barley compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across all EPPO zones.

Table 3.2-24: Summary of the efficacy of A23282A against Eyespot in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	6	27.0	66.1	61.0	49.6
North-East	9	34.4	85.7	70.8	70.0

Overall summary of mixture justification in barley

Overall 81 mixture justification trials conducted in barley are presented in this section from the Maritime, the South-East and the North-East EPPO zone to show the benefit in efficacy of A23282A the combination of cyprodinil and prothioconazole in one product over the two single active ingredients applied alone. The trials were conducted in against *Pyrenophora teres*, *Rhynchosporium secalis*, *Rmularia collo-cygni* and Eyespot as these diseases were considered as most representative in barley.

The weighted averages from all mixture justification trials conducted in all EPPO zones in the different diseases are presented in Table 3.2-25 and Table 3.2-26, Table 3.2-27 and Table 3.2-28.

Table 3.2-25: Summary of the efficacy of A23282A against PYRNTE in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	8	20.7	91.6	78.3	83.4
South-East	22	11.3	85.7	57.3	78.9
North-East	14	12.2	87.5	71.5	72.5

Table 3.2-26: Summary of the efficacy of A23282A against RHYNSE in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	8	14.0	92.1	82.0	86.8
South-East	3	18.5	86.9	70.2	80.1
North-East	6	8.3	87.7	67.8	72.2

Table 3.2-27: Summary of the efficacy of A23282A against RAMUCC in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	8	23.1	74.1	30.8	65.3
South-East	7	19.7	83.9	38.7	80.4
North-East	4	14.2	93.8	72.2	73.2

Table 3.2-28: Summary of the efficacy of A23282A against Eyespot in barley in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	6	27.0	66.1	61.0	49.6
North-East	9	34.4	85.7	70.8	70.0

The following statement can be made based on the results shown above:

- the two single actives cyprodinil (KAYAK) and prothioconazole (PROLINE) applied alone achieved on average a lower level of efficacy than the treatment with A23282A containing both actives.

In summary, it is evident from the results presented in this chapter that the combination product A23282A has a clear advantage over the single actives.

In the product A23282A the two active ingredients cyprodinil with its systemic and curative activity especially on leaves and prothioconazole with its curative/preventative activity complement each other and provide consistently effective control of fungal diseases in wheat.

Comments of zRMS	<p>Mixture justification in barley</p> <p>In “Overall summary of mixture justification in barley” the tables 3.2-25; 3.2-26; 3.2-27 and 3.2-28 (highlighted in yellow) are a repetition of the tables 3.2-21; 3.2-22; 3.2-23 and 3.2-24, included above, when describing the efficacy for each disease. It is not necessary.</p>
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Mixture justification in rye

Data for the mixture justification from the EPPO zones Maritime and North-East are presented for *Rhynchosporium secalis* from 20 efficacy trials conducted in rye (17 winter rye, 3 spring rye). These trials were carried out during 2020 and 2021 in Denmark, Germany, France, Poland and Lithuania. The objective was to justify the benefit of the mixture of the two actives cyprodinil and prothioconazole in A23282A over the two single actives in terms of efficacy against *Rhynchosporium secalis* in rye.

In all trials the efficacy of A23282A at 2.0 LPR/ha (containing 450 g cyprodinil and 150 g prothioconazole) was compared to the efficacy of KAYAK 300 EC (A14325E) at 1.5 LPR/ha containing 450 g cyprodinil and of PROLINE 250 EC at 0.6 LPR/ha containing 150 g prothioconazole. The pest severity on leaves was evaluated in the trials. For further information on material and methods refer to point 3.2.3.3.

Rhynchosporium secalis on rye

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 11 trials (9 winter rye and 2 spring rye) and in the North-East EPPO zone in 9 trials (8 winter rye and 1 spring rye) targeted for *Rhynchosporium secalis*. These trials were conducted in Denmark, Germany and France in the Maritime EPPO zone and in Poland and Lithuania in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-29.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Table 3.2-29: Summary of the efficacy of A23282A against RHYNSE in rye in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	11	14.3	85.8	71.7	80.0
North-East	9	22.5	88.5	78.2	82.8

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling *Rhynchosporium secalis* in rye compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across the two EPPO zones.

Mixture justification in triticale

Data for the mixture justification from the EPPO zones Maritime and North-East are presented for *Zymoseptoria tritici* from 10 efficacy trials conducted in winter triticale. These trials were carried out during 2020 and 2021 in Denmark, Germany, France and Poland. The objective was to justify the benefit of the mixture of the two actives cyprodinil and prothioconazole in A23282A over the two single actives in terms of efficacy against *Zymoseptoria tritici* in triticale.

In all trials the efficacy of A23282A at 2.0 LPR/ha (containing 450 g cyprodinil and 150 g prothioconazole) was compared to the efficacy of KAYAK 300 EC (A14325E) at 1.5 LPR/ha containing 450 g cyprodinil and of PROLINE 250 EC at 0.6 LPR/ha containing 150 g prothioconazole. The pest severity on leaves was evaluated in the trials. For further information on material and methods refer to point 3.2.3.4.

Zymoseptoria tritici on triticale

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 4 winter triticale trials and in the North-East EPPO zone in 6 winter triticale trials targeted for *Zymoseptoria tritici*. These trials were conducted in Denmark, Germany and France in the Maritime EPPO zone and in Poland in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-30.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Table 3.2-30: Summary of the efficacy of A23282A against SEPTTR in triticale in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	4	26.3	87.3	69.9	57.9
North-East	6	12.1	94.5	66.8	85.2

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling *Zymoseptoria tritici* in triticale compared to cyprodinil alone and to prothioconazole alone. This finding was consistent across the two EPPO zones.

Mixture justification in oats

Data for the mixture justification from the EPPO zones Maritime and North-East are presented for *Blumeria graminis* from 6 efficacy trials conducted in oats (5 spring oat and 1 winter oat). These trials were carried out during 2020 and 2021 in Denmark, the United Kingdom and Poland. The objective was to justify the benefit of the mixture of the two actives cyprodinil and prothioconazole in A23282A over the two single actives in terms of efficacy against *Blumeria graminis* in oats.

In all trials the efficacy of A23282A at 2.0 LPR/ha (containing 450 g cyprodinil and 150 g prothioconazole) was compared to the efficacy of KAYAK 300 EC (A14325E) at 1.5 LPR/ha containing 450 g cyprodinil and of PROLINE 250 EC at 0.6 LPR/ha containing 150 g prothioconazole. The pest severity on leaves was evaluated in the trials. For further information on material and methods refer to point 3.2.3.5.

Erysipe graminis on oats

A comparison of A23282A at 2.0 LPR/ha and KAYAK 300 EC (A14325E) at 1.5 LPR/ha and PROLINE 250 EC at 0.6 LPR/ha have been evaluated in the Maritime EPPO zone in 5 trials (4 spring oats and 1 spring oats) and in the North-East EPPO zone in 1 spring oats trial targeted for *Blumeria graminis*. These trials were conducted in Denmark and the United Kingdom in the Maritime EPPO zone and in Poland in the North-East EPPO zone during 2020 and 2021. Efficacy evaluation was based on pest severity assessments from trials where a minimum of 5% disease was present in the untreated plots. The level of infestation in the untreated plots was considered as acceptable to validate the trials.

An overall summary over all EPPO zones is presented in Table 3.2-31.

The strongest reduction of the pest severity on leaves was achieved with the formulated product A23282A. In all EPPO zones the formulated product A23282A applied at 2.0 LPR/ha rate achieved higher efficacy than the two actives cyprodinil and prothioconazole applied alone.

Summary

The trials presented in this section show that the formulated product A23282A has a clear benefit in controlling *Blumeria graminis* in oats compared to cyprodinil alone and to prothioconazole alone.

Table 3.2-31: Summary of the efficacy of A23282A against ERYSGR in oats in comparison to single a.s. products - pest severity assessments, ALL EPPO zones

EPPO zone	No. of trials	% disease Check	% efficacy		
			A23282A 2 L /ha	KAYAK (A14325E) 1.5 L/ha	PROLINE 0.6 L/ha
Maritime	5	11.0	90.1	43.8	91.1
North-East	1	7.4	100	100	98.8

<p>Comments of zRMS:</p>	<p><u>Preliminary tests</u></p> <p>Cyprodinil and prothioconazole are included as a single active substances or in the mixtures with other active substances, in the products approved in some countries for pathogens control in cereals. The applicant did not provide a preliminary tests, but in order to justify the benefit of using a mixture of the two actives, he presented the comparison of data on the efficacy of A23282A (Kayak Era), containing the two active substances cyprodinil and prothioconazole with products including single substances, e.g. Kayak 300 EC and Proline 250 EC. The applicant claims that the active substances contained in A23282A have been used in Europe for many years (single or in combination with other active substances) and their fungicidal activity is well known. As the activity of separately used active substances is well-known the ratio of both substances in the mixture was calculated on the base of efficacy of A23282A and products with one active substances.</p> <p>The comparison included the following diseases, considered as representative: <i>Zymoseptoria tritici</i> and eyespot (<i>Pseudocercospora herpotrichoides</i>) on wheat, <i>Pyrenophora teres</i>, <i>Rhynchosporium secalis</i>, <i>Ramularia collo-cygni</i> and eyespot on barley, <i>Rhynchosporium secalis</i> on rye, <i>Zymoseptoria tritici</i> on triticale and <i>Blumeria graminis</i> on oats. ZRMS agrees with the selection of representative diseases. The applicant has presented results for a number of studies, e.g. for <i>Zymoseptoria tritici</i> control on winter wheat – 13 trials in Maritime zone, 16 trials in S-E zone and 14 in N-E zone; for <i>Rhynchosporium secalis</i> on winter barley – 7 trials in Maritime zone, 3 trials in S-E zone and 6 trials in N-E zone; for <i>Zymoseptoria tritici</i> on triticale – 4 trials in Maritime zone and 6 trials in N-E zone.</p> <p>In the tables the mean efficacy in EPPO zones were shown. The efficacy of A23282A applied at the rate of 2.0 L/ha (450 g cyprodinil and 150 g prothioconazole) was compared to the efficacy of Kayak 300 EC applied at 1.5 L/ha (450 g cyprodinil) and of Proline 250 EC applied at 0.6 L/ha (150 g prothioconazole). Efficacy evaluation was based on pest severity assessments from trials, where a minimum of 5% disease was present in the untreated plots.</p> <p>In all zones A23282A applied at the rate of 2.0 L/ha gave the higher efficacy than the two active substances cyprodinil and prothioconazole applied alone. The effects was the strongest reduction of fungal diseases severity on the leaves by A23282A. It confirm that the ratio of both active substances in A23282A product is correct.</p> <p>ZRMS agrees with applicant that comparison of the products containing one active substance with the product included both tested substances is a good justification, instead of preliminary tests, and accept the calculated ratio of cyprodinil and prothioconazole in tested product A23282A (Kayak Era).</p>
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Minimum effective dose tests (KCP 6.2)

In order to determine the minimum effective dose for the use of A23282A for foliar disease control in cereals, several efficacy trials were conducted at a range of rates, in accordance with EPPO standard PP 1/225 'Minimum effective dose'.

In order to determine the minimum effective dose for the use of A23282A for foliar disease control on the leaves of cereals and for the control of eyespot on the stem of cereals efficacy trials were conducted at 1.0, 1.5 and 2.0 LPR/ha which reflects the maximum proposed label rate and approximately 75% and 50% of the maximum recommended rate of A23282A, in accordance with EPPO standard PP 1/225 'Minimum effective dose'. In several trials also the 1.8 LPR/ha rate was included which corresponds to 90% of the **maximum** recommended rate. The maximum recommended rate is selected on the basis of its efficacy performance, product safety parameters and environmental limitations.

Within the EPPO guideline PP 1/225(2) "Minimum effective dose" it is stated that it is impractical and unnecessary to provide evidence for the minimum effective dose for all recommendations. Instead, information is required for the main crops and target or a representative range of targets, which are considered to be the most important and for which control provides the major agricultural benefit.

In commercial practice foliar diseases on the leaves often occur as a complex of several pathogen species and the choice of a fungicide dose is driven by the need to control the less manageable pathogen. So, in accordance with the EPPO guidelines and the commercial practice needs, data in this section are presented for the control of the following pathogens:

- *Zymoseptoria tritici* (SEPTTR), and *Pseudocercospora* sp. (PSDCSP / Eyespot) in wheat.
- *Pyrenophora teres* (PYRNTE), *Rhynchosporium secalis* (RHYNSE), *Ramularia collo-cygni* (RAMUCC), and *Pseudocercospora* sp. (PSDCSP / Eyespot) in barley.
- *Rhynchosporium secalis* (RHYNSE) in rye
- *Zymoseptoria tritici* (SEPTTR) in triticale
- *Blumeria graminis* (ERYSGR) in oats

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 EPPO zones Maritime, South East and North East.

One data point per trial was selected for inclusion within the data tables. The selected data point was chosen according to the following criteria: - in each trial the assessment showing the highest % control on the leaf levels 1-3 showing at least an infected leaf area of 5% in the check, at 14 to approximately 42 days following treatment application.

Details of materials and methods used in all trials are given in Section IIIA 3.2.3 (KCP 6.2). Full site and application details for each trial are included in Appendix 2.

Exemplarily, the key pathogens were selected to demonstrate the minimum effective dose for A23282A. Data below are presented grouped by disease and EPPO zone but should not be seen in strict isolation. Trials representing the most challenging disease conditions also provide insight for other EPPO zones how dose-response relationship could look like if due to favourable weather conditions and/or high variety susceptibility a similar scenario would occur somewhere else.

There are some general factors which determine within a trial if the dose-response relationship of a fungicide is very pronounced or less pronounced. Examples of important factors are:

- Fungicide timing relative to infection (suboptimal timing generally increases the need for full rate in order to achieve best possible curative and long-term control)
- Disease pressure (high disease pressure is generally better controlled by full rate)
- Application conditions (applications under unfavourable conditions get generally more robust if full rates get used)
- Pathogen sensitivity (especially if pathogen sensitivity is reduced due to sensitivity shifts use of full rate will help to achieve best possible control)

Minimum effective dose in wheat

The data presented from 48 trials for *Zymoseptoria tritici* and 26 trials for Eyespot, collected across the Maritime, South East and North East EPPO climatic zones, demonstrated that the 2.0 LPR/ha rate (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) of A23282A consistently provided the optimum overall control and should be considered as effective against foliar diseases of winter, spring and Durum wheat, for which activity of A23282A is claimed. Lower rates frequently demonstrated reduced and more variable efficacy. A summary of the data across EPPO climatic zones are presented in Table 3.2-32.

Table 3.2-32: Minimum effective dose of A23282A against *Zymoseptoria tritici* and Eyespot on wheat, summarised across EPPO zones

Target	EPPO climatic zone	Untreated		A23282A (1.0 LPR/ha)		A23282A (1.5 LPR/ha)		A23282A (2.0 LPR/ha)	
		Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
		% disease severity		% efficacy					
<i>Zymoseptoria tritici</i> (SEPTTR)	Maritime (n=16)	22.7	7.3-58.3	65.0	44.7-87.3	71.5	37.5-89.5	77.6	45.1-95.6
	South East (n=16)	11.7	5.3-27.7	77.0	35.8-97.4	82.9	44.8-98.7	88.2	74.2-96.6
	North East (n=16)	25.2	7.1-100	61.9	0-99.8	66.7	32.5-100	76.2	44.2-100
		% disease severity		% efficacy					
Eyespot	Maritime (n=13)	22.2	8.1-50.8	35.6	0-61.1	46.3	16.8-85.1	56.1	35.3-68.6
	South East (n=4)	23.2	7.5-61.0	64.8	38.9-100	74.2	58.8-100	78.1	63.2-100
	North East (n=9)	40.7	15.5-94.7	42.8	15.6-75.5	52.2	23.2-78.1	64.1	34.4-94.4

Overall Conclusion

Based on presented data, 2.0 LPR/ha is considered to be fully justified as the minimum effective dose rate for A23282A as that required to deliver consistently effective control of diseases on wheat, under different disease pressures, development patterns and wide-ranging environmental conditions.

In commercial practice foliar diseases on the leaves often occur as a complex of several pathogen species and the choice of a fungicide dose is driven by the need to control the less manageable pathogen. As a result, the proposed rate of 2.0 LPR/ha should be considered as the minimum effective dose to deliver control of foliar disease of winter, spring and Durum wheat, under a wide range of environmental conditions.

The presented data also demonstrated that under certain conditions A23282A provided acceptable efficacy of foliar diseases down to the 1.5 LPR/ha dose rate. To be able to give good recommendations taking the local conditions into account, it may therefore be appropriate in some countries to consider including a dose range of 1.5 – 2.0 LPR/ha on the proposed label. This proposed range of use rates would allow the grower flexibility to adapt the applied dose rate according to disease pressure and climatic conditions. Instructions on when to use full or reduced dose rates would be included on individual country labels as appropriate.

Minimum effective dose in barley

The data presented from 46 trials for *Pyrenophora teres*, 27 trials for *Rhynchosporium secalis*, 18 trials for *Ramularia collo-cygni* and 15 trials for Eyespot, collected across the Maritime, South-East and North East EPPO climatic zones, demonstrated that the 2.0 LPR/ha rate (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) of A23282A consistently provided the optimum overall control and should be considered as effective against foliar diseases of barley, for which activity of A23282A is claimed. Lower rates frequently demonstrated reduced and more variable efficacy. A summary of the data across EPPO climatic zones are presented in Table 3.2-33.

Table 3.2-33: Minimum effective dose of A23282A against *Pyrenophora teres*, *Rhynchosporium secalis*, *Ramularia collo-cygni* and Eyespot on barley, summarised across EPPO zones

Target	EPPO climatic zone	Untreated		A23282A (1.0 LPR/ha)		A23282A (1.5 LPR/ha)		A23282A (2.0 LPR/ha)	
		Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
		% disease severity		% efficacy					
<i>Pyrenophora teres</i> (PYRNTE)	Maritime (n=8)	20.7	7.8-36.9	88.7	55.2-100	91.3	69.7-100	91.6	60.6-100
	South-East (n=22)	11.3	5.1-35.6	72.6	32.6-96.0	78.0	41.1-99.8	85.7	59.3-99.6
	North East (n=16)	12.7	5.0-30.3	74.5	50.1-98.2	82.5	39.5-98.6	88.2	45.7-100
		% disease severity		% efficacy					
<i>Rhynchosporium secalis</i> (RHYNSE)	Maritime (n=8)	14.0	6.2-29.7	90.4	79.8-100	91.0	82.6-100	92.1	79.4-100
	South-East (n=3)	18.5	5.6-38.1	78.7	70.2-85.3	85.3	74.9-92.2	86.9	75.3-95.4
	North East (n=6)	8.3	6.5-11.8	69.8	15.2-97.8	76.0	15.2-100	87.7	62.7-100
		% disease severity		% efficacy					
<i>Ramularia collo-cygni</i> (RAMUCC)	Maritime (n=7)	25.1	5.9-57.5	64.8	53.0-75.2	70.9	57.96-88.7	75.5	58.8-90.2
	South-East (n=7)	19.7	5.4-43.4	74.5	52.1-94.5	78.3	61.6-93.4	83.9	70.4-93.7
	North East (n=4)	14.2	7.4-30.6	75.8	58.5-87.5	78.8	61.6-92.0	93.8	91.5-95.9
		% disease severity		% efficacy					
EYESPOT (PSCDHE)	Maritime (n=6)	27.0	14.3-44.1	48.5	31.6-60.8	53.5	43.7-73.1	66.1	46.3-83.0
	North East (n=9)	34.4	7.2-59.5	66.2	39.5-94.1	77.1	60.7-99.0	85.7	69.3-100

Overall Conclusion

Based on presented data, 2.0 LPR/ha is considered to be fully justified as the minimum effective dose rate for A23282A as that required to deliver consistently effective control of diseases on barley, under different disease pressures, development patterns and wide-ranging environmental conditions.

In commercial practice foliar diseases on the leaves often occur as a complex of several pathogen species and the choice of a fungicide dose is driven by the need to control the less manageable pathogen. As a result, the proposed rate of 2.0 LPR/ha should be considered as the minimum effective dose to deliver control of foliar disease of winter and spring barley, under a wide range of environmental conditions.

The presented data also demonstrated that under certain conditions A23282A provided acceptable efficacy of foliar diseases down to the 1.5 LPR/ha dose rate. To be able to give good recommendations taking the local conditions into account, it may therefore be appropriate in some countries to consider including a dose range of 1.5 – 2.0 LPR/ha on the proposed label. This proposed range of use rates would allow the grower flexibility to adapt the applied dose rate according to disease pressure and climatic conditions. Instructions on when to use full or reduced dose rates would be included on individual country labels as appropriate.

Minimum effective dose in rye

The data presented from 20 trials, collected across the Maritime and the North-East EPPO climatic zones, demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided the optimum overall control and should be considered as effective against *Rhynchosporium secalis* on rye, for which activity of A23282A is claimed. Lower rates frequently demonstrated reduced and more variable efficacy. A summary of the data across EPPO climatic zones are presented in Table 3.2-34.

Table 3.2-34: Minimum effective dose of A23282A against *Rhynchosporium secalis* (RHYNSE) on rye, summarised across EPPO zones

EPPO zone	No. of trials	% disease	% efficacy			
		Check	A23282A 1 L /ha	A23282A 1.5 L /ha	A23282A 1.8 L /ha	A23282A 2 L /ha
Maritime	11	14.3	77.3	83.2	-	85.8
Maritime	2	22.3	83.8	91.7	80.2	91.6
North-East	9	22.5	80.3	85.1	-	88.5
North-East	1	5.5	97.4	98.9	99.7	100

Overall Conclusion

Based on presented data, 2.0 LPR/ha is considered to be fully justified as the minimum effective dose rate for A23282A as that required to deliver consistently effective control of *Rhynchosporium secalis* on rye, under different disease pressures, development patterns and wide-ranging environmental conditions.

The presented data also demonstrated that under certain conditions A23282A provided acceptable efficacy of foliar diseases down to the 1.5 LPR/ha dose rate. To be able to give good recommendations taking the local conditions into account, it may therefore be appropriate in some countries to consider including a dose range of 1.5 – 2.0 LPR/ha on the proposed label. This proposed range of use rates would allow the grower flexibility to adapt the applied dose rate according to disease pressure and climatic conditions. Instructions on when to use full or reduced dose rates would be included on individual country labels as appropriate.

Minimum effective dose in triticale

The data presented from 10 trials, collected across the Maritime and the North East EPPO climatic zones, demonstrated that the 2.0 L/ha rate (cyprodinil 450 g/L + prothioconazole 150 g/L) of A23282A consistently provided the optimum overall control and should be considered as effective against *Zymoseptoria tritici* on triticale, for which activity of A23282A is claimed. Lower rates frequently demonstrated reduced and more variable efficacy. A summary of the data across EPPO climatic zones are presented in Table 3.2-35.

Table 3.2-35: Minimum effective dose of A23282A against *Zymoseptoria tritici* (SEPTTR) on triticale, summarised across EPPO zones

EPPO zone	No. of trials	% disease	% efficacy			
		Check	A23282A 1 L /ha	A23282A 1.5 L /ha	A23282A 1.8 L /ha	A23282A 2 L /ha
Maritime	4	26.3	77.1	78.0	-	87.3
Maritime	1	47.3	56.7	48.2	35.4	57.8
North-East	6	12.1	84.4	90.3	-	94.5
North-East	1	9.7	60.2	74.5	84.6	95.5

Overall Conclusion

Based on presented data, 2.0 LPR/ha is considered to be fully justified as the minimum effective dose rate for A23282A as that required to deliver consistently effective control of *Zymoseptoria tritici* on triticale, under different disease pressures, development patterns and wide-ranging environmental conditions.

The presented data also demonstrated that under certain conditions A23282A provided acceptable efficacy of foliar diseases down to the 1.5 LPR/ha dose rate. To be able to give good recommendations taking the local conditions into account, it may therefore be appropriate in some countries to consider including a dose range of 1.5 – 2.0 LPR/ha on the proposed label. This proposed range of use rates would allow the grower flexibility to adapt the applied dose rate according to disease pressure and climatic conditions. Instructions on when to use full or reduced dose rates would be included on individual country labels as appropriate.

Minimum effective dose in oats

The data presented from 6 trials, collected across the Maritime and the North East EPPO climatic zones, demonstrated that the 2.0 l/ha of A23282A provided the optimum overall control and should be considered as effective against *Blumeria graminis* on oats, for which activity of A23282A is claimed. A summary of the data across EPPO climatic zones are presented in Table 3.2-36.

Table 3.2-36: Minimum effective dose of A23282A against *Blumeria graminis* (ERYSGR) on oats, summarised across EPPO zones

EPPO zone	No. of trials	% disease	% efficacy			
		Check	A23282A 1 L /ha	A23282A 1.5 L /ha	A23282A 1.8 L /ha	A23282A 2 L /ha
Maritime	5	11.0	77.1	91.1	-	90.1
Maritime	2	15.5	65.5	88.3	79.8	84.2
North-East	1	7.4	100	100	-	100

Overall Conclusion

Based on presented data, 2.0 LPR/ha is considered to be fully justified as the minimum effective dose rate for A23282A as that required to deliver consistently effective control of *Blumeria graminis* on oats, under different disease pressures, development patterns and wide-ranging environmental conditions.

The presented data also demonstrated that under certain conditions A23282A provided acceptable efficacy of foliar diseases down to the 1.5 LPR/ha dose rate. To be able to give good recommendations taking the local conditions into account, it may therefore be appropriate in some countries to consider including a dose range of 1.5 – 2.0 LPR/ha on the proposed label. This proposed range of use rates would allow the grower flexibility to adapt the applied dose rate according to disease pressure and climatic conditions. Instructions on when to use full or reduced dose rates would be included on individual country labels as appropriate.

Comments of zRMS:	Minimum Effective Dose (MED)
	To determine the Minimum effective dose for the use of A23282A (Kayak Era) in cereal crops for foliar disease control and eyespot control on the stems the efficacy trials were conducted at the rates of 1.0, 1.5 and 2.0 L/ha, which reflects 100%, 75% and 50% of the maximum recommended rate of A23282A, in accordance with EPPO standard PP 1/225 “Minimum effective dose”. In several trials also the rate of 1.8 L/ha was tested, which corresponds to 90% of the maximum recommended rate.
	ZRMS agree with applicant that providing the evidence for MED for all tested recommendations is not necessary and the studies on MED should be carried out on major cereal crops and major pathogens on these species, wherein the maximum recommended rate should be selected on the basis of its efficacy, product safety parameters and environmental limitations.
	The Minimum Effective Dose (MED) of A23282A for cereals diseases control was determine on the base of 216 efficacy trials in total, conducted across the Europe – 48 trials for <i>Zymoseptoria tritici</i> and 26 trials for Eyespot control in wheat (all 3 EPPO zones) – 46 trials for <i>Pyrenophora teres</i> , 27 trials for <i>Rhynchosporium secalis</i> , 18 trials for <i>Ramularia collo-cygni</i> and 15 trials for Eyespot control in barley (all 3 EPPO zones) – 20 trials for <i>Rhynchosporium secalis</i> control in rye (Maritime and N-E zones) – 10 trials for <i>Zymoseptoria tritici</i> control in triticale (Maritime and N-E zones) – 6 trials for <i>Blumeria</i>

	<p><i>graminis</i> control in oats (Maritime and N-E zones).</p> <p>The level of infestation in the untreated plots was considered as acceptable to validate the trials. The severity of all diseases in separate cereal species ranged between 11.7–40.7% in wheat; 8.3–25.1% in barley; 5.5–22.5% in rye; 9.7–47.3% in triticale and 7.4–15.5% in oats.</p> <p>The data for inclusion into the tables was chosen according the following criteria: in each trial the assessment showing the highest % control on the leaf levels 1-3, showing at least an infected leaf area of 5% in the check, at 14 to approximately 42 days following treatment application.</p> <p>In the most of trials the mean efficacy of A23282A at the rate of 2 L/ha was higher than at the lower rates, except the cases in rye and oats, where the results were at the same level or slightly lower than after the use of the rate 1.5 L/ha. It meant, that under certain conditions A23282A at the rate of 1.5 LPR/ha provided acceptable efficacy of foliar diseases control. Therefore, in some countries it may be consider including a dose range of 1.5–2.0 L/ha on the proposed label, to give a good recommendations, depends of the local conditions. However, it should be taken into account that lower rates frequently demonstrated reduced and more variable efficacy.</p> <p>The use of lower doses might be possible e.g. in barley for <i>Pyrenophora teres</i> control in Maritime zone and <i>Rhynchosporium secalis</i> in Maritime and S-E zones, in rye for <i>Rhynchosporium secalis</i> control in Maritime and N-E zones and in oats for <i>Blumeria graminis</i> control in Maritime and N-E zones but the decision should be taken by the authorities of cMS.</p> <p>Conclusion. ZRMS agree with applicant that A23282A (Kayak Era) at the targeted dose rate of 2.0 L/ha provided the optimum and most consistent control of the key diseases of important cereal crops and should be considered as the Minimum effective dose rate in cereals under a wide range of environmental conditions. In some countries the rate of 1.5-2 L/ha may be suggested for some diseases control, but it depends on authorities of cMS.</p>
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3.2.2 Efficacy tests (KCP 6.2)

Trials in this dossier were carried out by XXXX 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.

Justification for data outside country of submission

On the basis of the EPPO guideline 1/241(1) *Guidance on comparable climates*, the trials included in this dossier have been grouped and summarized by EPPO zones. EPPO zones have been defined by taking into account differences between the agro-climatic sub-areas of the EPPO region.

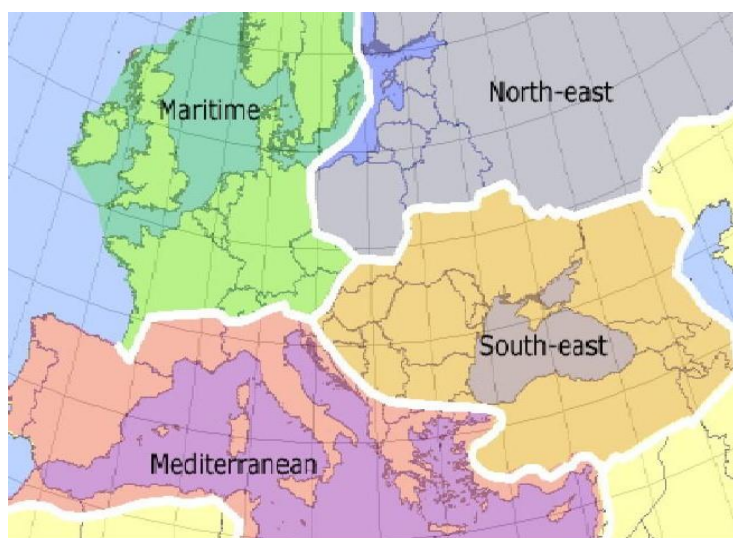


Figure 3.2-4: Zones of comparable climate in the EPPO region, for the purpose of evaluation of efficacy trials on plant protection products

In this dRR three EPPO zones are included: the Maritime, the South-East and the North-East EPPO zones. Trials presented in this dossier have been carried in the following countries:

Maritime EPPO zone: Belgium, Denmark, France, Germany, Ireland, the Netherlands and the United Kingdom

South-East EPPO zone: Bulgaria, Croatia, Hungary, Romania, Slovenia

North East EPPO zone: Finland, Latvia, Lithuania and Poland

Efficacy in wheat

Trials methodology in relation to EPPO

Trials were conducted according to the EPPO guidelines stated in Table 3.2-37. Full details of the sites and applications are provided in Appendix 2. Official testing organisation certificates are available in the GEP Certificate Database System (Certibase) (<http://www.gepcertibase.eu>) and are provided via the hyperlinks in Annex Point IIIA 3.7.

The trial layout was according to the randomized complete block design with four replicates per treatment. All normal crop husbandry measures were applied to the trials area by the grower, according to crop requirements and in accordance with good agricultural practice. Trials included a range of soil types and locations to determine crop tolerance and efficacy on a number of commercially grown varieties, under a range of conditions. All the trials were placed within regions where wheat is commonly grown and data have been presented on diseases which are also indigenous to the area covered. Crop growth stages (BBCH scale) and disease levels were recorded at the time of application and assessments.

Within the trials, data are presented from a single application of A23282A applied between BBCH 30 and BBCH 69. Within the trials where the test treatments were applied at the later application timings, if required due to high early season disease pressure, a cover spray using locally registered fungicides was applied across the trials area, excluding the untreated plot, at growth stage BBCH 31-33 to maintain good agricultural practice and to keep the crop healthy until the test treatments were applied. The cover spray also included the untreated plots and an additional treatment excluding cover spray was included to reflect the disease incidence without any protection.

Pest growth at application is described on the basis of development stage. Crop growth stages are described using the standard BBCH scale. In all trials, efficacy was assessed according to EPPO guidelines.

Crop phytotoxicity was assessed at various intervals after application. All assessments were on a 0-100 scale, where 0 = no damage and 100 = total crop loss. Individual symptoms were recorded where appropriate. Where no phytotoxicity was observed, this was generally recorded within the individual trial data. Only data where phytotoxicity was recorded were presented in the dossier.

Crop yield was assessed in the majority of the efficacy trials. Plot size fulfilled the minimum of 10 m² required by EPPO. Yield assessments included grain yield [dt/ha] as well as different quality parameters (hectolitre weight [kg/hl], thousand grain weight [g], and protein content [%]). In some trials, yield parameters were analysed with a mixed sample of the four replicates. In this case no statistical analysis is presented in the summary tables.

For the overall efficacy evaluation of foliar diseases, a time window from two weeks to up to 42 days after application was used. This limit was set to reflect the maximum control that can be achieved following application of A23282A. In the majority of trials more than one assessment was undertaken, but for the results tables the mean of one selected data point per trial was calculated. The selected data point was chosen according to the following criteria: - in each trial % control/infestation on the highest leaf showing at least an infected leaf area of 5% in the check, at the timing within the defined time window when maximum control was achieved. Trials were only included where at least one product within the trial showed significant control of the disease. For all diseases efficacy evaluation was based on pest severity assessments.

For the Eyespot trials additionally pest incidence assessments were carried out as class assessment. 25 plants per plot were assessed and the number of plants were divided according to the EPPO guideline PP1/28 (3) into 4 classes, where:

Class 0 = healthy plant;

Class 1 = slight lesions, less than 50% of tiller circumference attacked at place where infection is most server, tissue still firm

Class 2 =moderate lesions, more than 50% of tiller circumference attacked at place where infection is most server, tissue still firm

Class 3 = server lesions, 100% of the tiller circumference attacked, tissue rotten

Percent control is calculated according to formula of Abbott, so negative values may result if a treated variant performs worse than the untreated control. If this was the case for single assessments the values were set to 0 (= no efficacy) for the overall efficacy evaluation, to avoid an excessive influence of these values as a fungicide treatment at its worst will have no efficacy (= 0) but normally will not have any supporting effects on a disease which would be supposed if negative values were used. Therefore in the summary tables no negative values occur. However, the single trial reports contain the automatically calculated values.

The **Student-Newman-Keuls (SNK)** method is a test for simultaneous comparisons of multiple means which controls error rates among tests of multiple groups of means (multiple range test). Please note that from all of the above trials, the results in summary tables were extracted from trials reports where treatments of no relevance to this submission were also included. As statistical analyses were conducted across the whole range of treatments, significance letters relate to the whole treatment list and not just to the data shown in the extracted tables.

Table 3.2-37: Details on trial methodology from wheat trials

Guidelines	General guidelines	EPPO:PP 1/152, (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4), PP 1/214, PP 1/223, PP 1/226
	Specific guidelines	EPPO: PP 1/026 (4) Foliar and ear diseases in cereals EPPO: PP 1/028 (3) (Eyespot of cereals)
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 10.5 – 40.0 m ² South-East EPPO zone: 12.0 – 24.0 m ² North East EPPO zone: 13.8 – 30.0 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 39 trials South-East EPPO zone: 27 trials North East EPPO zone: 31 trials
	Varieties per crop	Maritime EPPO Zone: Akteur, Alixan, Belgrade, Bennington, Campesion, Chevignon, Cleveland, Complice, Costello, Eltana, Harenda, Skyscraper, Nemo, Oregrain, Pilier, Ponticus, Refelxion, Reform, Relief, Gravity, Moisson, Tenor, Thotus, Tobak, Toras, Torp, Trapez South-East EPPO zone: Apache, Ariesan, Avenue, Basmati, Bernstein, Bologna, Buzogány, Combin, Discus, Fermer, Glosa, Jariella, Kalina, Kiara, Kraljica, Lukullus, Nemere, Nikibo, Padureni, Sadovo, Sorial, Trakijka, Vulkan North East EPPO zone: Ahoi, Argument, Arkadia, Avenue, Belissa, Bosporus, Collada, Edvins, Emil, Etana, Euforia, Fenomen, Findus, Formacja, Jetstream, Malibu, Owacja, Patras, Ponticus, Skagen, Tobak, Toras, Vanek
	Sowing period	Maritime EPPO zone Winter/durum Wheat: September – November Spring wheat: April South-East EPPO zone Winter Wheat: September - November Spring wheat: March - April North East EPPO zone Winter Wheat: September - November

		Spring Wheat: April
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 39-49, BBCH 30-32 South-East EPPO zone: BBCH 37-49, BBCH 31-33 North East EPPO zone: BBCH 37-49; BBCH 30-33
	Timing Pest stage at application	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 150-300 l/ha South-East EPPO zone: 200-300 l/ha North East EPPO zone: 200-300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Efficacy: % disease severity and disease incidence as class assessment (for eyespot) Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content Phytotoxicity: General phytotoxicity, chlorosis, necrosis, discolouration
	Assessment dates	Phytotoxicity assessments: Throughout growing season Efficacy % disease severity assessments: 14-42 DAA Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: calc. clay, clay, clay loam, fine sandy loam, loamy, sand, loamy silt, sand, sandy clay, sandy clay loam, sandy loam, silt, silt loam, silty clay South-East EPPO Zone: loam, clay, clay loam, sandy clay loam, sandy loam, silt loam, silty clay, silty clay loam, clayey silt North-East EPPO Zone: Sandy loam, loam, loamy sand, loamy fine sand, loamy clay, calc. loam, calc. sandy loam, silt, clay sandy loam, fine clay loam, sandy clay, sandy clay loam, fine silty clay, clayey sand, silt loam
	Natural / artificial inoculation	Natural infestation

Efficacy in wheat

Efficacy against *Zymoseptoria tritici* (SEPTTR) in wheat

The data presented from 58 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided good levels of control and should be considered as effective against *Zymoseptoria tritici* (SEPTTR) on winter, spring and Durum wheat, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/ha + fluoxastrobin 100 gai/ha) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented for the late application timing (BBCH 37-49) in Table 3.2-38 and for the early application timing (BBCH 31-33) in Table 3.2-39.

Table 3.2-38: Mean efficacy of A23282A against *Zymoseptoria tritici* on wheat, summarised across EPPO zones, late application timing (BBCH 37-49)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Zymoseptoria tritici</i>	Maritime (n=18)	22.7	7.3-58.3	76.9	42.7-99.7	68.8	32.6-98.6
	South-East (n=17)	13.2	5.3-37.4	87.4	74.2-96.6	85.2	53.0-97.7
	North-East (n=16)	25.2	7.1-100	76.2	44.2-100	71.3	35.7-99.7

Table 3.2-39: Mean efficacy of A23282A against *Zymoseptoria tritici* on wheat, summarised across EPPO zones, early application, early application timing (BBCH 31-33)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha		FLEXITY 300 SC 0.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control									
		% disease severity		% control					
<i>Zymosptoria tritici</i>	Maritime (n=4)	8.9	5.2-12.5	55.6	5.9-78.9	44.6	5.2-65.9	-	-
	Maritime (n=2)	6.1	5.0-7.2	77.8	56.0-99.6	-	-	48.0	45.9-50.0
	South-East (n=9)	9.6	5.8-16.5	66.3	48.8-79.6	65.4	49.8-76.8	-	-
	North-East (n=6)	18.4	5.8-43.6	77.7	57.7-100	73.3	41.7-100	-	-

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-69 for the control of *Zymoseptoria tritici* (SEPTTR) on winter, spring and Durum wheat, under a wide range of environmental conditions.

Efficacy against *Puccinia recondita* (PUCCRE) on wheat

The data presented from 12 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Puccinia recondita* (PUCCRE) on winter, spring and Durum wheat, for which activity of A23282A is claimed. The observed levels of control were comparable to or only slightly lower than the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented for the late application timing (BBCH 39-49) in Table 3.2-40.

Table 3.2-40: Mean efficacy of A23282A against *Puccinia recondita* on wheat, summarised across EPPO zones, late application timing (BBCH 39-49)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Puccinia recondita</i>	Maritime (n=3)	8.0	5.5-11.5	88.2	72.6-100	98.0	94.3-100
	South-East (n=7)	13.3	5.2-38.7	89.1	77.0-100	94.3	77.5-100
	North-East (n=2)	25.6	5.9-45.3	90.0	80.0-100	99.9	99.7-100

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-69 for the control of *Puccinia recondita* (PUCCRE) on winter, spring and Durum wheat, under a wide range of environmental conditions.

Efficacy against *Puccinia striiformis* (PUCCST) on wheat

The data presented from 18 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Puccinia striiformis* (PUCCST) on winter, spring and Durum wheat, for which activity of A23282A is claimed. The observed levels of control were comparable to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented for the late application timing (BBCH 37-49) in Table 3.2-41 and for the early application timing (BBCH 32) in Table 3.2-42.

Table 3.2-41: Mean efficacy of A23282A against *Puccinia striiformis* on wheat, summarised across EPPO zones, late application (BBCH 37-49)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Puccinia striiformis</i>	Maritime (n=10)	23.2	5.9-86.1	87.2	74.2-100	90.1	65.6-100
	South-East (n=3)	12.6	8.7-18.4	95.3	86-100	95.6	86.8-100
	North-East (n=4)	22.1	8.4-35.9	82.8	70.9-95.1	82.1	66.4-93.4

Table 3.2-42: Mean efficacy of A23282A against *Puccinia striiformis* on wheat, summarised across EPPO zones, early application (BBCH 32)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha		FLEXITY 300 SC 0.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control									
		% disease severity		% control					
<i>Puccinia striiformis</i>	Maritime (n=1)	26.3	-	97.6	-	-	-	0.0	-
	North-East (n=1)	5.6	-	31.3	-	40.5	-		-

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-69 for the control of *Puccinia striiformis* (PUCCST) on winter, spring and Durum wheat, under a wide range of environmental conditions.

Efficacy against *Blumeria graminis* (ERYSGR) on wheat

The data presented from overall 19 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Blumeria graminis* (ERYSGR) on winter, spring and Durum wheat, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented in Table 3.2-43.

Table 3.2-43: Mean efficacy of A23282A against *Blumeria graminis* on wheat, summarised across EPPO zones, late application timing (BBCH 37-51)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Blumeria graminis</i>	Maritime (n=6)	22.7	7.3-86.2	90.7	75.3-100	86.7	62.0-100
	South-East (n=4)	6.8	5.1-8.9	85.9	72.1-97.2	78.7	51.7-95.1
	North-East (n=8)	7.3	5.4-9.7	87.8	66.2-100	79.0	26.2-100

Table 3.2-44: Mean efficacy of A23282A against *Blumeria graminis* on wheat, summarised across EPPO zones, early application timing (BBCH 31-33)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		BLUMERIA GRAMINIS% control			
<i>Blumeria graminis</i>	Maritime (n=2)	8.2	7.7-8.7	91.0	86.2-95.7	93.4	90.2-96.5
	North-East (n=4)	15.8	11.2-25.3	84.7	42.9-100	80.4	32.6-100

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-69 for the control of *Blumeria graminis* (ERYSGR) on winter, spring and Durum wheat, under a wide range of environmental conditions.

Efficacy against Eyespot (*Pseudocercospora herpotrichoides*, **PSDCHE**) on wheat

The data presented from 26 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided good levels of control and should be considered as effective against Eyespot (*Pseudocercospora herpotrichoides* (**PSDCHE**)) on winter, spring and Durum wheat, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FLEXITY 300 SC (metrafenone 300 gai/L) at 0.5 LPR/ha. A summary of the data across EPPO climatic zones are presented in Table 3.2-45 and Table 3.2-46.

Table 3.2-45: Mean efficacy of A23282A against Eyespot on wheat, summarised across EPPO zones, disease severity

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FLEXITY 300 SC 0.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
Eyespot	Maritime (n=13)	22.2	8.1-50.8	56.1	35.3-68.6	51.5	18.9-79.5
	South-East (n=4)	23.2	7.5-61.0	78.1	63.2-100	68.3	50.0-100
	North-East (n=9)	40.7	15.5-94.7	64.1	34.4-94.4	46.4	25.7-79.8

Table 3.2-46: Mean efficacy of A23282A against Eyespot on wheat, summarised across EPPO zones, **disease incidence (Class assessments)**

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FLEXITY 300 SC 0.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
Eyespot Class 0	Maritime (n=13)	9.5	1.2-18.8	15.2	5.0-21.8	14.4	3.0-22.5
	South-East (n=4)	13.6	4.0-19.5	21.3	15.5-25.0	20.3	14.5-25.0
	North-East (n=9)	4.6	0-16.2	10.7	4.2-23.2	8.6	2.0-18.8
Eyespot Class 1	Maritime (n=13)	11.9	3.8-22.8	8.4	2.0-19.5	9.2	2.2-21.2
	South-East (n=4)	5.8	2.8-11.2	2.7	0-5.8	2.5	0-4.0
	North-East (n=9)	10.3	0.2-17.2	10.4	1.8-20.8	11.0	4.0-18.5
Eyespot Class 2	Maritime (n=13)	2.8	0-7.2	1.1	0-5.2	0.9	0.0-6.2
	South-East (n=4)	3.7	0-7.8	0.9	0-3.0	1.5	0-3.8
	North-East (n=9)	7.0	3.5-14.2	3.7	0-17.2	4.8	0-17.0
Eyespot Class 3	Maritime (n=13)	0.8	0.0-6.0	0.3	0-2.8	0.5	0.0-2.8
	South-East (n=4)	2.0	0-7.8	0.2	0-0.8	0.7	0-2.8
	North-East (n=9)	3.1	0-10.5	0.2	0-1.5	0.6	0-4.8

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) for the control of Eyespot (*Pseudocercospora herpotrichoides* (**PSDCHE**)) on winter, spring and Durum wheat, under a wide range of environmental conditions when applied between BBCH 30-69.

Yield (and relevant quality indicators), from efficacy trials (in the presence of disease)

Wheat yield

Winter wheat

The data presented from efficacy trials where foliar diseases or eyespot were present, collected across the Maritime, South-East and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in winter wheat yield when compared to the untreated control. The observed yields were comparable to those of the standards FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and increased compared to those of the standard FLEXITY 300 SC at 0.5 LPR/ha (150 gai/ha metrafenone). In some of the trials targeted for eyespot both reference standards were used. A summary of the data across EPPO climatic zones are presented for the late application timing in Table 3.2-47 and for the early application timing in Table 3.2-48.

Table 3.2-47: Mean yield of winter wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=18)	80.4	50.1-113.7	117.8	100.4-164.8	120.1	105.0-168.1
South-East (n=21)	64.8	43.6-97.0	112.6	97.2-127.7	110.5	92.0-127.8
North East (n=19)	71.4	44.4-96.2	110.6	95.4-140.7	107.6	95.0-132.8

Table 3.2-48: Mean yield of winter wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)					
Maritime (n=17)	74.2	23.8-104.6	107.4	94.4-129.2	108.2	89.4-136.0	-	
Maritime (n=13)	73.1	12.0-107.1	111.1	97.2-150.5	-		103.8	97.7-119.6
South-East (n=21)	61.6	38.6-97.0	112.4	99.5-126.2	112.3	100.1-126.0	-	
South-East (n=5)	51.2	38.6-61.7	112.8	108.8-118.3	-		108.5	100.1-120.8
North East (n=18)	63.0	44.4-96.2	110.6	98.3-144.8	111.1	95.5-153.5	-	
North East (n=9)	62.0	46.9-74.5	111.1	98.3-144.8	-		111.7	100-149.6

Spring wheat

The data presented from efficacy trials where foliar diseases or eyespot were present, collected across the Maritime, South-East and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in spring wheat yield when compared to the untreated control. The observed yields were increased or at least comparable to those of the standard FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and increased compared to those of the standard FLEXITY 300 SC at 0.5 LPR/ha (150 gai/ha metrafenone). In some of the trials targeted for eyespot both reference standards were used. A summary of the data across EPPO climatic zones are presented in Table 3.2-49 and Table 3.2-50.

Table 3.2-49: Mean yield of spring wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=3)	74.5	61.2-98.7	100.4	95.7-105.2	100	96.3-102.7
South-East (n=2)	46.2	39.0-53.4	111.5	103.5-119.5	109.5	104.8-114.1
North East (n=3)	68.0	51.5-81.2	105.1	99.7-108.6	106.3	105.0-107.3

Table 3.2-50: Mean yield of spring wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 200 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)					
Maritime (n=2)	62.4	61.2-63.6	99.6	96.7-102.5	103.0	100.6-105.3	-	
South-East (n=2)	46.2	39.0-53.4	114.3	108.1-120.5	103.8	95.3-112.2	-	
North East (n=1)	51.5	-	104.2	-	100.4	-	-	

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on yield in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in wheat yield, indicating that untreated disease can lead to significant yield reductions. The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of foliar diseases and eyespot on winter and spring wheat under a wide range of environmental conditions.

Wheat quality

Winter wheat

The data presented from 88 efficacy trials, collected across the Maritime (37 trials), South-East (25 trials) and North-East (26 trials) EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in hectolitre weight and thousand grain weight when compared to the untreated control. The quality parameters were similar to those of the standards FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrofenone).

The data also demonstrated that, plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on percentage protein content when compared with the untreated control. The results were similar to those of the standards FANDANGO at 1.5 LPR/ha (bixafen 75 gai/ha + prothioconazole 150 gai/ha) and FLEXITY 300SC at 1.5 LPR/ha (150 gai/ha metrafenone).

A summary of the data across EPPO zones are presented in Table 3.2-51, Table 3.2-52 and Table 3.2-53 for the later application timing and in Table 3.2-54, Table 3.2-55 and Table 3.2-56 for the early application timing.

Table 3.2-51: Hectolitre weight of winter wheat treated with A23282A in presence of disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)			
Maritime (n=18)	71.0	62.0-81.5	101.3	93.4-111.3	102.5	98.8-113.5
South-East (n=20)	75.4	67.6-80.9	101.5	99.6-105.9	101.4	97.4-105.9
North East (n=17)	73.5	60.9-84.5	101.1	96.8-105.7	101.2	96.0-105.0

Table 3.2-52: Thousand grain weight of winter wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=17)	39.7	30.5-59.4	107.0	98.2-119.2	108.6	99.0-131.3
South-East (n=20)	40.7	31.2-46.9	103.9	99.1-113.0	103.9	97.8-114.2
North East (n=16)	37.5	29.7-48.4	105.7	98.8-118.0	104.7	94.0-118.0

Table 3.2-53: Protein content of winter wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=18)	11.6	10.4-12.9	97.1	88.6-104.2	96.7	84.0-104.4
South-East (n=21)	11.7	6.7-15.4	99.1	70.2-104.0	99.3	78.7-105.4
North East (n=16)	13.3	11.6-14.7	100.3	96.3-107.6	100.2	92.2-104.9

Table 3.2-54: Hectolitre weight of winter wheat treated with A23282A in presence of disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)					
Maritime (n=17)	68.4	59.0-77.1	99.4	90.1-105.1	99.6	90.1-105.0	-	
South-East (n=21)	74.8	67.6-80.0	102.0	100-106.2	101.6	100-104.7	-	
North East (n=19)	73.4	60.9-84.5	100.6	98.0-103.4	101.2	99.2-105.7	-	
Maritime (n=12)	71.3	59.0-82.0	99.9	94.5-103.4	-		100	95.0-103.7
South-East (n=5)	74.0	73.2-74.4	103.1	101.0-106.2	-		101.7	100.7-103.6
North East (n=9)	73.3	65.5-78.9	100.8	100-103.4	-		100.9	99.1-104.1

Table 3.2-55: Thousand grain weight of winter wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)					
Maritime (n=16)	37.5	28.5-59.4	102.7	94.9-109.8	101.7	98.1-108.0	-	
South-East (n=21)	40.4	31.2-46.9	103.5	97.7-116.1	103.5	99.8-113.9	-	
North East (n=18)	36.5	29.7-43.0	102.7	97.5-116.3	103.7	95.5-117.5	-	
Maritime (n=12)	38.7	28.5-49.0	104.1	94.9-112.3	-		101.8	95.2-111.4
South-East (n=5)	39.4	34.3-42.3	104.4	102.2-106.0	-		102.0	100-105.4
North East (n=9)	37.1	30.0-43.0	101.5	100-103.5	-		101.9	99.9-105.7

Table 3.2-56: Protein content of winter wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)					
Maritime (n=17)	11.6	9.3-13.5	99.8	93.7-107.7	99.3	94.3-105.2	-	
South-East (n=21)	11.7	5.9-15.4	102.9	82.2-165.7	102.2	57.4-177.8	-	
North East (n=18)	13.3	10.9-14.5	99.7	94.8-102.1	99.8	90.2-106.6	-	
Maritime (n=12)	11.2	9.1-13.5	100.7	96.7-107.7	-		101.0	97.5-104.9
South-East (n=5)	11.4	5.9-15.1	113.4	96.3-165.7	-		112.0	97.0-153.3
North East (n=9)	13.2	10.9-14.5	99.2	94.8-101.7	-		100	94.5-102.5

Spring wheat

The data presented from 8 efficacy trials, collected across the Maritime (3 trials), South-East (2 trials) and North-East (3 trials) EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in hectolitre weight and thousand grain weight when compared to the untreated control. The quality parameters were similar to those of the standards FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrofenone).

The data also demonstrated that, plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on percentage protein content when compared with the untreated control. The results were similar to those of the standards FANDANGO at 1.5 LPR/ha (bixafen 75 gai/ha + prothioconazole 150 gai/ha) and FLEXITY 300SC at 1.5 LPR/ha (150 gai/ha metrafenone).

A summary of the data across EPPO zones are presented in Table 3.2-57, Table 3.2-58 and Table 3.2-59 for the later application timing and in Table 3.2-60, Table 3.2-61 and Table 3.2-62 for the early application timing.

Table 3.2-57: Hectolitre weight of spring wheat treated with A23282A in presence of disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)			
Maritime (n=3)	78.5	74.2-83.8	100	99.5-100.3	100	99.2-100.6
South-East (n=2)	74.3	73.0-75.5	102.3	100.7-103.8	102.6	101.5-103.7
North East (n=2)	76.2	73.1-79.2	101.3	101.1-101.4	100.4	99.0-101.8

Table 3.2-58: Thousand grain weight of spring wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=3)	44.8	44.1-45.2	100.4	99.0-102.0	100.2	99.5-101.1
South-East (n=2)	35.3	33.6-37.0	103.0	98.6-107.3	105.0	103.6-106.3
North East (n=3)	43.3	36.8-46.9	103.3	103.0-103.5	101.8	98.0-104.0

Table 3.2-59: Protein content of spring wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=3)	12.8	11.2-14.1	100.1	98.9-100.8	100.6	98.0-104
South-East (n=2)	11.5	9.7-13.2	105.9	104.0-107.7	103.2	102.7-103.6
North East (n=2)	14.6	13.5-15.7	100.8	99.0-102.6	101.7	101.6-101.7

Table 3.2-60: Hectolitre weight of spring wheat treated with A23282A in presence of disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)					
Maritime (n=2)	75.9	74.2-77.5	99.2	98.6-99.8	100.0	99.8-100.1		
South-East (n=2)	74.3	73.0-75.5	101.3	99.3-103.3	103.0	102.6-103.3		
North East (n=1)	73.1		99.7		99.8			

Table 3.2-61: Thousand grain weight of spring wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)					
Maritime (n=2)	45.2	45.1-45.2	99.7	98.9-100.5	99.5	98.7-100.2		
South-East (n=2)	35.3	33.6-37.0	97.8	91.0-104.5	103.6	102.5-104.7		
North East (n=1)	36.8		100.1		99.8			

Table 3.2-62: Protein content of spring wheat treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)					
Maritime (n=2)	12.7	11.2-14.1	100.1	99.1-101.1	98.0	96.8-99.1		
South-East (n=2)	11.5	9.7-13.2	113.4	109.4-117.4	94.9	90.6-99.2		
North East (n=1)	15.7		99.2		100			

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rates of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on wheat quality in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in wheat grain hectolitre weight and thousand grain weight and had no adverse effect on protein quality.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of foliar diseases on winter, spring and durum wheat, under a wide range of environmental conditions.

Efficacy in barley

Trials methodology in relation to EPPO

Trials were conducted according to the EPPO guidelines stated in Table 3.2-63. Full details of the sites and applications are provided in Appendix 2. Official testing organisation certificates are available in the GEP Certificate Database System (Certibase) (<http://www.gepcertibase.eu>) and are provided via the hyperlinks in Annex Point IIIA 3.7.

The trial layout was according to the randomized complete block design with four replicates per treatment. All normal crop husbandry measures were applied to the trials area by the grower, according to crop requirements and in accordance with good agricultural practice. Trials included a range of soil types and locations to determine crop tolerance and efficacy on a number of commercially grown varieties, under a range of conditions. All the trials were placed within regions where barley is commonly grown and data have been presented on diseases which are also indigenous to the area covered. Crop growth stages (BBCH scale) and disease levels were recorded at the time of application and assessments.

Within the trials, data are presented from a single application of A23282A applied between BBCH 32 and BBCH 59. Within the trials where the test treatments were applied at the later application timings, if required due to high early season disease pressure, a cover spray using locally registered fungicides was applied across the trials area, excluding the untreated plot, at growth stage BBCH 31-32 to maintain good agricultural practice and to keep the crop healthy until the test treatments were applied. The cover spray also included the untreated plots and an additional treatment excluding cover spray was included to reflect the disease incidence without any protection.

Pest growth at application is described on the basis of development stage. Crop growth stages are described using the standard BBCH scale. In all trials, efficacy was assessed according to EPPO guidelines.

Crop phytotoxicity was assessed at various intervals after application. All assessments were on a 0-100 scale, where 0 = no damage and 100 = total crop loss. Individual symptoms were recorded where appropriate. Where no phytotoxicity was observed, this was generally recorded within the individual trial data. Only data where phytotoxicity was recorded was presented in the dossier.

Crop yield was assessed in the majority of the efficacy trials. Plot size fulfilled the minimum of 10 m² required by EPPO. Yield assessments included grain yield [dt/ha] as well as different quality parameters (hectolitre weight [kg/hl], thousand grain weight [g], and protein content [%]). In some trials, yield parameters were analysed with a mixed sample of the four replicates. In this case no statistical analysis is presented in the summary tables.

For the overall efficacy evaluation of foliar diseases, a time window from 14 days to up to approximately 42 days after application was used. This limit was set to reflect the maximum control that can be achieved following application of A23282A. In the majority of trials more than one assessment was undertaken, but for the results tables the mean of one selected data point per trial was calculated. The selected data point was chosen according to the following criteria: - in each trial % control/infestation on the highest leaf showing at least an infected leaf area of 5% in the check, at the timing within the defined time window when maximum control was achieved. Trials were only included where at least one product within the trial showed significant control of the disease. For all diseases efficacy evaluation was based on pest severity assessments.

For the Eyespot trials additionally pest incidence assessments were carried out as class assessment. 25 plants per plot were assessed and the number of plants were divided according to the EPPO guideline PP1/28 (3) into 4 classes, where:

Class 0 = healthy plant;

Class 1 = slight lesions, less than 50% of tiller circumference attacked at place where infection is most server, tissue still firm

Class 2 =moderate lesions, more than 50% of tiller circumference attacked at place where infection is most server, tissue still firm

Class 3 = server lesions, 100% of the tiller circumference attacked, tissue rotten

Percent control is calculated according to formula of Abbott, so negative values may result if a treated variant performs worse than the untreated control. If this was the case for single assessments the values were set to 0 (= no efficacy) for the overall efficacy evaluation, to avoid an excessive influence of these values as a fungicide treatment at its worst will have no efficacy (= 0) but normally will not have any supporting effects on a disease which would be supposed if negative values were used. Therefore, in the summary tables no negative values occur. However, the single trial reports contain the automatically calculated values.

The **Student-Newman-Keuls (SNK)** method is a test for simultaneous comparisons of multiple means which controls error rates among tests of multiple groups of means (multiple range test). Please note that from all of the above trials, the results in summary tables were extracted from trials reports where treatments of no relevance to this submission were also included. As statistical analyses were conducted across the whole range of treatments, significance letters relate to the whole treatment list and not just to the data shown in the extracted tables.

Table 3.2-63: Details on trial methodology from barley trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4), PP 1/214, PP 1/223, PP 1/226
	Specific guidelines	EPPO: PP 1/026 (4) Foliar and ear diseases in cereals EPPO: PP 1/028 (3) (Eyespot of cereals)
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 10.0 – 40.0 m ² South-East EPPO zone: 10.0-24.0 m ² North East EPPO zone: 10.0 – 27.0 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 36 South East EPPO zone: 29 North East EPPO zone: 38
	Varieties per crop	Maritime EPPO Zone: Winter barley: Akkord, Bazooka, Belmont, Bolton, California, Cassia, Etincel, Ketos, Gimlet, Orwell, Lomerit, Margaux, Mountain, Neptun, Orbit, Patriot, Rafaela, Sandra, Vireni, Tonic, Valeria Spring barley: Avalon, Fantex, Focus, Propino, Quench, Planet South-East EPPO zone: Winter barley: Adelina, Antonella, Barun, Belissa, Funy, Hannelore, Jakubus, Jup, Cazanova, Skala, Laverda, Obzor, Perun, Romanita, Sandra, Smarald, Ellen, Wendy Spring barley: Delphi, Maltea North-East EPPO zone: Winter barley: Ariana, Astaire, Barracuda, Bartosz, Bazant, Carola, Gloria, Higgins, Kaylin, Kobuz, Kosmos, Meridian, Quadriga, Rosita, Scarpia, Vireni, Tepee, Tenor, Wootan, Zenek, Spring barley; Ansis, Argento, Ovation, Pilot, Rasa, Planet

	Sowing period	Maritime EPPO zone Winter Barley: September - November Spring Barley: April South-East EPPO zone Winter Barley: September - November Spring Barley: April North East EPPO zone Winter Barley: September - November Spring Barley: April
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: winter barley: BBCH 37-51; BBCH 32-32 Spring barley: BBCH 39-49; BBCH 31-32 South-East EPPO zone: Winter barley: BBCH 39-51; BBCH 30-32 Spring barley: BBCH 39-51; BBCH 32-33 North East EPPO zone: Winter barley: BBCH 39-51; BBCH 31-33 Spring barley: BBCH 39-49; BBCH 31-32
	Timing Pest stage at application	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 150-300 l/ha South East EPPO zone: 200-300 l/ha North East EPPO zone: 200-300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity, chlorosis, necrosis, vigour reduction, discolouration Efficacy: % disease severity Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Efficacy % disease severity assessments: 14-42 DAA Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: calc. clay, clay, clay loam, oarse sandy loam, fine sandy loam, heavy clay, loam, loamy clay sand, loamy sand, loess, sand, sandy clay, sandy clay loam, sandy loam, silt, silty clay, silty sand South-East EPPO Zone: clay, clay loam, fine clay loam, loam, loamy clay, loamy clay sand, sandy clay loam, sandy loam, silt loam, silty clay loam North-East EPPO Zone: calc. loamy sand, calc. sandy loam, clay, clay loam, clayey silt, silt, silt loam, silt clay
	Natural / artificial inoculation	Natural infestation
	Field / Greenhouse	Field

Efficacy against *Pyrenophora teres* (PYRNTE) on barley

The data presented from 49 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Pyrenophora teres* (PYRNTE) on winter and spring barley, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented for the late application timing (BBCH 37-51) in Table 3.2-64 and for the early application timing (BBCH31-33) in Table 3.2-65.

Table 3.2-64: Mean efficacy of A23282A against *Pyrenophora teres* on barley, summarised across EPPO zones, late application timing (BBCH 37-51)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Pyrenophora teres</i>	Maritime (n=9)	20.0	7.8-36.9	90.6	60.6-100	83.7	48.4-100
	South-East (n=22)	11.3	5.1-35.6	85.7	59.3-99.6	80.6	46.8-99.7
	North-East (n=15)	12.5	5.0-30.3	88.0	45.7-100	78.5	49.4-97.2

Table 3.2-65: Mean efficacy of A23282A against *Pyrenophora teres* on barley, summarised across EPPO zones, early application timing (BBCH 31-33)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Pyrenophora teres</i>	Maritime (n=1)	11.6	-	82.7	-	81.1	-
	South-East (n=6)	8.6	5.3-12.8	82.4	56.6-100	80.7	54.1-100
	North-East (n=3)	41.7	15.5-65.8	75.5	62.3-92.4	72.4	49.4-94.3

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-59 for the control of *Pyrenophora teres* (PYRNTE) on winter and spring barley, under a wide range of environmental conditions.

Efficacy against *Rhynchosporium secalis* (RHYNSE) on barley

The data presented from 17 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Rhynchosporium secalis* (RHYNSE) on winter and spring barley, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented in Table 3.2-66 for the later application timing and in Table 3.2-67 for the early application timing.

Table 3.2-66: Mean efficacy of A23282A against *Rhynchosporium secalis* on barley, summarised across EPPO zones, late application timing (BBCH 35-51)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Rhynchosporium secalis</i>	Maritime (n=8)	14.0	6.2-29.7	92.1	79.4-100	87.0	74.1-100
	South-East (n=3)	18.5	5.6-38.1	86.9	75.3-95.4	86.9	76.2-95.8
	North-East (n=6)	8.3	6.5-11.8	87.7	62.7-100	78.8	45.4-100

Table 3.2-67: Mean efficacy of A23282A against *Rhynchosporium secalis* on barley, summarised across EPPO zones, early application timing (BBCH 31-33)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Rhynchosporium secalis</i>	Maritime (n=3)	8.8	7.2-8.9	58.0	56.0-61.2	60.7	38.5-75.4
	South-East (n=1)	13.5	-	33.1	-	34.7	-
	North-East (n=2)	8.4	7.2-9.5	69.0	40.6-97.4	73.8	49.5-98.1

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-59, for the control of *Rhynchosporium secalis* (RHYNSE) on winter and spring barley, under a wide range of environmental conditions.

Efficacy against *Ramularia collo-cygni* (RAMUCC) on barley

The data presented from 19 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Ramularia collo-cygni* (RAMUCC) on winter and spring barley, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha and FLEXITY 300 SC (300 gai/L metrafenone). A summary of the data across EPPO climatic zones are presented in Table 3.2-68 for the later application timing.

Table 3.2-68: Mean efficacy of A23282A against *Ramularia collo-cygni* on barley, summarised across EPPO zones, late application (BBCH 39-51)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Ramularia collo-cygni</i>	Maritime (n=8)	26.6	5.9-57.5	75.6	58.8-90.2	69.0	33.6-88.3
	South-East (n=7)	19.7	5.4-43.4	83.9	70.4-93.7	75.2	63.8-90.5
	North-East (n=4)	14.2	7.4-30.6	93.8	91.5-95.9	76.9	42.5-95.1

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-59, for the control of *Ramularia collo-cygni* (RAMUCC) on winter and spring barley, under a wide range of environmental conditions.

Efficacy against *Puccinia hordei* (PUCCHD) on barley

The data presented from 40 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Puccinia hordei* (PUCCHD) on winter and spring barley, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented for the late application timing (BBCH 37-51) in Table 3.2-69 and for the early application timing (BBCH 31-33) in Table 3.2-70.

Table 3.2-69: Mean efficacy of A23282A against *Puccinia hordei* on barley, summarised across EPPO zones, late application timing (BBCH 37-51)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Puccinia hordei</i>	Maritime (n=11)	8.1	5.0-22.9	92.3	77.5-100	89.6	52.9-100
	South-East (n=9)	10.3	5.2-26.9	93.6	83.0-100	91.8	75.8-100
	North-East (n=15)	14.1	5.0-50.1	94.8	81.5-100	91.5	68.7-100

Table 3.2-70: Mean efficacy of A23282A against *Puccinia hordei* on barley, summarised across EPPO zones, early application timing (BBCH 31-33)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Puccinia hordei</i>	Maritime (n=4)	7.7	5.6-11.8	90.7	76.0-98.8	76.2	51.8-100
	North-East (n=3)	19.9	6.2-36.2	96.4	90.4-100	95.4	89.1-99.8
Overall Mean across zones (n=7)		12.9	5.6-36.2	93.1	76.0-100	84.4	51.8-100

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-59 for the control of *Puccinia hordei* (PUCCHD) on winter and spring barley, under a wide range of environmental conditions.

Efficacy against *Blumeria graminis* (ERYSGR) on barley

The data presented from 14 trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Blumeria graminis* (ERYSGR) on winter and spring barley, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented for the late application timing (BBCH 39-59) in Table 3.2-71 and for the early application timing (BBCH 31-33) in Table 3.2-72.

Table 3.2-71: Mean efficacy of A23282A against *Blumeria graminis* on barley, summarised across EPPO zones, late application timing (BBCH 39-59)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Blumeria graminis</i>	Maritime (n=3)	22.3	11.7-30.7	91.5	83.9-100	80.0	54.9-100
	South-East (n=4)	9.3	7.1-12.1	94.5	90.1-100	87.2	76.5-100
	North-East (n=4)	15.5	5.4-28.2	98.0	92.1-100	95.1	81.0-100

Table 3.2-72: Mean efficacy of A23282A against *Blumeria graminis* on barley, summarised across EPPO zones, early application timing (BBCH 31-33)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Blumeria graminis</i>	Maritime (n=2)	6.8	5.5-8.1	94.4	88.7-100	100	100-100
	South-East (n=1)	6.2	-	100	-	100	-
	North-East (n=5)	9.2	6.4-12.1	89.8	61.8-100	91.3	67-99.9

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-59 for the control of *Blumeria graminis* (ERYSGR) on winter and spring barley, under a wide range of environmental conditions.

Efficacy against Eyespot (*Pseudocercospora* sp.)

The data presented from 15 trials, collected across the Maritime and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided good levels of control and should be considered as effective against Eyespot (*Pseudocercospora herpotrichoides* (**PSDCHE**)) on winter and spring barley, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FLEXITY 300 SC (metrafenone 300 gai/L) at 0.5 LPR/ha. A summary of the data across EPPO climatic zones is presented in Table 3.2-73 and Table 3.2-74.

Table 3.2-73: Mean efficacy of A23282A against Eyespot on barley, summarised across EPPO zones (% disease severity)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FLEXITY 300 SC 0.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
Eyespot	Maritime (n=6)	27.0	14.3-44.1	66.1	46.3-83.0	56.0	26.2-77.4
	North-East (n=9)	34.4	7.2-59.5	85.7	69.3-100	54.5	29.4-78.5

Table 3.2-74: Mean efficacy of A23282A against Eyespot on barley, summarised across EPPO zones, disease incidence (Class assessments)

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FLEXITY 300 SC 0.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
Eyespot Class 0	Maritime (n=6)	6.3	0.8-11.2	12.9	6.5-18.5	11.6	3.2-17.8
	North-East (n=9)	7.7	0-14.2	16.8	4.5-25.0	12.7	0-21.0
Eyespot Class 1	Maritime (n=6)	14.1	10.5-22.2	11.4	6.5-18.2	11.8	6.5-20.2
	North-East (n=9)	8.1	3.0-14.0	7.5	0-20.5	8.9	1.5-20.0
Eyespot Class 2	Maritime (n=6)	3.4	1.0-8.0	0.6	0.0-2.5	1.4	0.2-4.2
	North-East (n=9)	7.1	0-10.5	7.0	0-3.2	2.7	0-6.2
Eyespot Class 3	Maritime (n=6)	1.2	0.0-4.2	0.1	0.0-0.5	0.3	0.0-1.5
	North-East (n=9)	2.1	0-5.0	0.0	0.0-0.0	0.6	2.0-2-5

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-59 for the control of Eyespot (*Pseudocercospora herpotrichoides* (**PSDCHE**)) on winter and spring barley, under a wide range of environmental conditions.

Yield (and relevant quality indicators), from efficacy trials (in the presence of disease)

Barley yield

Winter barley

The data presented from efficacy trials where foliar diseases or eyespot were present, collected across the Maritime, South-East and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in winter barley yield when compared to the untreated control. The observed yields were at least comparable or increased compared to those of the standards FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and increased compared to those of the standard FLEXITY 300 SC at 0.5 LPR/ha (150 gai/ha metrafenone). In some of the trials targeted for eyespot both reference standards were used. A summary of the data across EPPO climatic zones are presented for the late application timing in Table 3.2-75 and for the early application timing in Table 3.2-76.

Table 3.2-75: Mean yield of winter barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=21)	78.1	50.5-107.8	113.2	96.6-136.7	111.3	97.9-139.6
South-East (n=26)	55.6	25.0-90.2	112.4	94.9-133.9	110.0	86.3-125.9
North East (n=22)	70.3	32.9-122.4	113.4	97.2-133.1	111.9	97.3-126.2

Table 3.2-76: Mean yield of winter barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)					
Maritime (n=20)	70.0	38.8-106.5	111.3	98.1-122.9	109.7	99.4-126.8	-	
South-East (n=15)	55.6	39.9-87.0	108.6	94.9-121.2	106.7	83.1-118.8	-	
North East (n=15)	64.5	32.9-100.5	108.0	101.7-115.6	108.4	96.9-123.4	-	
Maritime (n=8)	71.4	38.8-106.5	108.0	101.6-119.7	-		103.0	90.4-108.9
North East (n=8)	74.4	56.5-98.7	109.7	102.5-115.4	-		107.5	100.2-123.9

Spring barley

The data presented from efficacy trials where foliar diseases or eyespot were present, collected across the Maritime, South-East and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in spring barley yield when compared to the untreated control. The observed yields were at least comparable or increased compared to those of the standards FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and increased compared to those of the standard FLEXITY 300 SC at 0.5 LPR/ha (150 gai/ha metrafenone). In some of the trials targeted for eyespot both reference standards were used. A summary of the data across EPPO climatic zones are presented for the late application timing in Table 3.2-77 and for the early application timing in Table 3.2-78.

Table 3.2-77: Mean yield of spring barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=7)	58.2	41.5-76.5	111.6	93.5-126.6	108.9	98.5-121.7
South-East (n=2)	37.9	20.2-55.6	107.3	104.6-109.9	102.8	93.1-112.4
North East (n=5)	44.1	21.0-76.0	114.4	106.2-123.0	112.1	105.3-120.2

Table 3.2-78: Mean yield of spring barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 200 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Yield (dt/ha)		Yield (% of control)					
Maritime (n=6)	55.1	41.5-75.0	110.1	97.3-120.4	110.5	99.4-135.8	-	
South-East (n=2)	37.9	20.2-55.6	104.2	99.3-109.0	105.6	102.4-108.7	-	
North East (n=7)	39.5	16.2-76.0	110.7	104.4-129.4	109.7	99.1-127.2	-	
North East (n=2)	28.0	16.2-39.8	117.0	104.5-129.4	-		99.7	98.7-106.0

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on yield in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in barley yield, indicating that untreated disease can lead to significant yield reductions. The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of foliar diseases and eyespot on winter and spring barley under a wide range of environmental conditions.

Barley quality

Winter barley

The data presented from 84 efficacy trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in hectolitre weight and thousand grain weight when compared to the untreated control. The quality parameters were similar to those of the standards FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrofenone).

The data also demonstrated that, plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on percentage protein content when compared with the untreated control. The results were similar to those of the standards FANDANGO at 1.5 LPR/ha (bixafen 75 gai/ha + prothioconazole 150 gai/ha) and FLEXITY 300SC at 1.5 LPR/ha (150 gai/ha metrafenone).

A summary of the data across EPPO zones are presented in Table 3.2-79, Table 3.2-80 and Table 3.2-81 for the later application timing and in Table 3.2-82, Table 3.2-83 and Table 3.2-84 for the early application timing.

Table 3.2-79: Hectolitre weight of winter barley treated with A23282A in presence of disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)			
Maritime (n=25)	58.4	48.1-69.0	103.3	98.1-110.9	103.1	97.7-112.3
South-East (n=27)	61.9	53.8-67.7	102.1	98.3-107.1	101.7	96.6-107.4
North East (n=17)	57.9	47.2-64.3	101.4	95.3-105.2	101.0	85.7-107.3

Table 3.2-80: Thousand grain weight of winter barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=20)	40.6	30.4-57.2	108.0	98.1-125	108.1	96.9-124.4
South-East (n=27)	44.6	37.9-59.2	104.6	98.9-117.9	103.7	91.2-119.1
North East (n=18)	41.1	29.3-49.6	104.9	99.4-117.0	104.0	97.4-114.0

Table 3.2-81: Protein content of winter barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=20)	11.7	9.3-16.5	99.7	92.2-105	98.9	92.2-101.7
South-East (n=24)	10.0	1.7-15.5	98.6	67.0-121.6	99.8	81.6-108.1
North East (n=18)	11.7	8.6-14.6	101.3	98.5-115.0	101.9	91.1-118.9

Table 3.2-82: Hectolitre weight of winter barley treated with A23282A in presence of disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)					
Maritime (n=25)	58.0	48.1-67.8	100.6	91.1-105.7	101.1	94.0-107.0	-	
South-East (n=16)	62.5	54.8-67.1	100.1	97.4-103.5	101.1	99.6-103.9	-	
North East (n=17)	57.6	44.8-63.8	100.9	95.1-104.7	99.5	81.8-103.4	-	
Maritime (n=10)	59.5	50.7-65.7	99.1	91.1-103.0	-		97.5	78.0-104.5
North East (n=11)	56.4	34.6-64.8	102.4	98.2-111.8	-		100.8	99.1-103.6

Table 3.2-83: Thousand grain weight of winter barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)					
Maritime (n=19)	39.7	30.4-57.0	104.1	94.4-114.4	103.9	96.7-118.1		
South-East (n=16)	43.1	38.6-49.8	103.4	97.9-111.2	103.7	96.8-110.8		
North East (n=17)	39.4	29.3-48.8	103.5	95.4-112.6	104.4	96.0-114.9		
Maritime (n=6)	44.4	32.3-57.0	101.7	97.0-105.1			97.8	99.1-103.6
North East (n=8)	41.6	35.2-47.0	102.6	96.4-113.1			101.9	100.2-105.9

Table 3.2-84: Protein content of winter barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)					
Maritime (n=19)	11.6	8.4-16.5	101.1	96.6-108.5	99.6	87.0-105.7		
South-East (n=16)	9.1	1.7-13.2	99.7	88.3-122.6	102.7	84.0-129.2		
North East (n=17)	11.1	8.6-12.9	100.5	94.9-107.5	100.1	92.3-107.0		
Maritime (n=6)	10.8	8.4-12.2	100.4	96.6-103.6			101.1	99.2-104.8
North East (n=8)	11.1	10.3-11.8	100.0	96.5-102.1			99.8	95.8-101.9

Spring barley

The data presented from 16 efficacy trials, collected across the Maritime, South-East and North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in hectolitre weight and thousand grain weight when compared to the untreated control. The quality parameters were similar to those of the standards FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrofenone).

The data also demonstrated that, plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on percentage protein content when compared with the untreated control. The results were similar to those of the standards FANDANGO at 1.5 LPR/ha (bixafen 75 gai/ha + prothioconazole 150 gai/ha) and FLEXITY 300SC at 1.5 LPR/ha (150 gai/ha metrafenone).

A summary of the data across EPPO zones are presented in Table 3.2-85, Table 3.2-86 and Table 3.2-87 for the later application timing and in Table 3.2-88, Table 3.2-89 and Table 3.2-90 powyżej for the early application timing.

Table 3.2-85: Hectolitre weight of spring barley treated with A23282A in presence of disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)			
Maritime (n=8)	60.4	45.7-70.4	103.6	99.7-109.4	104.0	100.6-108.9
South-East (n=2)	62.1	60.6-63.3	101.2	100.2-102.2	101.4	100.3-102.4
North East (n=7)	60.6	56.4-65.1	101.3	98.3-107.1	102.0	99.1-108.4

Table 3.2-86: Thousand grain weight of spring barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=7)	46.4	38.1-58.9	110.2	99.9-121.1	107.5	94.3-116.2
South-East (n=2)	44.1	41.2-47.0	102.7	100.8-104.6	102.0	99.3-104.6
North East (n=5)	43.7	36.7-54.2	104.7	97.9-116.8	104.8	96.6-115.7

Table 3.2-87: Protein content of spring barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, late application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=6)	11.1	9.0-13.7	100.3	94.7-104.2	100.4	98.1-103.3
South-East (n=1)	14.4		85.7		99.5	
North East (n=5)	13.2	11.2-15.9	99.1	98.0-99.8	99.9	97.6-102.1

Table 3.2-88: Hectolitre weight of spring barley treated with A23282A in presence of disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)					
Maritime (n=6)	59.7	45.7-67.0	103.4	101.1-107.9	102.5	100.3-107.1	-	
South-East (n=2)	62.1	60.6-63.6	100.6	100.0-101.1	99.3	99.2-99.4	-	
North East (n=9)	59.0	50.6-65.1	100.8	97.8-106.3	101.4	98.9-105.4	-	
North East (n=2)	53.7	50.6-56.7	101.2		-		100.1	

Table 3.2-89: Thousand grain weight of spring barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)					
Maritime (n=6)	45.7	38.1-58.9	109.1	99.8-116.1	108.4	103.2-115.8		
South-East (n=2)	44.1	41.2-47.0	103.1	102.8-103.4	99.3	99.0-99.5		
North East (n=7)	40.8	30.4-54.2	104.4	99.2-115.7	105.0	98.9-114.9		
North East (n=2)	33.8	30.4-37.1	103.6	101.8-105.4	-		100	99.8-101.0

Table 3.2-90: Protein content of spring barley treated with A23282A in presence of foliar disease, summarised across EPPO zones, early application timing

EPPO climatic zone	Untreated		A23282A 2 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 300 SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)					
Maritime (n=5)	10.6	9.0-12.6	100.1	95.3-102.4	99.1	94.4-101.3		
South-East (n=1)	14.4		90.5		115.4			
North East (n=7)	13.5	11.2-16.4	97.7	90.1-100.9	96.7	93.8-99.4		
North East (n=2)	14.5	12.5-16.4	94.2	90.1-98.2			97.9	95.9-99.8

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rates of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on barley quality in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in barley grain hectolitre weight and thousand grain weight and had no adverse effect on protein quality.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of foliar diseases on winter and spring barley, under a wide range of environmental conditions.

Efficacy in Rye

Trials methodology in relation to EPPO

Trials were conducted according to the EPPO guidelines stated in Table 3.2-91. Full details of the sites and applications are provided in Appendix 2. Official testing organisation certificates are available in the GEP Certificate Database System (Certibase) (<http://www.gepcertibase.eu>) and are provided via the hyperlinks in Annex Point IIIA 3.7.

The trial layout was according to the randomized complete block design with four replicates per treatment. All normal crop husbandry measures were applied to the trials area by the grower, according to crop requirements and in accordance with good agricultural practice. Trials included a range of soil types and locations to determine crop tolerance and efficacy on a number of commercially grown varieties, under a range of conditions. All the trials were placed within regions where rye is commonly grown and data have been presented on diseases which are also indigenous to the area covered. Crop growth stages (BBCH scale) and disease levels were recorded at the time of application and assessments.

Within the trials, data are presented from a single application of A23282A applied between BBCH 37 and BBCH 51. Within the trials where the test treatments were applied at the later application timings, if required due to high early season disease pressure, a cover spray using locally registered fungicides was applied across the trials area, excluding the untreated plot, at growth stage BBCH 31-32 to maintain good agricultural practice and to keep the crop healthy until the test treatments were applied. The cover spray also included the untreated plots and an additional treatment excluding cover spray was included to reflect the disease incidence without any protection.

Pest growth at application is described on the basis of development stage. Crop growth stages are described using the standard BBCH scale. In all trials, efficacy was assessed according to EPPO guidelines.

Crop phytotoxicity was assessed at various intervals after application. All assessments were on a 0-100 scale, where 0 = no damage and 100 = total crop loss. Individual symptoms were recorded where appropriate. Where no phytotoxicity was observed, this was generally recorded within the individual trial data. Only data where phytotoxicity was recorded was presented in the dossier.

Crop yield was assessed in the majority of the efficacy trials. Plot size fulfilled the minimum of 10 m² required by EPPO. Yield assessments included grain yield [dt/ha] as well as different quality parameters (hectolitre weight [kg/hl], thousand grain weight [g], and protein content [%]). In some trials, yield parameters were analysed with a mixed sample of the four replicates. In this case no statistical analysis is presented in the summary tables.

For the overall efficacy evaluation of foliar diseases, a time window from 14 days to up to approximately 42 days after application was used. This limit was set to reflect the maximum control that can be achieved following application of A23282A. In the majority of trials more than one assessment was undertaken, but for the results tables the mean of one selected data point per trial was calculated. The selected data point was chosen according to the following criteria: - in each trial % control/infestation on the highest leaf showing at least an infected leaf area of 5% in the check, at the timing within the defined time window when maximum control was achieved. Trials were only included where at least one product within the trial showed significant control of the disease. For all diseases efficacy evaluation was based on pest severity assessments.

Percent control is calculated according to formula of Abbott, so negative values may result if a treated variant performs worse than the untreated control. If this was the case for single assessments the values were set to 0 (= no efficacy) for the overall efficacy evaluation, to avoid an excessive influence of these values as a fungicide treatment at its worst will have no efficacy (= 0) but normally will not have any supporting effects on a disease which would be supposed if negative values were used. Therefore, in the summary tables no negative values occur. However, the single trial reports contain the automatically calculated values.

The **Student-Newman-Keuls** (SNK) method is a test for simultaneous comparisons of multiple means which controls error rates among tests of multiple groups of means (multiple range test). Please note that from all of the above trials, the results in summary tables were extracted from trials reports where treatments of no relevance to this submission were also included. As statistical analyses were conducted across the whole range of treatments, significance letters relate to the whole treatment list and not just to the data shown in the extracted tables.

Table 3.2-91: Details on trial methodology from rye trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4), PP 1/214, PP 1/223, EPPO:PP 1/225 (4), PP 1/226
	Specific guidelines	EPPO: PP 1/026 (4) Foliar and ear diseases in cereals
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 12.0 – 40.0 m ² North East EPPO zone: 14.0 – 25.0 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 11 North East EPPO zone: 9
	Varieties per crop	Maritime EPPO Zone: Composit, Binntto, Performer, Mephisto, Forsetti, Arentes, Tayo, Serafino, Rubin North East EPPO zone: Bono, Bojko, Dolaro, Dankowskie Diament, Dankowskie Granat, Jethro, Piano, Tur
	Sowing period	Maritime EPPO zone Winter Rye: September – October Spring Rye: April North East EPPO zone Winter Rye: September – October Spring Rye: April
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 37-51 North East EPPO zone: BBCH 37-51
	Timing Pest stage at application	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 200-300 l/ha North East EPPO zone: 200-300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity, chlorosis, necrosis, vigour reduction, discolouration Efficacy: % disease severity

		Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Efficacy % disease severity assessments: 14-42 DAA Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: sand, loamy sand, sandy loam, loam, sandy clay North East EPPO zone: loamy sand, sandy loam, silt loam, silt
	Natural / artificial inoculation	Natural infestation
	Field / Greenhouse	Field

Efficacy against *Rhynchosporium secalis* (RHYNSE) on rye

The data presented from 20 trials, collected across the Maritime and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Rhynchosporium secalis* (RHYNSE) on winter and spring rye, for which activity of A23282A is claimed. The observed levels of control were increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented in Table 3.2-92.

Table 3.2-92: Mean efficacy of A23282A against *Rhynchosporium secalis* on rye, summarised across EPPO zones

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Rhynchosporium secalis</i>	Maritime (n=11)	14.3	5.0-27.8	85.8	62.1-97.4	79.6	56.8-98.0
	North-East (n=9)	22.5	5.5-51.6	88.5	67.9-100	86.0	65.0-100

Despite the fact that efficacy data are not available for all EPPO zones, data was presented from the Maritime EPPO zone which is one of the principal rye growing regions of Europe. The data presented from the Maritime EPPO zone demonstrated that A23282A provided good efficacy levels of *Rhynchosporium secalis* in barley. As the data previously presented on wheat and barley have demonstrated that A23282A performs similarly across EPPO zones, it is reasonable to assume that efficacy in the Mediterranean and South-East EPPO zones would be similar to that observed in the Maritime EPPO zone.

Rye (*Secale cereale*) is a cereal grain, grown as a grain, cover and forage crop. It is closely related to both wheat (*Triticum*) and barley (*Hordeum*). It is affected by the barley disease *Rhynchosporium secalis* for which data have been previously presented within this dossier. Rye is grown under similar agronomic practices, in similar regions to barley. Therefore, due to the similarities between rye and barley it is proposed that it is acceptable to extrapolate from barley to rye for disease control with the data presented within this section providing confirmatory evidence to demonstrate the performance of A23282A against *Rhynchosporium secalis* on rye.

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-69 for the control of *Rhynchosporium secalis* (RHYNSE) on winter and spring rye.

Rye yield

The data presented from 20 efficacy trials where *Rhynchosporium secalis* was present, collected across the Maritime and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in rye yield when compared to the untreated control. The observed yields were similar to those of the standard FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin). A summary of the data across EPPO climatic zones are presented in Table 3.2-93.

Table 3.2-93: Mean yield of rye treated with A23282A in presence of foliar disease, summarised across EPPO zones

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield						
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=11)	66.8	34.1 – 99.3	113.0	98.0 – 185.8	114.0	98.5 – 191.6
North East (n=9)	58.6	24.3 – 105.3	110.6	94.6 – 123.0	112.9	102.3 – 128.8

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on yield in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in rye yield, indicating that untreated disease can lead to significant yield reductions. The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Rhynchosporium secalis* on winter and spring rye under a wide range of environmental conditions.

Rye quality

The data presented from 20 rye trials, where *Rhynchosporium secalis* was present, collected across the Maritime and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in hectolitre weight and thousand grain weight when compared to the untreated control. The quality parameters were similar to those of the standard FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin).

The data also demonstrated that, plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on percentage protein content when compared with the untreated control. The results were similar to were similar to those of the standard FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin).

Table 3.2-94: Hectolitre weight of rye treated with A23282A in presence of foliar disease, summarised across EPPO zones

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean HLW						
	HLW (kg/hl)		HLW (% of control)			
Maritime (n=11)	67.8	58.8 – 74.8	100.3	98.5 – 102.5	100.0	95.7 – 105.5
North East (n=9)	71.3	62.1 – 74.1	100.5	99.7 – 101.6	100.5	99.3 – 102.7

Table 3.2-95: Thousand grain weight of rye treated with A23282A in presence of foliar disease, summarised across EPPO zones

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean TGW						
	TGW (g)		TGW (% of control)			
Maritime (n=11)	30.7	26.1 – 44.7	101.0	95.7 – 109.7	101.1	97.3 – 107.7
North East (n=9)	29.0	20.1 – 34.9	102.2	97.5 – 106.9	103.0	96.5 – 110.1

Table 3.2-96: Protein content of rye treated with A23282A in presence of foliar disease, summarised across EPPO zones

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean % protein content						
	Protein content (%)		Protein content (% of control)			
Maritime (n=11)	9.5	7.9 – 13.7	101.8	98.8 – 106.3	101.3	98.8 – 104.7
North East (n=9)	10.3	8.4 – 14.7	101.1	99.5 – 104.7	100.4	94.3 – 105.7

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rates of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on rye quality in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in rye grain hectolitre weight and thousand grain weight and had no adverse effect on protein quality.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Rhynchosporium secalis* on winter and spring rye.

Efficacy in Triticale

Trials methodology in relation to EPPO

Trials were conducted according to the EPPO guidelines stated in Table 3.2-97. Full details of the sites and applications are provided in Appendix 2. Official testing organisation certificates are available in the GEP Certificate Database System (Certibase) (<http://www.gepcertibase.eu>) and are provided via the hyperlinks in Annex Point IIIA 3.7.

The trial layout was according to the randomized complete block design with four replicates per treatment. All normal crop husbandry measures were applied to the trials area by the grower, according to crop requirements and in accordance with good agricultural practice. Trials included a range of soil types and locations to determine crop tolerance and efficacy on a number of commercially grown varieties, under a range of conditions. All the trials were placed within regions where triticale is commonly grown and data have been presented on diseases which are also indigenous to the area covered. Crop growth stages (BBCH scale) and disease levels were recorded at the time of application and assessments.

Within the trials, data are presented from a single application of A23282A applied between BBCH 37 and BBCH 55. Within the trials where the test treatments were applied at the later application timings, if required due to high early season disease pressure, a cover spray using locally registered fungicides was applied across the trials area, excluding the untreated plot, at growth stage BBCH 31-32 to maintain good agricultural practice and to keep the crop healthy until the test treatments were applied. The cover spray also included the untreated plots and an additional treatment excluding cover spray was included to reflect the disease incidence without any protection.

Pest growth at application is described on the basis of development stage. Crop growth stages are described using the standard BBCH scale. In all trials, efficacy was assessed according to EPPO guidelines.

Crop phytotoxicity was assessed at various intervals after application. All assessments were on a 0-100 scale, where 0 = no damage and 100 = total crop loss. Individual symptoms were recorded where appropriate. Where no phytotoxicity was observed, this was generally recorded within the individual trial data. Only data where phytotoxicity was recorded was presented in the dossier.

Crop yield was assessed in the majority of the efficacy trials. Plot size fulfilled the minimum of 10 m² required by EPPO. Yield assessments included grain yield [dt/ha] as well as different quality parameters (hectolitre weight [kg/hl], thousand grain weight [g], and protein content [%]). In some trials, yield parameters were analysed with a mixed sample of the four replicates. In this case no statistical analysis is presented in the summary tables.

For the overall efficacy evaluation of foliar diseases, a time window from 14 days to up to approximately 42 days after application was used. This limit was set to reflect the maximum control that can be achieved following application of A23282A. In the majority of trials more than one assessment was undertaken, but for the results tables the mean of one selected data point per trial was calculated. The selected data point was chosen according to the following criteria: - in each trial % control/infestation on the highest leaf showing at least an infected leaf area of 5% in the check, at the timing within the defined time window when maximum control was achieved. Trials were only included where at least one product within the trial showed significant control of the disease. For all diseases efficacy evaluation was based on pest severity assessments.

Percent control is calculated according to formula of Abbott, so negative values may result if a treated variant performs worse than the untreated control. If this was the case for single assessments the values were set to 0 (= no efficacy) for the overall efficacy evaluation, to avoid an excessive influence of these values as a fungicide treatment at its worst will have no efficacy (= 0) but normally will not have any supporting effects on a disease which would be supposed if negative values were used. Therefore, in the summary tables no negative values occur. However, the single trial reports contain the automatically calculated values.

The **Student-Newman-Keuls** (SNK) method is a test for simultaneous comparisons of multiple means which controls error rates among tests of multiple groups of means (multiple range test). Please note that from all of the above trials, the results in summary tables were extracted from trials reports where treatments of no relevance to this submission were also included. As statistical analyses were conducted across the whole range of treatments, significance letters relate to the whole treatment list and not just to the data shown in the extracted tables.

Table 3.2-97: Details on trial methodology from triticale trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4), PP 1/214, PP 1/223, EPPO:PP 1/225 (4); PP 1/226
	Specific guidelines	EPPO: PP 1/026 (4) Foliar and ear diseases in cereals
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 10.0 – 40.0 m ² North East EPPO zone: 14.0 – 27.5 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 4 North East EPPO zone: 6
	Varieties per crop	Maritime EPPO Zone: Jokari, Lombardo, Tantris North East EPPO zone: Belcanto, Dolindo, Fredro, Meloman, Rotondo, Tadeus
	Sowing period	Maritime EPPO zone Winter Triticale: September – October North East EPPO zone Winter Triticale: September – October
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 39-55 North East EPPO zone: BBCH 37-51
	Timing Pest stage at application	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 200-300 l/ha North East EPPO zone: 200-300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity, chlorosis, necrosis, vigour reduction, discolouration Efficacy: % disease severity Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season

		Efficacy % disease severity assessments: 14-42 DAA Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: loam, loamy sand, sandy loam, silt loam, sandy loam North East EPPO zone: clayed sand, sandy clay, loamy sand, sandy loam, silt loam, silty sand
	Natural / artificial inoculation	Natural infestation
	Field / Greenhouse	Field

Efficacy against *Zymoseptoria tritici* (SEPTTR) on triticale

The data presented from 10 trials, collected across the Maritime and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Zymoseptoria tritici* (SEPTTR) on winter and spring triticale, for which activity of A23282A is claimed. The observed levels of control were clearly increased compared to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented in Table 3.2-98.

Table 3.2-98: Mean efficacy of A23282A against *Zymoseptoria tritici* on triticale, summarised across EPPO zones

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Zymoseptoria tritici</i>	Maritime (n=4)	26.3	10.6-47.3	87.3	57.8-99.0	57.0	0-84.1
	North-East (n=6)	12.1	6.2-28.9	94.5	83.7-100	79.5	54.9-98.5

Despite the fact that efficacy data are not available for all EPPO zones, data was presented from the Maritime EPPO zone which is one of the principal triticale growing regions of Europe. The data presented from the Maritime EPPO zone demonstrated that A23282A provided good efficacy levels of *Zymoseptoria tritici* in wheat. As the data previously presented on wheat and barley have demonstrated that A23282A performs similarly across EPPO zones, it is reasonable to assume that efficacy in the Mediterranean and South-East EPPO zones would be similar to that observed in the Maritime EPPO zone.

Triticale is a cereal hybrid of wheat (*Triticum*) and rye (*Secale*). The name triticale combines the scientific names of the two genera involved. It is affected by the wheat disease *Zymoseptoria tritici*, for which data have been previously presented within this dossier. Triticale is grown under similar agronomic practices, in similar regions to wheat. Therefore due to the similarities between triticale and wheat it is proposed that it is acceptable to extrapolate from wheat to triticale for disease control, with the data presented within this section providing confirmatory evidence to demonstrate the performance of A23282A against *Zymoseptoria tritici* on triticale.

Overall conclusion

The data presented within this section fully support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied at BBCH 30-69 for the control of *Zymoseptoria tritici* (SEPTTR) on winter and spring triticale.

Triticale yield

The data presented from 10 efficacy trials where *Zymoseptoria tritici* was present, collected across the Maritime and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in triticale yield when compared to the untreated control. The observed yields were similar to those of the standard FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin). A summary of the data across EPPO climatic zones are presented in Table 3.2-99.

Table 3.2-99: Mean yield of triticale treated with A23282A in presence of SEPTTR, summarised across EPPO zones

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Zymoseptoria tritici</i>	Maritime (n=5)	60.9	49.7-80.6	107.9	102.3-121.1	103.9	96.4-126.2
	North-East (n=5)	63.7	43.4-84.4	112.4	102.5-123.5	115.4	103.5-125.3

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on yield in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in triticale yield, indicating that untreated disease can lead to significant yield reductions. The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Zymoseptoria tritici* on winter and spring triticale under a wide range of environmental conditions.

Triticale quality

The data presented from 10 winter triticale trials in presence of *Zymoseptoria tritici* collected across the Maritime and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in hectolitre weight and thousand grain weight when compared to the untreated control. The quality parameters were similar to those of the standard FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin).

The data also demonstrated that, plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on percentage protein content when compared with the untreated control. The results were similar to those of the standard FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin).

A summary of the data across EPPO zones are presented in Table 3.2-100, Table 3.2-101 and Table 3.2-102.

Table 3.2-100: Hectolitre weight of triticale treated with A23282A in presence of SEPTTR, summarised across EPPO zones

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean HLW						
	HLW (kg/hl)		HLW (% of control)			
Maritime (n=5)	62.1	56.2-72.4	101.8	100.6-104.1	101.1	99.0-104.6
North East (n=5)	71.9	67.9-74.8	101.8	100.1-103.7	101.4	99.8-103.4

Table 3.2-101: Thousand grain weight of triticale treated with A23282A in presence of foliar disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean TGW						
	TGW (g)		TGW (% of control)			
Maritime (n=5)	37.9	34.6-43.0	102.8	97.9-110.6	101.6	98.6-105.1
North East (n=5)	36.7	32.1-42.3	109.5	100-123.6	108.9	100.2-120.2

Table 3.2-102: Protein content of triticale treated with A23282A in presence of foliar disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean % protein content						
	protein content (%)		protein content (% of control)			
Maritime (n=5)	11.1	10.4-12.5	99.0	92.0-102.8	100.7	92.0-105.6
North East (n=4)	10.7	9.1-11.8	101.4	98.9-106.6	102.0	98.9-107.7

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rates of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on triticale quality in the presence of disease. In the presence of disease, the data confirmed that

controlling disease led to increases in triticale grain hectolitre weight and thousand grain weight and had no adverse effect on protein quality.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Zymoseptoria tritici* on winter and spring triticale.

Efficacy in Oats

Trials methodology in relation to EPPO

Trials were conducted according to the EPPO guidelines stated in Table 3.2-103. Full details of the sites and applications are provided in Appendix 2. Official testing organisation certificates are available in the GEP Certificate Database System (Certibase) (<http://www.gepcertibase.eu>) and are provided via the hyperlinks in Annex Point IIIA 3.7.

The trial layout was according to the randomized complete block design with four replicates per treatment. All normal crop husbandry measures were applied to the trials area by the grower, according to crop requirements and in accordance with good agricultural practice. Trials included a range of soil types and locations to determine crop tolerance and efficacy on a number of commercially grown varieties, under a range of conditions. All the trials were placed within regions where triticale is commonly grown and data have been presented on diseases which are also indigenous to the area covered. Crop growth stages (BBCH scale) and disease levels were recorded at the time of application and assessments.

Within the trials, data are presented from a single application of A23282A applied between BBCH 37 and BBCH 47. Within the trials where the test treatments were applied at the later application timings, if required due to high early season disease pressure, a cover spray using locally registered fungicides was applied across the trials area, excluding the untreated plot, at growth stage BBCH 31-32 to maintain good agricultural practice and to keep the crop healthy until the test treatments were applied. The cover spray also included the untreated plots and an additional treatment excluding cover spray was included to reflect the disease incidence without any protection.

Pest growth at application is described on the basis of development stage. Crop growth stages are described using the standard BBCH scale. In all trials, efficacy was assessed according to EPPO guidelines.

Crop phytotoxicity was assessed at various intervals after application. All assessments were on a 0-100 scale, where 0 = no damage and 100 = total crop loss. Individual symptoms were recorded where appropriate. Where no phytotoxicity was observed, this was generally recorded within the individual trial data. Only data where phytotoxicity was recorded was presented in the dossier.

Crop yield was assessed in the majority of the efficacy trials. Plot size fulfilled the minimum of 10 m² required by EPPO. Yield assessments included grain yield [dt/ha] as well as different quality parameters (hectolitre weight [kg/hl], thousand grain weight [g], and protein content [%]). In some trials, yield parameters were analysed with a mixed sample of the four replicates. In this case no statistical analysis is presented in the summary tables.

For the overall efficacy evaluation of foliar diseases, a time window from 14 days to up to approximately 42 days after application was used. This limit was set to reflect the maximum control that can be achieved following application of A23282A. In the majority of trials more than one assessment was undertaken, but for the results tables the mean of one selected data point per trial was calculated. The selected data point was chosen according to the following criteria: - in each trial % control/infestation on the highest leaf showing at least an infected leaf area of 5% in the check, at the timing within the defined time window when maximum control was achieved. Trials were only included where at least one product within the trial showed significant control of the disease. For all diseases efficacy evaluation was based on pest severity assessments.

Percent control is calculated according to formula of Abbott, so negative values may result if a treated variant performs worse than the untreated control. If this was the case for single assessments the values were set to 0 (= no efficacy) for the overall efficacy evaluation, to avoid an excessive influence of these values as a fungicide treatment at its worst will have no efficacy (= 0) but normally will not have any supporting effects on a disease which would be supposed if negative values were used. Therefore, in the summary tables no negative values occur. However, the single trial reports contain the automatically calculated values.

The **Student-Newman-Keuls** (SNK) method is a test for simultaneous comparisons of multiple means which controls error rates among tests of multiple groups of means (multiple range test). Please note that from all of the above trials, the results in summary tables were extracted from trials reports where treatments of no relevance to this submission were also included. As statistical analyses were conducted across the whole range of treatments, significance letters relate to the whole treatment list and not just to the data shown in the extracted tables.

Table 3.2-103: Details on trial methodology from oat trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4), PP 1/214, PP 1/223, EPPO:PP 1/225 (4), PP 1/226
	Specific guidelines	EPPO: PP 1/026 (4) Foliar and ear diseases in cereals
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 10.0 – 40.0 m ² North East EPPO zone: 19 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 5 North East EPPO zone: 1
	Varieties per crop	Maritime EPPO Zone: Aspen, Elyann, Poseidon, Seldon, Southwalk North East EPPO zone: Zuch
	Sowing period	Maritime EPPO zone Spring oat: April-March North East EPPO zone Spring oat: March
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 37-47 North East EPPO zone: BBCH 37
	Timing Pest stage at application	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 200 l/ha North East EPPO zone: 300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity, chlorosis, necrosis, vigour reduction, discolouration Efficacy: % disease severity Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Efficacy % disease severity assessments: 14-42 DAA

		Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: loamy sand, sandy loam, sandy clay loam North East EPPO zone: silt
	Natural / artificial inoculation	Natural infestation
	Field / Greenhouse	Field

Efficacy against *Blumeria graminis* (ERYSGR) on oats

The data presented from 6 trials, collected across the Maritime and North-East EPPO climatic zones, clearly demonstrated that the 2.0 LPR/ha rate of A23282A consistently provided excellent levels of control and should be considered as effective against *Blumeria graminis* (ERYSGR) on oats, for which activity of A23282A is claimed. The observed levels of control were comparable to the activity of the standard FANDANGO 200 EC (prothioconazole 100 gai/L + fluoxastrobin 100 gai/L) at 1.5 LPR/ha. A summary of the data across EPPO climatic zones are presented in Table 3.2-104.

Table 3.2-104: Mean efficacy of A23282A against *Blumeria graminis* on oats, summarised across EPPO zones

Target	EPPO climatic zone	Untreated		A23282A 2 L/ha		FANDANGO 200 EC 1.5 L/ha	
		Mean	min-max	Mean	min-max	Mean	min-max
Mean % disease control							
		% disease severity		% control			
<i>Blumeria graminis</i>	Maritime (n=5)	11.0	5.1-20.2	90.1	69.9-100	87.0	67.6-98.8
	North-East (n=1)	7.4	-	100	-	100	-

Despite the fact that efficacy data are not available for all EPPO zones, data was presented from the Maritime EPPO zone which is one of the principal oats growing regions of Europe. The data presented from the Maritime EPPO zone demonstrated that A23282A provided good efficacy levels of *Blumeria graminis* in wheat and barley. As the data previously presented on wheat and barley have demonstrated that A23282A performs similarly across EPPO zones, it is reasonable to assume that efficacy in the Mediterranean and South-East EPPO zones would be similar to that observed in the Maritime EPPO zone.

In addition, efficacy data from wheat (Section 3.2.3.1.4) and barley (Section 3.2.3.2.5) trials showed the excellent efficacy of the product against *Blumeria graminis*.

Overall conclusion

The data presented within this section support the proposed label claim for application of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) applied between BBCH 30-59 for the control of *Blumeria graminis* (ERYSGR) on winter and spring oats, under a wide range of environmental conditions.

Oats yield

The data presented from 6 oats efficacy trials where *Blumeria graminis* was present, collected across the Maritime and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) consistently provided an increase in oats yield when compared to the untreated control. The observed yields were similar to those of the standard FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin). A summary of the data across EPPO climatic zones are presented in Table 3.2-105.

Table 3.2-105: Mean yield of oats treated with A23282A in presence of ERYSGR, summarised across EPPO zones

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield						
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=5)	63.2	34.2-86.9	102.6	98.5-108.4	102.4	92.9-120.2
North East (n=1)	59.1	-	108.1	-	104.1	-

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on yield in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in oats yield, indicating that untreated disease can lead to significant yield reductions.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Blumeria graminis* on winter and spring oats under a wide range of environmental conditions.

Oats quality

The data presented from 6 oats trials in presence of *Blumeria graminis* collected across the Maritime and the North-East EPPO climatic zones, demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on the hectolitre weight, the thousand grain weight and the percentage protein content when compared with the untreated control. On the contrary; in average a slight increase on all quality parameters could be observed when A23282A was applied to oats at the 2.0 LPR/ha rate. The results were similar to those of the standard FANDANGO at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin), except for the thousand grain weight where FANDANGO achieved a greater increase than A23282A, compared to the untreated.

A summary of the data across EPPO zones are presented in Table 3.2-106, Table 3.2-107 and **Table 3.2-108.**

Table 3.2-106: Hectolitre weight of oats treated with A23282A in presence of ERYSGR, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean HLW						
	HLW (kg/hl)		HLW (% of control)			
Maritime (n=5)	44.9	25.5-55.7	101.3	98.0-105.6	100.0	92.9-107.7
North East (n=1)	48.5		100.8		100.2	

Table 3.2-107: Thousand grain weight of oats treated with A23282A in presence of ERYSGR, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean TGW						
	TGW (g)		TGW (% of control)			
Maritime (n=3)	29.0	24.6-33.1	102.0	99.8-104.2	109.7	104.4-115.6
North East (n=1)	28.8		100.0		98.9	

Table 3.2-108: Protein content of oats treated with A23282A in presence of ERYSGR, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Protein content						
	Protein content (%)		Protein content (% of control)			
Maritime (n=5)	13.3	9.3-24.6	102.3	98.8-108.0	105.7	99.9-115.6
North East (n=1)	12.8		100.0		99.2	

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rates of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on oats quality in the presence of disease. In the presence of disease, the data confirmed that controlling disease led to increases in oats grain hectolitre weight, thousand grain weight and protein content.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Blumeria graminis* on oats.

Summary and conclusion

According to the presented results, the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) of A23282A was effective in controlling foliar diseases in wheat, barley, rye, triticale and oats and provided efficacy which was at least comparable to the efficacy of the commercial standards FANDANGO 200 EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and FLEXITY 300 SC at 0.5 LPR/ha (150 gai/ha metrafenone).

Moreover, A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had a positive effect on the yield and quality of wheat, barley rye, triticale and oats in the presence of disease and should be considered as effective against the major foliar diseases, for which activity of A23282A is claimed.

As a result, the proposed rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) of A23282A should be considered to be effective against foliar diseases of winter and spring wheat, durum wheat, winter and spring barley, winter and spring rye, winter and spring triticale, winter and spring oats under a wide range of environmental conditions.

Comments of zRMS	<p>Efficacy</p> <p>The efficacy of A23282A (Kayak Era) was tested in Maritime, North-East, and South-East zones, in different conditions. In submitted trials, A23282A was used in 1 application, at the rate of 2.0 L/ha, at the growth stages between BBCH 30-59 or 30-69, depending on the crop, with spray volume 200-300 L/ha.</p> <p>All the trials were carried out by official organizations, recognized by the authorities of relevant countries, for efficacy testing of plant protection products, following EPPO general guidelines: PP 1/135(4), PP 1/152(4), PP 1/181(4), PP 1/225(4) and specific EPPO guidelines: PP 1/026(4) Foliar and ear diseases in cereals and PP 1/028(3) Eyespot of cereals. No major deviation from the EPPO guidelines was observed.</p> <p>In all the trials, the level of infestation by diseases on untreated plots was above 5%, so the presented data may be recognized as valid to evaluate the efficacy of A23282A in cereal crops. The following mean infection of untreated plots by diseases was noted: in wheat: <i>Zymoseptoria tritici</i> – 6.1-25.2%, <i>Puccinia recondita</i> – 8-25.6%, <i>Puccinia striiformis</i> – 5.6-26.3%, <i>Blumeria graminis</i> – 6.8-22.7%, Eyespot – 22.2-40.7%; in barley: <i>Pyrenophora teres</i> – 8.6-41.7%, <i>Rhynchosporium secalis</i> – 8.3-18.5%, <i>Ramularia collo-cygni</i> – 14.2-26.6%, <i>Puccinia hordei</i> – 7.7-19.9%, <i>Blumeria graminis</i> – 6.2-15.5%, Eyespot – 27-34.4%; in rye: <i>Rhynchosporium secalis</i> - 14.3-22.5%; in triticale: <i>Zymoseptoria tritici</i> – 12.1-26.3%, in oat: <i>Blumeria graminis</i> – 7.4-11%.</p> <p>Eyespot is caused by fungus <i>Tapesia yallundae</i> (syn: <i>Pseudocercospora herpotrichoides</i>; W-type [anamorph]; <i>Oculimacula yallundae</i>) and <i>Tapesia acuformis</i> (syn: <i>Pseudocercospora herpotrichoides</i> R-type; <i>Oculimacula acuformis</i>).</p> <p>In some trials, A23282A was used both at early and at late applications, so the overall number of trials is not consistent with the trials in the zones.</p> <p>Diseases control in wheat</p> <p>The efficacy of A23282A was studied in 97 trials in wheat – 31 in N-E zone; 39 in Maritime zone and 27 in S-E zone. The studies were conducted on different varieties, together on 73 wheat varieties (23 in N-E zone; 27 in Maritime zone, and 23 in S-E zone).</p>
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	<p><i>Zymoseptoria tritici</i> (<i>Septoria tritici</i>) – SEPTTR – 67 trials in total on winter wheat, of which at early application A23282A was used in 21 trials (6 in Maritime, 6 in N-E, and 9 in S-E zones) and at late application in 46 trials (15 in Maritime, 14 in N-E and 17 in S-E zones) and 4 trials in spring wheat at late application: 2 trials in Maritime zone (DK), 2 in N-E zone (LT), and also on durum wheat: 1 trial in Maritime zone (FR).</p> <p>The results showed a medium control of <i>Zymoseptoria tritici</i> on wheat by A23282A at early applications (mean control was 55.6-77.8% in Maritime zone, 77% in N-E zone, 66.3% in S-E zone) and medium to good control after late application (mean control was 76.9% in Maritime zone, 87.4% in N-E zone, 87.4% in S-E zone). In all cases, the efficacy was higher than that of the reference products. The presented data fully support the registration of A23282A in the Maritime, North-East, and South-East zones, for <i>Zymoseptoria tritici</i> control. Given the varying effectiveness against <i>Zymoseptoria tritici</i>, a note should be included in the label that A23282A can moderately control <i>Zymoseptoria tritici</i>.</p> <p>The number of trials for registration of A23282A for <i>Zymoseptoria tritici</i> control on winter wheat in Poland is sufficient (PL - 11 trials, LV - 2 trials, LT - 1 trial). For the registration on spring wheat, there is no Polish data, but the evaluator suggests acceptance of 2 trials conducted in LT, and the missing data extrapolate from winter wheat.</p> <p><i>Puccinia recondita</i> – PUCCRE – 11 trials in total in winter wheat (3 in Maritime zone, 2 in N-E zone and 6 trials in S-E zone), and 1 trial in spring wheat (S-E zone – HU).</p> <p>The results showed very good control of <i>Puccinia recondita</i> on wheat by A23282A (mean control 88.2% in Maritime zone, 90% in N-E zone, 89.1% in S-E zone), and in all zones the mean efficacy was slightly lower than of the reference product. The presented data support the registration of A23282A for <i>Puccinia recondita</i> control in S-E zone, while for Maritime and North-East zones the registration can be based on data from their zone and from other zones (for N-E zone - from S-E and Maritime zones but for Maritime zone – from S-E and N-E zones), but decision should be taken by CMS authorities. CMS can also register A23282A for <i>Puccinia recondita</i> control as minor use.</p> <p>For the registration of A23282A for <i>Puccinia recondita</i> control on winter wheat in Poland, 2 trials conducted in Poland and 2 from DE may be taken into account, and the missing data should be provided by the applicant as post-registration data within 1 year. The evaluator states, that <i>Puccinia recondita</i> should be included in the label, in recommendations for winter wheat, despite the insufficient number of trials, due to its high effectiveness against this pathogen. For <i>Puccinia recondita</i>, possible is extrapolation from winter wheat to spring wheat, but the applicant submitted only 1 trial in spring wheat, performed in Hungary, and no tests from Poland.</p> <p><i>Puccinia striiformis</i> – PUCCST – 17 trials in total, in winter wheat, of which at early application A23282A was used in 2 trials (1 in Maritime zone, 1 in N-E zone), at late application in 15 trials (9 in Maritime zone, 4 in N-E zone and 2 in S-E zone), and in spring wheat 1 trial performed in S-E zone (RO).</p> <p>The results after early application showed good control of <i>Puccinia striiformis</i> on wheat by A23282A in 1 trial in Maritime zone (97.6%) and poor control in 1 trial in N-E zone (31.3%), while good control was obtained after late application in all zones (87.2% in Maritime zone, 82.5% in N-E zone and 95.3% in S-E zone). It is hard to explain the difference at early application. At late application, the efficacy of A23282A was similar to or slightly lower than that of the reference product. Although a poor efficacy in one trial, it should be assumed that presented data can support the registration of A23282A for <i>Puccinia striiformis</i> control in Maritime zone, while in N-E and S-E zones the registration can be based on their data and data from other zones (for N-E zone – data from Maritime and S-E</p>
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	<p>zones and for S-E zone – from Maritime and N-E zones), but decision should be taken by cMS authorities. CMS can also register A23282A for <i>Puccinia striiformis</i> control as minor use. For the registration in Poland, in winter wheat, 4 trials conducted in Poland (1 with early application and 3 with late application) and 3 trials from DE should be considered, what meets the registration requirements. For spring wheat no trials from Poland was presented, so the registrations is not accepted.</p> <p><i>Blumeria graminis</i> – ERYSGR – 21 trials in total, in winter wheat, of which at early application A23282A was used in 6 trials (2 in Maritime, 4 in N-E zone) and at late application in 15 trials (6 in Maritime, 5 in N-E and 4 in S-E zones), and in spring wheat 3 trial performed in LT, at late application.</p> <p>The results showed good control of <i>Blumeria graminis</i> on wheat by A23282A, used at early applications (mean control of 91% in Maritime zone, 84.7% in N-E zone) and after late applications (mean control of 90.7% in Maritime zone, 87.8% in N-E zone, and 85.9% in S-E zone). At early application, the mean efficacy of A23282A in N-E zone was higher and in Maritime zone lower, in comparison to reference product, and at late application in all zones was higher. The presented data fully support the registration of A23282A in the N-E and Maritime zones for <i>Blumeria graminis</i> control, while for S-E zone the registration can be based on their data and data from other zones – N-E and Maritime zones, but decision should be taken by cMS authorities. CMS can also register A23282A for <i>Blumeria graminis</i> control as minor use.</p> <p>For registration in Poland, in winter wheat, 10 trials from N-E zone (2 trials from PL, 1 from LV, 1 from LT, at early application; and 3 trials from PL, 1 from LV, and 2 from LT, at late application) and 4 trials from DE (1 with early application, 3 with late application) can be considered. For <i>Blumeria graminis</i> control in spring wheat there are no trials conducted in Poland, but the data of 3 trails conducted in LT can be taken into account and the missing data extrapolated from winter wheat. The evaluator accepts the registration of A23282A for <i>Blumeria graminis</i> control in winter and spring wheat.</p> <p>Eyespot (<i>Pseudocercospora herpotrichoides</i> – PSDCHE – 26 trials in total, in winter wheat (13 in Maritime zone, 9 in N-E zone and 4 in S-E zone); no trials on spring wheat.</p> <p>In the trials, the disease severity and disease incidence were evaluated. The results showed medium control of Eyespot on wheat by A23282A, depending on the zone (mean severity control 56.1% in Maritime zone, 64.1% in N-E zone, 78.1% in S-E zone, and disease incidence was reduced from 10,7-21.3% in class 0 to 0.2% in class 3). In all cases the disease severity was lower than in untreated, while disease incidence changed – in class 0 was higher and in class 3 lower than in untreated. The presented data support the registration of A23282A for Eyespot control in the Maritime zone and N-E zone, while registration in S-E zone (2 missing trials) can be based on their data and data from other zones – Maritime and N-E zones, but decision should be taken by cMS authorities. CMS can also register A23282A for Eyespot control as minor use. Given the varying effectiveness against eyespot (<i>Pseudocercospora herpotrichoides</i>), a note should be included in the label that A23282A can moderately control eyespot.</p> <p>For registration in Poland, 9 trials from N-E zone (5 trials conducted in Poland) and 4 trials from DE can be considered. For spring wheat no trials from Poland was presented, so the registration is not accepted.</p> <p>Eyespot is caused by the fungus <i>Tapesia yallundae</i> (syn: <i>Pseudocercospora herpotrichoides</i>; W-type [anamorph]; <i>Oculimacula yallundae</i>) and <i>Tapesia acuformis</i> (syn: <i>Pseudocercospora herpotrichoides</i>; R-type [anamorph]; <i>Oculimacula acuformis</i>).</p> <p><u>Diseases control in barley</u></p>
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<p>A total of 103 trials were carried out in barley – 38 in N-E zone; 36 in Maritime; 29 in S-E zone. The studies were conducted on different varieties – overall on 59 varieties in winter barley and 14 in spring barley (21 in winter barley and 6 in spring barley in Maritime zone; 20 in winter barley and 6 in spring barley in N-E zone; 18 in winter barley and 2 in spring barley in S-E zone).</p> <p><i>Pyrenophora teres</i> – PYRNTE – 44 trials in total, in winter barley, of which at early application A23282A was used in 9 trials (1 in Maritime, 3 in N-E, and 5 in S-E zones), and at late application in 35 trials (4 in Maritime, 11 in N-E and 20 in S-E zones), while in spring barley in 12 trials, of which 5 was performed in Maritime zone (1 in DE, 3 in DK and 1 in GB, at late application), 3 in S-E zone (1 in RO, at early application, 1 in RO and 1 in SI, at late application) and 4 in N-E zone (1 in PL, 3 in LT, at late application).</p> <p>The results showed medium to good control of <i>Pyrenophora teres</i> on barley by A23282A, at early applications (mean control 82.7% in Maritime zone, 75.5% in N-E zone, 82.4% in S-E zone) and good control after late application (90.6% in Maritime zone, 88% in N-E zone, 85.7% in S-E zone). In all cases the mean efficacy was higher than of the reference product. The presented data fully support the registration of A23282A in the Maritime, North-East and South-East zones, for <i>Pyrenophora teres</i> control.</p> <p>For registration in Poland, in winter barley, 11 trials from N-E zone (10 conducted in Poland) and 3 trials from DE (Maritime zone) can be considered. For registration in spring barley 4 trials from N-E zone (1 – PL and 3 – LT) and 1 trial from DE can be considered and missing data can be extrapolated from winter barley.</p> <p><i>Rhynchosporium secalis</i> – RHYNSE – 21 trials in total, in winter barley, of which at early application A23282A was used in 5 trials (3 in Maritime zone, 2 in N-E zone) and at late application in 16 trials (7 in Maritime, 6 in N-E and 3 in S-E zone), while in spring barley in 1 trial performed in Maritime zone (IE).</p> <p>The results showed good control of <i>Rhynchosporium secalis</i> on barley by A23282A, especially at late application (mean of 92.1% in Maritime zone, 87.7% in N-E zone, 86.9% in S-E zone) and medium to poor control at early application (means of 58% in Maritime zone, 69% in N-E zone, 33.1% in S-E zone). At early term of application, the mean efficacy of A23282A was slightly lower, while at the late application in all zones was higher, in comparison to reference product. Despite the lower efficiency, the presented data support the registration of A23282A for <i>Rhynchosporium secalis</i> control in barley, in the Maritime and N-E zones, while the registration in S-E zone can be based on their data and data from Maritime and N-E zones, but decision should be taken by cMS authorities. CMS can also register A23282A for <i>Rhynchosporium secalis</i> control as minor use.</p> <p>For registration A23282A in Poland, for <i>Rhynchosporium secalis</i> control in winter barley, 8 trials from Poland (2 at early application and 6 at late application) and 3 trials conducted in DE, Maritime zone (1 at early application, 2 at late application), can be considered. No trials on spring barley, meeting Polish requirements, were presented, so the registration of A23282A for <i>Rhynchosporium secalis</i> control can not be accepted.</p> <p><i>Ramularia collo-cygni</i> – RAMUCC – 16 trials in total, in winter barley (7 in Maritime zone, 3 trials in N-E zone and 6 trials in S-E zone), and 3 trials in spring barley – 1 in Maritime zone (IE); 1 in N-E zone (PL) and 1 in S-E zone (SI).</p> <p>The results showed good control of <i>Ramularia collo-cygni</i> on barley by A23282A in N-E zone (93.8%) and S-E zone (83.9%) and medium control in Maritime zone (75.6%). In all cases the mean efficacy was higher than of the reference product. The presented data fully support the registration of A23282A for <i>Ramularia collo-cygni</i> control in the Maritime and S-E zones, while the registration in N-E zone can be based on their own data and data</p>
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	<p>from Maritime and S-E zones, but decision should be taken by cMS authorities. CMS can also register A23282A for <i>Ramularia collo-cygni</i> control as minor use.</p> <p>For registration of A23282A in winter barley, in Poland, 3 trials from N-E zone (all PL) and 2 trials from DE (Maritime zone) can be considered, and the missing trial should be provided by applicant as post-registration data within 1 year. For registration in spring barley only 1 trial from N-E zone (PL) can be considered, and the missing data can be extrapolated from winter barley.</p> <p><i>Puccinia hordei</i> – PUCCHD – 40 trials in total in winter barley, of which at early application A23282A was used in 7 trials (4 in Maritime zone, 3 in N-E zone) and at late application in 33 trials (9 in Maritime, 15 in N-E and 9 in S-E zone), and in 2 trials in spring barley performed in Maritime zone (FR, DK).</p> <p>The results showed very good control of <i>Puccinia hordei</i> on barley by A23282A, both after early application (mean control 90.7% in Maritime zone, 96.4% in N-E zone), and after late application (92.3% in Maritime zone, 94.8% in N-E zone, 93.6% in S-E zone). In all cases the efficacy was higher than of the reference product. The presented data fully support the registration of A23282A for <i>Puccinia hordei</i> control in the Maritime zone, N-E zone and S-E zone.</p> <p>For registration of A23282A in Poland, for <i>Puccinia hordei</i> control in winter barley, 18 trials from N-E zone (16 from PL) and 3 trials from DE, Maritime zone (at late application) can be considered. For registration in spring barley applicant did not present the trials from Poland, only 2 trials from Maritime zone (FR, DK). It not meet a Polish requirements, although the data extrapolation from winter barley is possible.</p> <p><i>Blumeria graminis</i> – ERYSGR – 17 trials in total in winter barley, of which at early application A23282A was used in 8 trials (2 in Maritime, 5 in N-E and 1 in S-E zones) and at late application in 9 trials (2 in Maritime, 3 in N-E, 4 in S-E zones), and also 2 trial were conducted in spring barley – 1 in Maritime zone (GB) and 1 from N-E zone (PL).</p> <p>The results showed very good control of <i>Blumeria graminis</i> on barley by A23282A (mean control 94.4% in Maritime zone, 89.8% in N-E zone, 100% in S-E zone, after early application and 91.5% in Maritime zone, 98% in N-E zone, 94.5% in S-E zone, after late application). The efficacy of tested product, both at early and late applications, was higher than of the reference product, except early application in Nort-East zone, where slight reduce was observed. The presented data fully support the registration of A23282A for <i>Blumeria graminis</i> control in the N-E zone and the registration in Maritime and S-E zone can be based on their data and data from N-E zone, but decision should be taken by cMS authorities. CMS can also register A23282A for <i>Blumeria graminis</i> control as minor use.</p> <p>For registration in Poland, in winter barley, 8 trials from N-E zone (7 from PL) at early and late application can be considered. For registration in spring barley 1 trial from PL (N-E zone) can be considered and the missing data can be extrapolated from winter barley.</p> <p>Eyespot (<i>Pseudocercospora herpotrichoides</i>) – PSDCHE – 15 trials in total (6 trials in Maritime zone and 9 in N-E zone), all were performed in winter barley.</p> <p>In the trials the disease severity and disease incidence were evaluated. The results showed medium to good control of Eyespot on wheat by A23282A (mean severity control 66.1% in Maritime zone, 85.7% in N-E zone, disease incidence was reduced from 11,9-16.8% in class 0 to 0.1% in clas 3). In all cases the disease severity was lower than in untreated, while disease incidence changed – in class 0 was higher and in class 3 lower than in untreated. The presented data fully support the registration of A23282A for Eyespot control in the Maritime zone and N-E zone, while for registration in S-E zone (no trials) can be based on data from Maritime and N-E zones, but decision should be taken by cMS authorities. CMS also have the possibility to register A23282A for Eyespot control as minor use. Given the</p>
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	<p>varying effectiveness against Eyespot, the note should be included on the product label, that sometimes A23282A can moderately control Eyespot.</p> <p>For registration in Poland, in winter barley, 9 trials from N-E zone (7 from PL) and 1 trial from DE can be considered. No trials from spring barley presented in the report.</p> <p><u>Diseases control in rye</u></p> <p>A total of 20 trials was carried out in rye – 9 in N-E zone and 11 in Maritime zone. In the studies different varieties were used – 8 varieties in N-E and 9 in Maritime zone.</p> <p><i>Rhynchosporium secalis</i> – RHYNSE – 17 trials in total, in winter rye – 9 trials in Maritime zone and 8 trials in N-E zone, and 3 trials in spring rye – 2 in Maritime zone (DK), and 1 trial in N-E zone (LT).</p> <p>The results showed good control of <i>Rhynchosporium secalis</i> on rye by A23282A, (mean control 85.8% in Maritime zone, 88.5% in N-E zone). In all cases the efficacy was higher than of the reference product. The presented data fully support the registration of A23282A for <i>Rhynchosporium secalis</i> control in the Maritime and N-E zones. The applicant did not submit any data from the South-East zone, so the possible registration in S-E zone can be based on data from Maritime and N-E zones, but decision should be taken by cMS, if they intend to do it. CMS can also register A23282A for <i>Rhynchosporium secalis</i> control as minor use.</p> <p>For registration in Poland, in winter rye, 8 trials from PL and 4 trials from DE can be considered. For registration in spring rye no data from Poland, but possible registration can be base on 1 trial from LT (N-E zone) and missing data extrapolated from winter barley.</p> <p><u>Diseases control in triticale</u></p> <p><i>Zymoseptoria tritici</i> – SEPTTR – 10 trials in winter triticale – 6 from N-E zone, 4 from Maritime zone).</p> <p>The results showed good control of <i>Zymoseptoria tritici</i> on winter triticale by A23282A (mean control 87.3% in Maritime zone, 94.5% in N-E zone), wherein better control was obtained in N-E zone. In all cases the efficacy of A23282A was much higher than of the reference products. The presented data fully support the registration of A23282A in the North-East zone, while the registration in Maritime zone can be based on their own data and the data from N-E zone but decision should be taken by cMS authorities. The applicant did not submit any data from S-E zone, so the possible registration depends on the cMS, if they intend to do it. CMS also can register A23282A for <i>Zymoseptoria tritici</i> control as minor use.</p> <p>For registration A23282A in Poland, for <i>Zymoseptoria tritici</i> control in winter triticale, 6 trials from PL and 2 trials from DE can be considered. For registration in spring triticale no data from Poland, so it hard to accept such registration. Possible registration can be base on data extrapolated from winter wheat.</p> <p><u>Diseases control in oat</u></p> <p><i>Blumeria graminis</i> – ERYSGR – 5 trials in total, in spring oat (4 from Maritime zone, 1 in N-E zone), and 1 trials in winter oat (GB).</p> <p>The results showed a good control of <i>Blumeria graminis</i> on oat by A23282A (mean control 90.1% in Maritime zone, 100% in N-E zone). The efficacy of tested product was higher or at the same level than of the reference product. The presented data did not fully support the registration of A23282A for <i>Blumeria graminis</i> control in Maritime zone and N-E zone, so the missing data should be taken from N-E zone for registration in Maritime zone and from Maritime zone for registration in N-E zone. Decision should be taken by cMS authorities. The applicant did not submit any data from the S-E zone, so the possible</p>
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	<p>registration in this zone depends on the cMS, if they intend to do it. CMS also have the possibility to register A23282A for <i>Blumeria graminis</i> control as minor use.</p> <p>The registration of A23282A in Poland, for <i>Blumeria graminis</i> on spring oat is not possible, due to only 1 trial carried out in this crop and no possibility of extrapolation from other crops.</p> <p>The presented data indicate the efficacy of A23282A in the majority of trials is on the same level or higher than that of the reference products, so it is a positive aspect in terms of effectiveness. The number of trials for major pathogens on major crops varies from 6 to 15, however, taking into account the high efficacy of A23282A, more than the required number of trials for the majority of crops and diseases and the fact that in the vast majority of the trials, the efficacy of tested fungicide was higher than that of the reference product (only in some cases was lower) it can be assumed that 6 trials are sufficient for the registration.</p> <p>The number of trials with disease control, in the tested crops, regarding the effectiveness and selectivity of A23282A (Kayak Era), is not always sufficient for registration in individual countries, therefore is a need to use data from other countries in the same zone or from the countries from other zones. The decision to accept such data belongs to cMS. Given the good efficacy of A23282A for disease control, its high selectivity to tested cereal crops, the time of possible infection by pathogens, low to high risk of developing resistance to pathogens, ZRMS suggests registering A23282A in cereals, taking into account its specific regulations of the countries.</p> <p>ZRMS states that presented data fully support the registration of A23282A (Kayak Era) in Central Registration Zone. ZRMS suggest the authorization of A23282A for diseases control in cereal crops with sufficient number of trials, according to GAP table, and if the trials number is insufficient the cMS should decides on accepting the data from another zones or register this product as minor use, in accordance with art. 51 of Regulation (EC) No. 1107/2009.</p> <p>The proposed label claim: the application of A23282A (Kayak Era) at the rate of 2.0 L/ha (fluxapyroxad – 450 g/ha + azoxystrobin – 150 g/ha) or 1.5-2 L/ha, for diseases control in wheat, barley, triticale, rye and oat. This fungicide should be recommended as foliar application in one treatment per season, at the growth stages at BBCH 30-69 in wheat, rye and triticale or 30-59 in barley and oats, with water volume 100–400 L/ha. The water volume in the trials was 200-300 L/ha but in GAP applicant states 100-400 L/ha. Due to the varied water volume used for the spraying, cMS has to decide to recommend the rate given in GAP or may adopt the dose used in the experiments. However, it seems that the dose should not be lowered too much due to the effectiveness of fungicide. For Poland zRMS suggests 100-400 L/ha.</p>
<p>Comments of zRMS:</p>	<p><u>The yield of cereal crops from efficacy trials with diseases</u></p> <p>The cereals in the presented trials were harvested and quantity and quality of yield were determined. A23282A was applied in one treatment, at the rate of 2 L/ha.</p> <p>Wheat. The yield of winter wheat was determined in 83 trials in the presence of disease, with early application of A23282A (30 trials in Maritime zone, 27 in N-E zone, 26 in S-E zone), and in 58 trials with late application (18 trials in Maritime zone, 19 in N-E zone and 21 in S-E zone), while in spring wheat in 5 trials with early application (2 in Maritime zone, 1 in N-E zone and 2 in S-E zone) and 8 trials with late application (3 in Maritime zone, 3 in N-E zone and 2 in S-E zone).</p> <p>The data showed that the use of A23282A at the rate of 2.0 L/ha (450 g/ha cyprodinil + 150 g/ha prothioconazole) provided an increase in the yield of winter and spring wheat,</p>

	<p>both at early and late application, when compared to the untreated control (increase by 7.4-17.8% of winter wheat and up to 11.5% in spring wheat yield), except the trials with late application in spring wheat, where the mean yield was slightly lower than in untreated control. The wheat yield was comparable to the reference products. The positive effect of A23282A on wheat yield supports the registration of A23282A in this crop, at the proposed label claim maximum of 2 L/ha.</p> <p>Barley. The yield of winter barley was determined in 66 trials at the early application of A23282A (28 trials in Maritime zone, 23 in N-E zone, 15 in S-E zone) and in 69 trials at late application (21 trials in Maritime zone, 22 in N-E zone and 26 in S-E zone), in the presence of disease, while in spring barley in 17 trials at early application (6 in Maritime zone, 9 in N-E zone and 2 in S-E zone) and 14 trials at late application (7 in Maritime zone, 5 in N-E zone and 2 in S-E zone).</p> <p>The data showed that the use of A23282A provided an increase in the yield of winter and spring barley, both at early and late application when compared to the untreated control (increasing the yield by 8-13.4% of winter barley and by 4.2-17% of spring barley). At late application, the yield of barley was higher than from both reference products, and at early application was comparable to the reference product. The positive effect of A23282A on the yield of barley supports the registration of A23282A in this crop, at the proposed label claim of 2 L/ha.</p> <p>Rye. The yield of rye was determined in 20 trials (11 in Maritime zone and 9 in N-E zone), where <i>Rhynchosporium secalis</i> was present. The use of A23282A resulted in an increase in the yield of 13% in Maritime zone and 10.6% in N-E zone, when compared to untreated control, whereas it was similar to or slightly lower than that of the standard</p> <p>Triticale. The yield of triticale was determined in 10 trials (5 in Maritime zone and 5 in N-E zone). The data showed that the use of A23282A provided an increase in the yield of rye by 7.9-12.4%, in comparison to untreated control, while in Maritime zone it was higher than after the use of reference product and in N-E zone was slightly lower. The positive effect of A23282A on triticale yield supports the registration of A23282A in this crop, at the proposed label claim of 2 L/ha.</p> <p>Oats. The yield of oats was determined in 6 trials (5 in Maritime zone and 1 in N-E zone). The data showed that the use of A23282A provided an increase in the yield of oat by 2.6-8.1%, in comparison to untreated control and reference product. The positive effect of A23282A on the yield of oats supports the registration of A23282A in this crop, at the proposed label claim of 2 L/ha.</p> <p>ZRMS states that the positive impact of A23282A (Kayak Era) on the yield of cereal crops across all EPPO zones fully confirms its intended registration for disease control in cereal crops in the Central regulation zone. A23282A positively influenced the yield of cereal crops under a wide range of environmental conditions.</p>
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Comments of zRMS:	<p><u>Effects on the quality of plants or plant products</u></p> <p>The quality data of cereals were collected from the trials sprayed with A23282A (Kayak Era) at the target rate of 2.0 L/ha, at the growth stages of cereals between BBCH 31 and 72, and the yield parameters were studied after harvest. The yield quality was determined in the trials with the presence of diseases, across all EPPO zones. The trials were conducted under general and specific EPPO guidelines</p>
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	<p>In wheat the parameters of yield such as hectolitre weight (HLW), thousand grain weight (TGW), and protein content (%), both after early and late application of A23282A were tested. In winter wheat HLW and TGW in all zones were higher in comparison to untreated control, except HLW in Maritime zone (reduction of 0.6%), and were at the same level as from the reference product. The protein content after the use of A23282A was close to the results from untreated control and reference products. The differences were minor, except for the trials in S-E zone, where the mean protein content was increased by 13.4%. In spring wheat, no significant differences in the tested parameters were found between A23282A, the untreated control, and the reference products, both at the early and late term of application, only in the S-E zone a significant increase in protein content, compared to the untreated control was noted.</p> <p>In winter barley the mean values of HLW and TGW in all zones were higher in comparison to untreated control (HLW increased by 0.1-3.3%; TGW by 1.7-8%), except HLW in Maritime zone (reduction by 0.9%) and were at the same level or higher than from reference product. The protein content after the use of A23282A was close to the results from untreated control and reference products. The differences were minor. In spring barley the mean HLW and TGW values in all zones were higher in comparison to untreated control (HLW increased 0.6-3.6%; TGW 2.7-10.2%) and were close to the results from reference products, both at early and late term of application, while the mean protein content was varied, mainly was similar to the reference product, but in S-E zone was lower even up to 14.3%. The reduction of protein content was observed in the zone, where the highest protein content was noted, and in the other zones the results were varied.</p> <p>In rye, the use of A23282A resulted in a mean increase in hectolitre weight of 0.5%, in thousand grain weight of 2.2%, and in protein content of 1.1%, when compared to the untreated. Hectolitre weight was similar, while thousand grain weight and protein content were slightly inferior to that of the standard products. The data of the trials clearly demonstrated the positive influence of the tested product on the rye grain parameters.</p> <p>In triticale, the mean values of HLW and TGW after the use of A23282A, in all zones were higher, in comparison to untreated control and were close to the results from reference products, while protein content was similar both to the untreated control and reference product.</p> <p>In oat, the mean values of HLW and TGW after the use of A23282A, in all zones were close to the results from untreated control and reference products, wherein the tendency of increasing all assessed parameters was observed.</p> <p>The presented data show that the use of A23282A at the rate of 2.0 L/ha in the vast majority of trials provided an increase the grain yield parameters or maintaining these parameters at a similar level, regardless of the application term. This conclusion applies to all cereal species for which the product is to be registered. The results demonstrate no negative impact of A23282A, on the thousand grains weight (TGW) and the hectolitre weight (HLW) in comparison to untreated control, also. The protein content was differ in some trials, and it should be underline that protein content depends not only from the effective diseases control, but also from various agrotechnical factors.</p> <p>ZRMS conclusion. The positive impact of A23282A (Kayak Era) on the yield quality parameters of cereal crops across all EPPO zones fully confirms its intended registration for disease control in cereal crops in the Central regulation zone.</p>
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3.3 Information on the occurrence or possible occurrence of the development of resistance

(KCP 6.3)

EPPO guideline number	Title
EPPO guideline PP 1/213 (4)	Resistance Risk Analysis

The capacity of target pathogens to become resistant to fungicide treatments varies greatly with respect to the different fungicide classes when single site 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 prothioconazole and cyprodinil, baseline sensitivity and cross resistance patterns for cereals targets. At the end of this part, general measures and specifics guidelines are proposed to mitigate resistance development against prothioconazole and cyprodinil.

Mode of action and mechanism of resistance of SDHI fungicides

Prothioconazole (DMI fungicide class)

Prothioconazole (PTZ) is a demethylation inhibitor (DMI) fungicide and is classified in group G1 of FRAC. The DMI's are a group of fungicides highly active against a broad range of fungi. There are a large number of DMI's commercially available for use in a broad range of crops, e.g. mefentrifluconazole, difenoconazole and tebuconazole. The mode of action is inhibition of ergosterol biosynthesis, which has been classified as a medium resistance risk.

Resistance to DMI fungicides is known in various fungal species. Three mechanisms of resistance contribute to DMI sensitivity. A range of mutations in target gene *cyp51* have been associated with the sensitivity shift. This mechanism is associated to the higher resistance factors. Additional mechanisms associated with lower resistance factors are *cyp51* over expression and cell detoxification through drug efflux mediated by Mfs1, a membrane transporter belonging to the Major Facilitator Superfamily.

Several point mutations in the *cyp51* have been identified to influence the sensitivity towards DMI fungicides in *Zymoseptoria tritici* (Figure 3.3.1-1). Interestingly, differences in sensitivity patterns towards particular DMIs are observed. Wild-type isolates (group I) are highly sensitive to all azoles. Isolates of group II (Y137F) have a slightly reduced sensitivity and isolates of group III (heterogeneous genotype) are clearly reduced in their sensitivity to all DMIs. Isolates of group IV (V136A) have a reduced sensitivity to all DMIs except Tebuconazole (TBZ), Difenoconazole (DFZ) and Mefentrifluconazole (MFTZ) to which they are particularly sensitive. Isolates of group V (I381V) and group VI (A379G and I381V) are less sensitive to all DMIs except Prochloraz (PLZ), which is particularly active against these two genotypes.

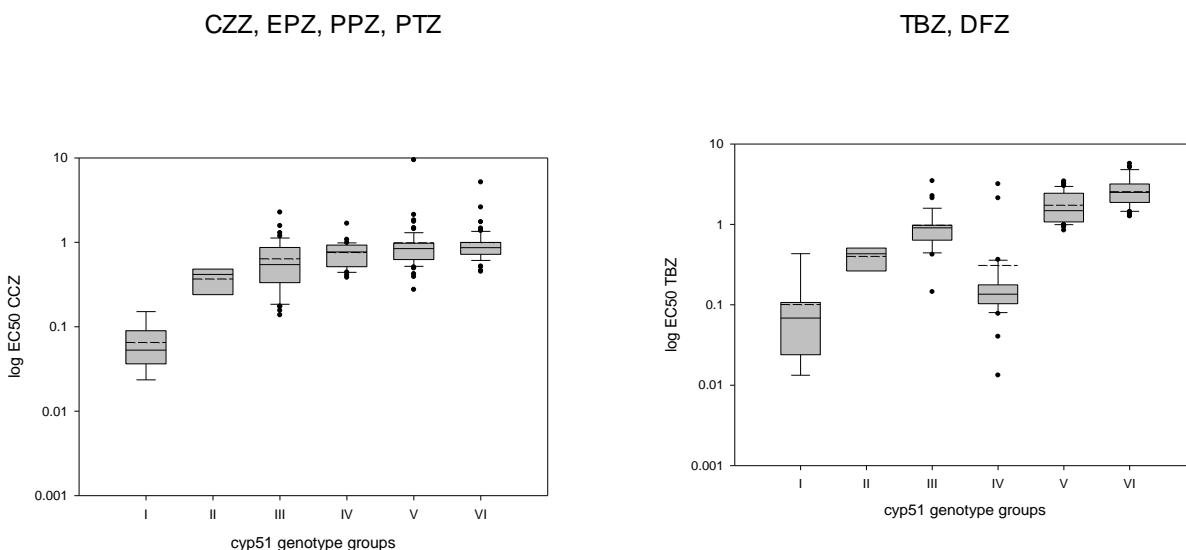


Figure 3.3-1: : Sensitivity pattern of different *Z. tritici* cyp51 genotypes towards DMI fungicides. PTZ: Prothioconazole, CCZ, Cyproconazole, EPZ: Epoxiconazole, PPZ: Propiconazole shows similar patterns of cross resistance. Whereas, DFZ: Difenconazole, TBZ: tebuconazole and MFTZ mefentrifluconazole (not showed) cluster together in terms of cross resistance. Genotype definitions see text.

Cyp51 gene showed a significantly higher number of intragenic recombination events in populations under fungicide selection, which contribute to the reshuffling of single amino acid changes in complex genotypes.

From a broad population genetic study conducted by XXXX in 2016 a total of 34 distinct cyp51 amino acid haplotypes (cyp51 aa-types) were monitored considering a total of 384 *Z. tritici* strains collected from different European countries. The 34 cyp51-aa-types resulted from the combination of 19 polymorphic amino acid sites (Figure 3.3-2) and 40 unique nucleotide cyp51 haplotypes (Figure 3.3-3).

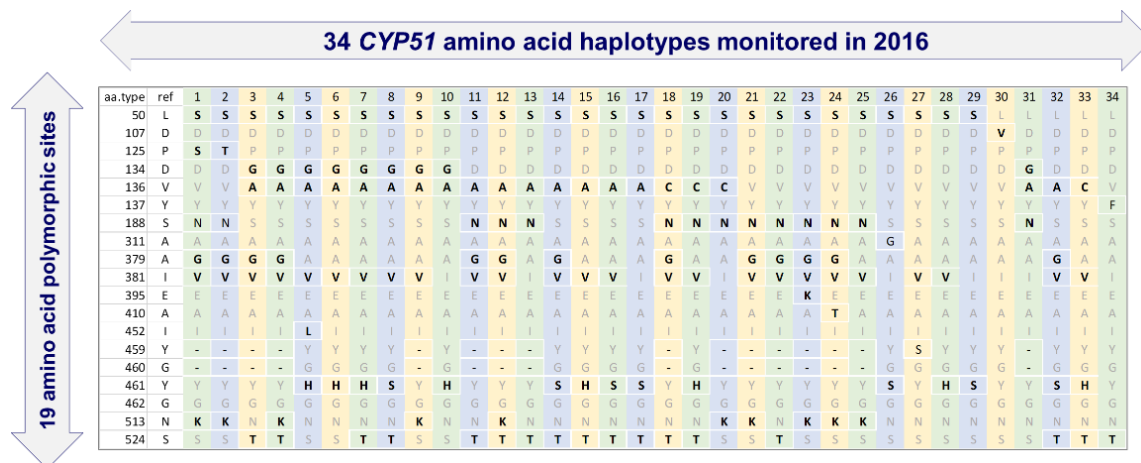


Figure 3.3-2: : A total of 34 cyp51 amino acid haplotypes were observed by sequencing 384 *Z. tritici* strains collected in 2016 from different European countries.

The 120 bp insertion in cyp51 promotor associated to high levels of overexpression was observed in only 3 aa-types. Other insertions in cyp51 promotor have been described in literature. Incomplete cross resistance exists between members of the DMI class. Strains harboring mutation V136A results in a phenotype with higher sensitivity to mefentrifluconazole, difenoconazole and tebuconazole compared with the strains without this mutation. Each of the 34 cyp51 aa-types shows a specific DMI cross resistance profile which can be summarized here as DMI sensitive, predominantly shifted to PTZ (and related DMIs), predominantly shifted to MFTZ (and related DMIs) or generally shifted to both PTZ and MFTZ (Figure 2). Pattern of DMI incomplete cross resistance and different geographic distribution of cyp51 genotypes were monitored. The DMI target gene cyp51 evolved following selection imposed by a different use of DMIs applied in distinct regions and through recurring cycles of recombination. The more recent cyp51 genotypes tends to show patterns of complete cross resistance to both tested DMIs.

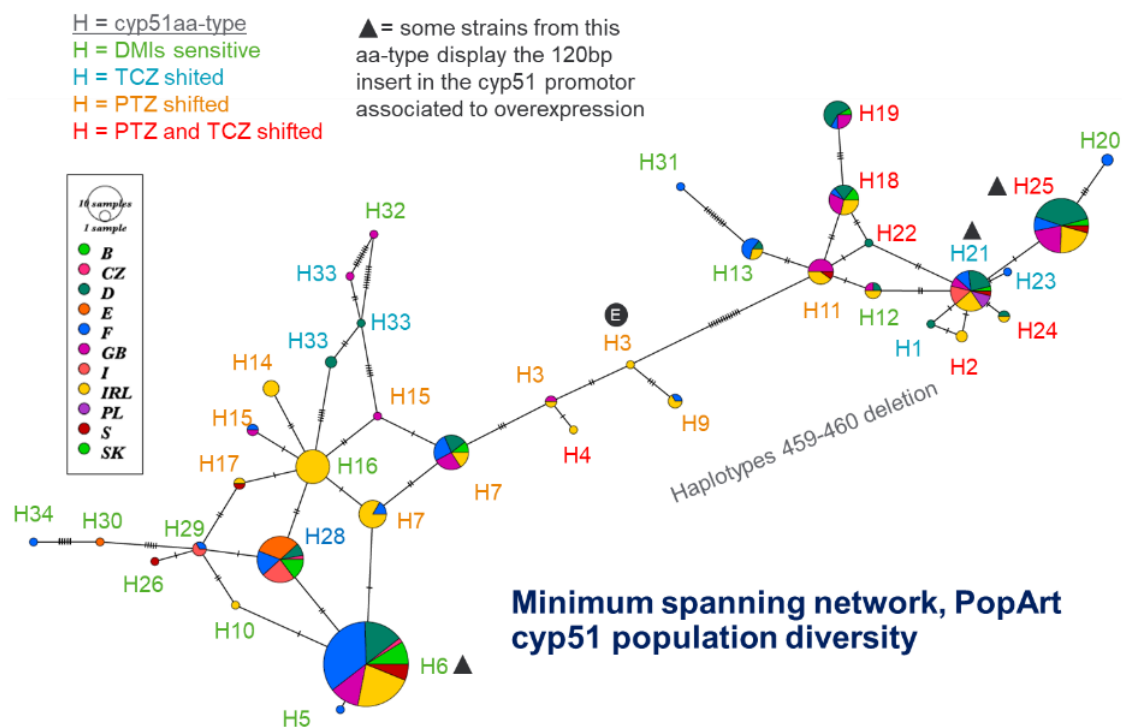


Figure 3.3-3: : Genetic diversity of *cyp51* gene considering 384 *Z. tritici* strains collected in 2016 from different European countries. A total of 40 nucleotide haplotypes were observed (circle, with size proportional to the monitored frequency and colors referring to the country of origin). Each line represent a nucleotide variation. Dots represent not monitored intermediate genotypes. The amino acid haplotype is characterized by the number H1 to H34 and the text is colored according to the cross resistance profile showing (details in the text above).

Some fitness penalty associated to resistance have been proposed in organisms like *Rhynchosporium commune* and some *cyp51* genotypes of *Z. tritici*. As a result, sensitivity levels have been seen to move over a period of time and then to stabilize. Unlike classic point mutations and the large changes in sensitivity observed in some groups of chemistry e.g. resistance to QoIs, resistance to DMIs has been shown to be in the form of small shifts occurring over a long period of time.

A recent study on DMI sensitivity of *Rhynchosporium commune* showed that point mutations in *cyp51* are not responsible for differential DMI sensitivity, but that potentially the re-appearance of a second variant of *cyp51* might explain a general reduction in sensitivity.

Cyp51	shift	Mutation(s)	inheritance	comments
<i>Zymoseptoria tritici</i>	10X	Several amino acid changes, promoter insert, efflux	?	Differences between DMI's
<i>Blumeria gt</i>	yes	Y136F, K147Q	polygenic	Triadimenol
<i>Blumeria gh</i>	yes	?	Monogenic	
<i>Pyrenophora teres</i>	yes	?	Monogenic triadimenol Polygenic PPZ	Allelic differences A and B variant
<i>Pyrenophora tritici-repentis</i>	Yes?	?	?	A and B variant
<i>Rhynchosporium secalis</i>	strong	No mutations found correlating to sensitivity	?	A and B variant Functional vs non-functional
<i>Septoria nodorum</i>	yes	?	Monogenic PPZ	
<i>Puccinia recondita</i>	weak	Y134F; other mechanisms	?	Correlation between mutation and shift no conclusive

Cyprodinil (AP fungicide class)

Cyprodinil (CDL) belongs to the anilinopyrimidine fungicides. The anilinopyrimidines (APs) are a group of fungicides highly active against a broad range of pathogens. The mode of action includes inhibition of methionine biosynthesis and secretion of hydrolytic enzymes. The mode of action is most probably monogenetic, but not fully elucidated. The resistance mechanisms for APs are disruptive.

The methionine biosynthesis is end product regulated. Since amino acid biosynthesis is a network other enzymes might be involved as well. In the regulatory part of one of the genes (cystathionine-gamma-synthase) mutations have been found which correlated with resistance in most but not all cases.

AP products, applied following the FRAC-AP guidelines, continue to show good performance in the field, after many years of use, although resistant isolates can be found in recent field populations of some pathogens (e.g. *Botrytis cinerea* and *Venturia inaequalis*).

Fungicide cross resistance

DMI fungicide cross resistance

Prothioconazole (PTZ) is a demethylation inhibitor (DMI) fungicide and is classified in group G1 of FRAC. In *Z. tritici* patterns of incomplete cross resistance have been observed (Figure 3.3.2-1), resulting from the different evolved cyp51 genotypes. The incomplete cross resistance evolved following selection imposed

by a different use of DMIs applied in distinct geographic regions. The more recent *cyp51* genotypes tend to show patterns of higher cross resistance to all DMIs. Patterns of incomplete cross resistance monitored in *Z. tritici* but have not been extensively observed in other pathogens, for which higher level of cross resistance have been observed. Since the most adapted *cyp51* genotypes in *Z. tritici* show higher cross resistance level between DMI and other pathogens are subjected to complete cross resistance, all DMIs should be considered as a unique group while defining anti-resistance strategies. DMI fungicides do not show cross resistance to SDHI, AP, QoI, QoI-A, QiI and multisites.

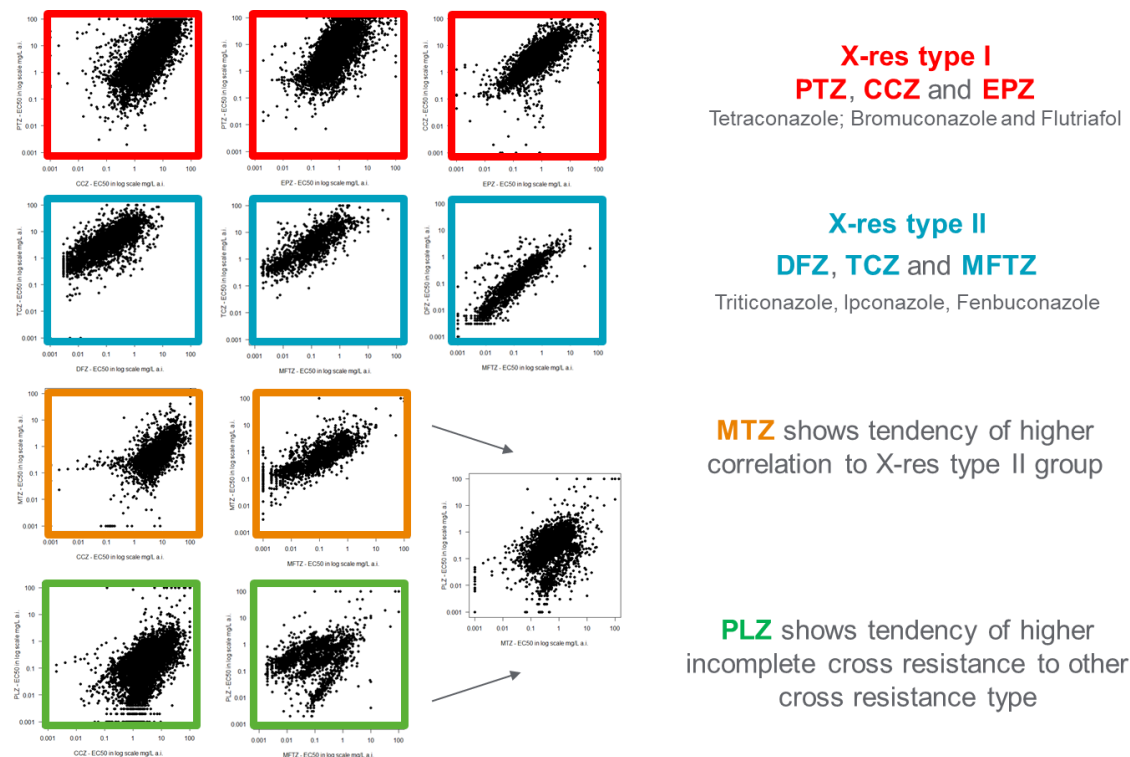


Figure 3.3-4: : *Zymoseptoria tritici* cross resistance patterns including a range of DMI

Anilopyrimidines fungicide cross resistance

AP fungicides do not show cross resistance to SDHI, AP, QoI, QoI-A, QiI and multisites.

Sensitivity data

Baseline sensitivity to prothioconazole

XXXX is currently testing field isolates of the following pathogens as part of standard sensitivity monitoring programs towards prothioconazole and cyprodinil. Baseline sensitivity and monitoring activity to profile respectively Prothioconazole and cyprodinil of each pathogen has been carried out with in vitro bioassay methods in 96- or 24-well format or in planta tests. Single conidia/pycnidia isolates were obtained from field samples collected in commercial fields or trial sites all over Europe. The isolates were exposed

to a range of concentrations of technical compounds. Based on visually assessed inhibition of growth on spore seeded agar medium the EC50 values were calculated. Tests were repeated at least twice. Biotrophic pathogens were tested using a leaf disk assay. XXXX did not run specific monitoring regarding pathogens isolated from rye and triticale. It follows the results from wheat and barley pathogens.

Wheat pathogens

***Puccinia recondita* – brown rust of wheat**

FRAC SBI working group reported a good field performance of DMIs and sensitivity monitoring was conducted in 2020 from Belgium, Czech Republic, Denmark, France, Germany, Hungary, Italy, Poland, Romania, Slovakia, Spain, and United Kingdom. Sensitivity data from 2020 generated by BASF, Bayer and Sumitomo for wheat brown rust showed that sensitivities were in the range of those of the last 20 years as observed in monitoring from previous years.

No sensitivity data are available for cyprodinil.

***Puccinia striiformis* – yellow rust of wheat**

FRAC SBI working group reported a good field performance of DMIs and sensitivity monitoring was conducted in 2020 from Belgium, Denmark, France, Germany, Italy, Poland, Portugal, Spain and United Kingdom. Sensitivity data from 2020 generated by Bayer and Sumitomo for wheat yellow rust showed high sensitivities to prothioconazole. Results from 2020 were in the range of those reported since 2015.

No sensitivity data are available for cyprodinil.

***Zymoseptoria tritici* – Septoria blotch of wheat**

Z. tritici sensitivity to prothioconazole has been monitored as stable between 2005 and 2008. In 2009 a trend to slightly higher EC50 values was observed in important cereal growing areas (France, Germany, Ireland, United Kingdom), this trend has slowed down in 2010 to 2012 and was stable in 2013. Between 2014 and 2015 depending on the individual active ingredient and regions slight shifts of sensitivity of populations have been observed. Highest EC50 values were observed in areas of elevated disease pressure and sub-optimal use of azoles in spray programs (e.g. reduction of rates in comparison to the manufacturer's recommended rate and inappropriate use of effective mix partners). In 2021, the sensitivity of the populations was overall stable on European level with EC50 sensitivity values in a range of variability known since 2014. In *Z. tritici*, different DMI haplotypes can lead to varying levels of sensitivity depending on the chemical structure. As DMIs are generally cross-resistant, resistance management approaches should be the same for all DMIs. Overall, DMI EC50 sensitivity values were somewhat higher in the UK and Ireland than observed on the European continent where a gradient can be observed from North-West to South-East. In regions with limited options in fungicides classes and/or a common practice of significantly reduced rates DMIs are at higher risk and performance might be impacted. An analysis of *Z. tritici* sensitivity evolution and geographic distribution in Europe from 2005 to 2021 is presented in Figure 3.3.3-1.

No sensitivity data are available for cyprodinil.

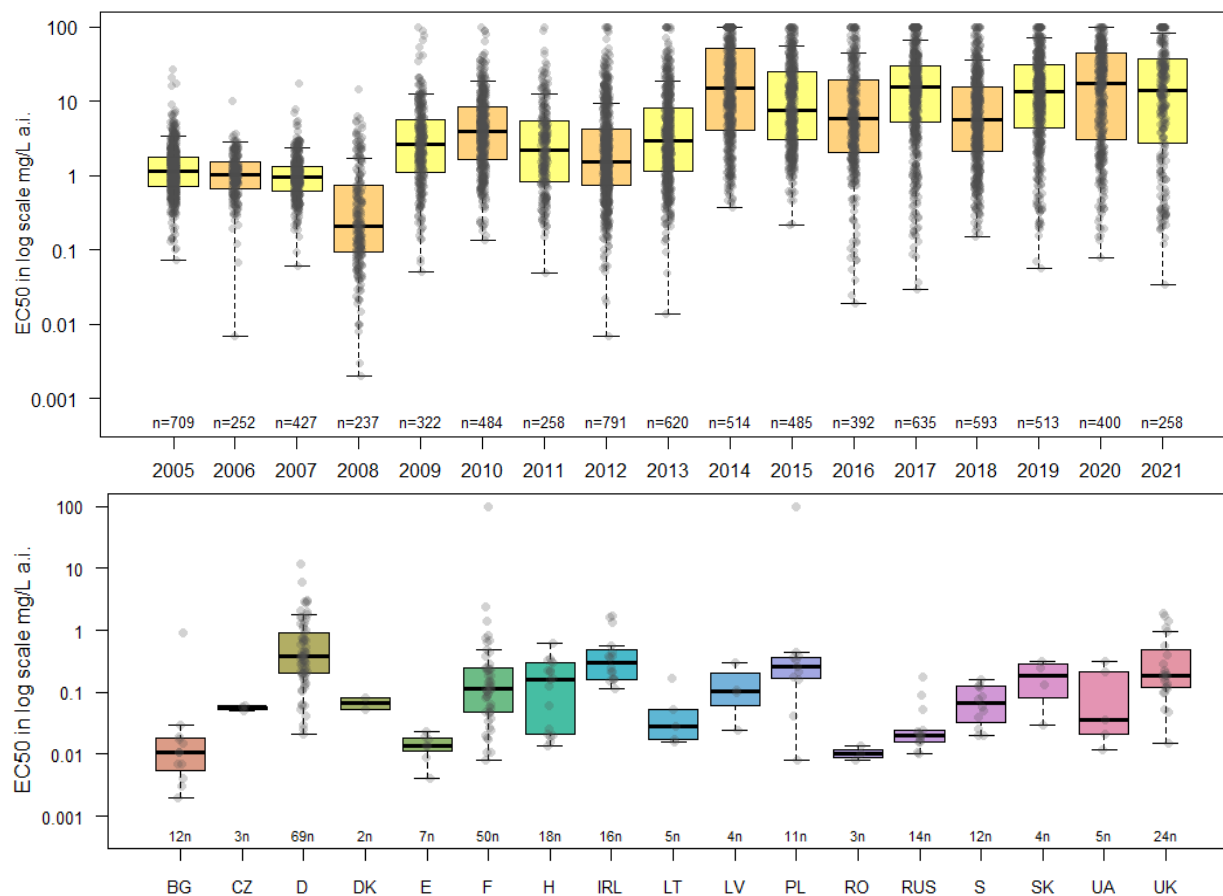


Figure 3.3-5: : Boxplot analysis of *Z. tritici* sensitivity evolution to prothioconazole and geographic distribution in Europe from 2005 to 2021. Geographic distribution shows data based on desthio-prothioconazole results.

Parastagonospora nodorum

Limited number of strains from Germany and Poland collected in 2019 have been tested showing sensitivity prothioconazole.

No sensitivity data are available for cyprodinil.

Blumeria graminis tritici

Blumeria graminis tritici sensitivity to prothioconazole was monitored in 2021 considering samples collected from France, Germany, Hungary, Italy, Poland, Spain and United Kingdom. A total of 48 populations were collected from seven European countries including Germany, Spain, France, Hungary, Italy, Poland and United Kingdom. EC50 values showed a sensitive situation with limited variation between countries (Figure 3.3.3-2).

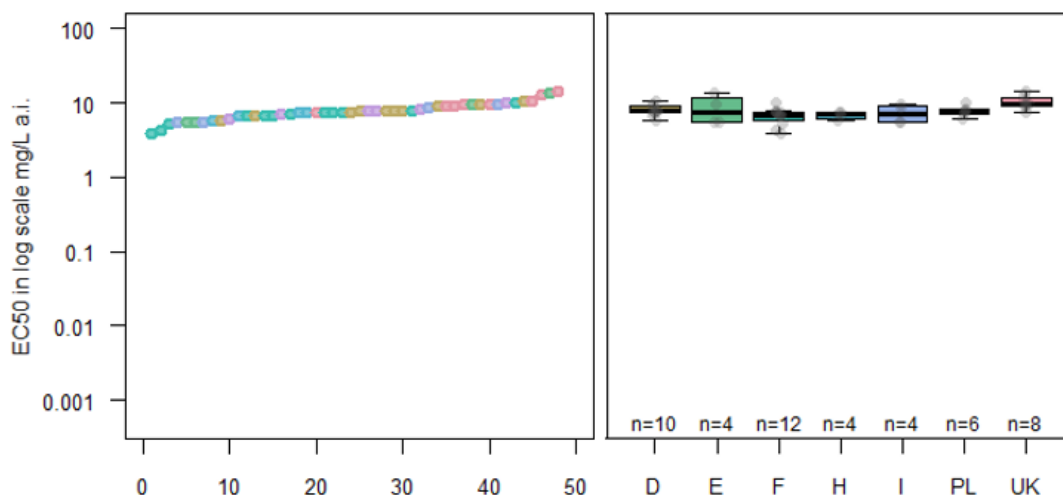


Figure 3.3-6: : Prothioconazole sensitivity distribution of *Blumeria graminis tritici*. Samples were collected from seven European countries including Germany, Spain, France, Hungary, Italy, Poland and United Kingdom

These results are in line with those reported by FRAC SBI working group. DMI sensitivity data generated in 2019 by Bayer and Sumitomo for samples collected from Czech Republic, France, Germany, Poland, and United Kingdom. Sensitivity data presented for 2016 to 2019 confirmed that the situation was overall stable within the range of variability detected during the last 20 years. Overall resistance factors were low (<10 x fold changes) compared to the sensitive reference.

No sensitivity data are available for cyprodinil.

Pyrenophora tritici repentis

The sensitivity to prothioconazole has been monitored for 81 strains collected between 2016 and 2021 from twelve European countries, including Czech Republic, Germany, Finland, Hungary, Italy, Lithuania, Latvia, Poland, Romania, Sweden, Slovakia and United Kingdom. Stable sensitivity to DMIs was reported with no major variations between countries (figure 3.3.3-3).

No sensitivity data are available for cyprodinil.

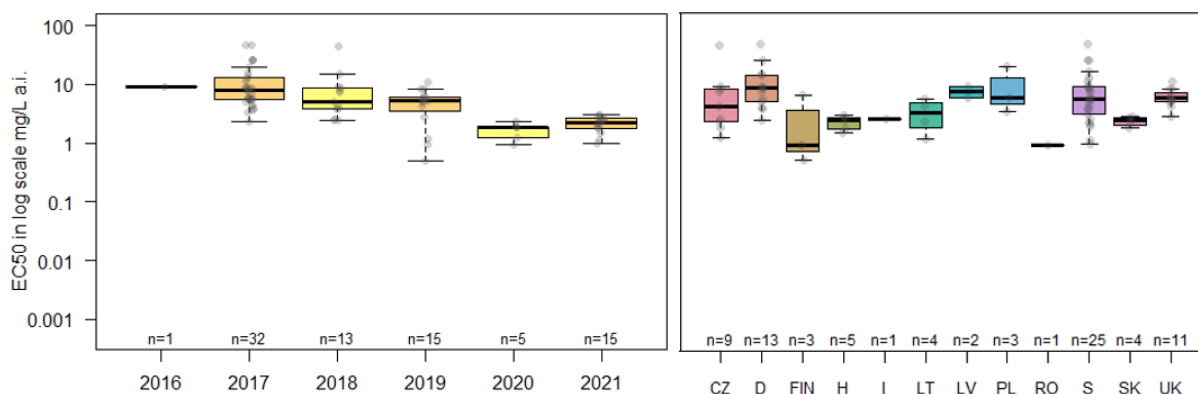


Figure 3.3-7: : *Pyrenophora tritici repentis* sensitivity evolution to prothioconazole from 2016 to 2021. Sensitivity to DMI remained stable in the six tested seasons. Samples were collected from Czech Republic, Germany, Finland, Hungary, Italy, Lithuania, Latvia, Poland, Romania, Sweden, Slovakia and United Kingdom

Oculimacula yallundae

Eyespot sensitivity to prothioconazole has been monitored since 2014 (Figure 3.3.3-4). Strains were collected predominantly from France and Germany, but monitoring included as well other ten European countries (Czech Republic, Denmark, Spain, Italy, Lithuania, Latvia, Poland, Russia, Ukraine and United Kingdom). In 2021 comparable sensitivity range was observed as in 2014. No major variations were observed between countries.

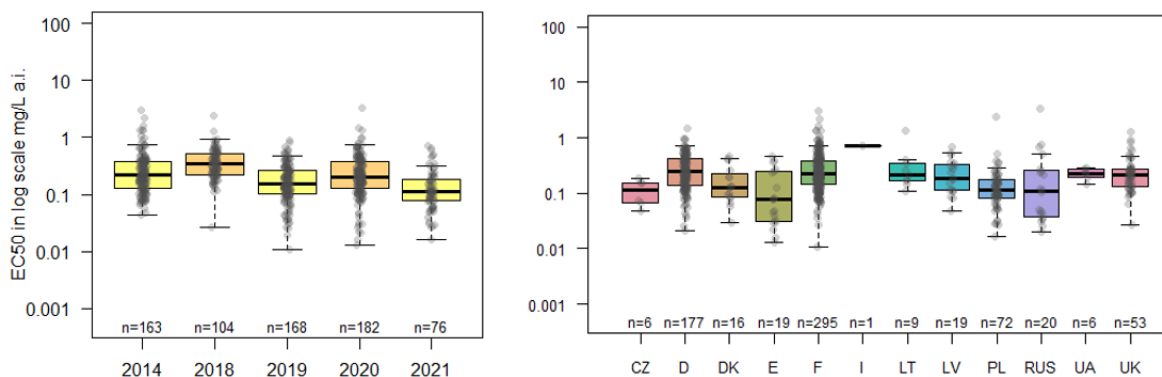


Figure 3.3-8: : *Oculimacula yallundae*s sensitivity evolution to prothioconazole from 2014 to 2021. Sensitivity to DMI remained stable in the monitored period. Samples were collected from twelve European countries without showing patterns of geographic variations

Eyespot sensitivity to cyprodinil has been monitored since 2018 (Figure 3.3.3-5). Broad sensitivity to cyprodinil characterized the European populations. Single isolates showing a resistant phenotype were observed in Germany and France. This phenotype is not increasing in frequency.

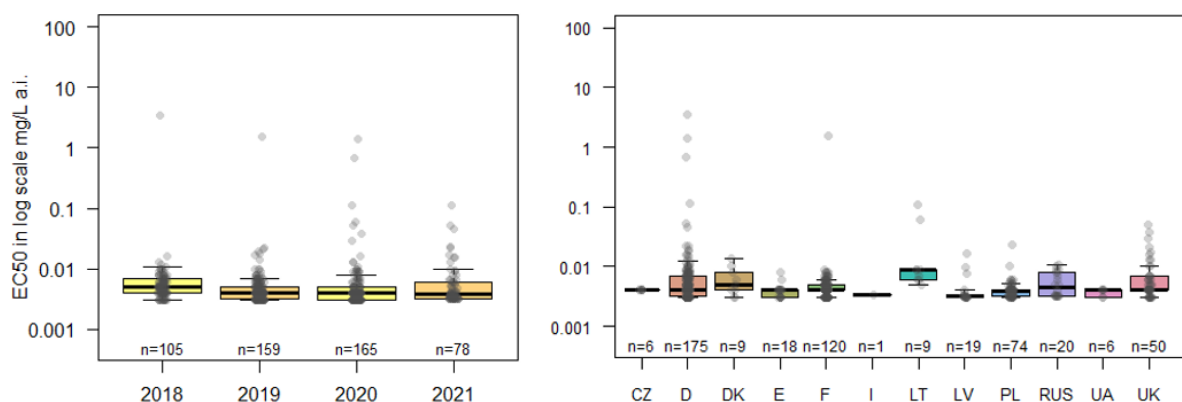


Figure 3.3-9: : *Oculimacula yallundae* sensitivity evolution to cyprodinil from 2018 to 2021. Sensitivity to cyprodinil remained stable in the monitored period. Samples were collected from twelve European countries without showing patterns of geographic variations

Barley pathogens

Puccinia hordei

FRAC SBI working group reported a very narrow sensitivity distribution and stable sensitivity situation for prothioconazole since 2014 in Europe.

No sensitivity data are available for cyprodinil.

Pyrenophora teres

Overall, *P. teres* sensitivity to prothioconazole has remained stable within a known range for more than 10 seasons (Figure 3.3.3-6). In 2021 monitoring a low variation in median EC50 was monitored between European countries with slightly higher sensitivity monitored in Mediterranean countries. During 2017 in France strains showing higher EC50 values were monitored in areas of elevated disease pressure, often coupled with a reported reduced variety-resistance at significant cultivation areas, and sub-optimal use of azoles in spray programs (e.g. reduction of rates in comparison to the manufacturer's recommended rate and inappropriate use of effective mix-partners).

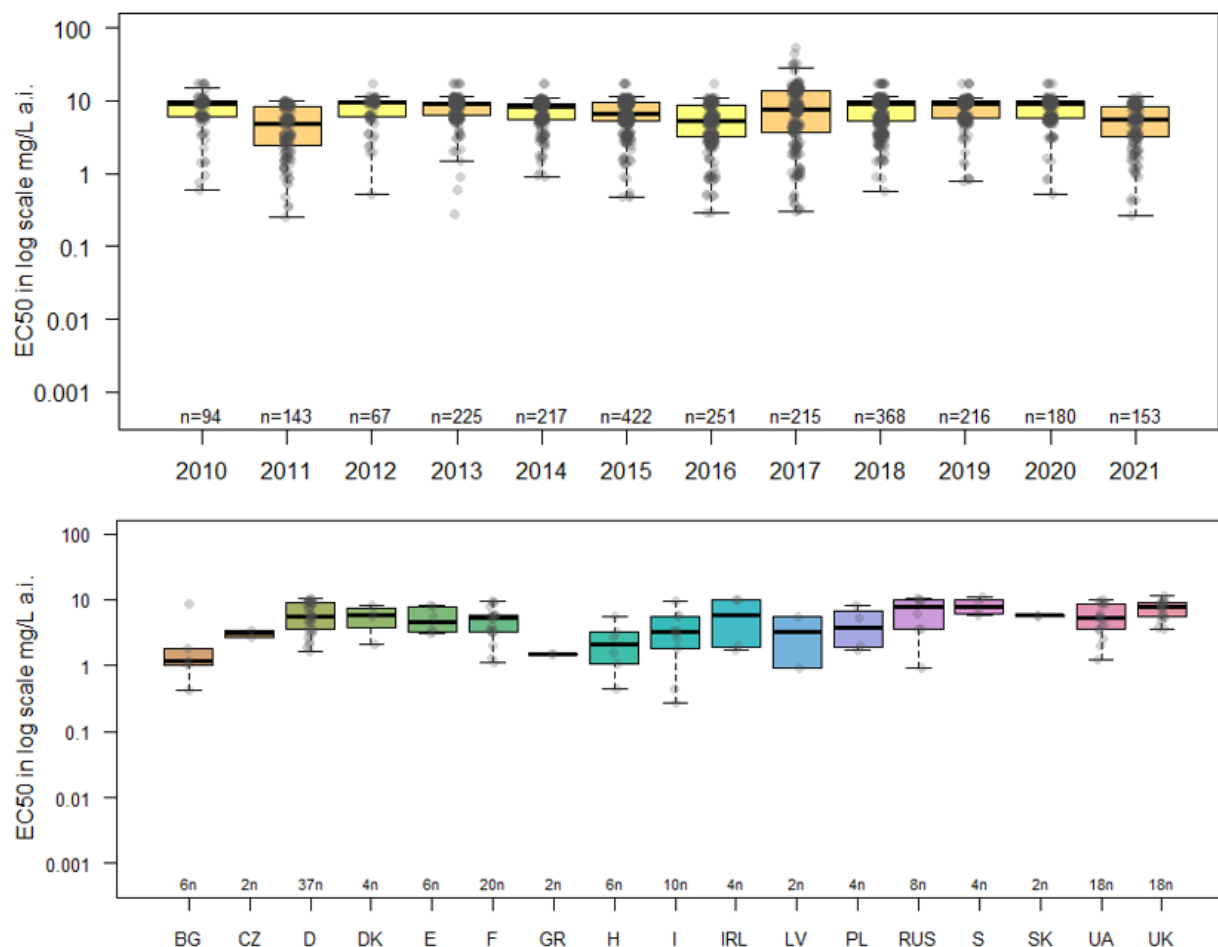


Figure 3.3-10: *Pyrenophora teres* sensitivity evolution to prothioconazole from 2010 to 2021. Sensitivity to DMI remained stable since the beginning of monitoring. Monitoring 2021 shows general homogeneous sensitivity distribution in Europe with countries from Southern regions showing slightly higher sensitivity.

Sensitivity of *P. teres* European populations to cyprodinil have been monitored since 2010 (Figure 3.3.3-7). Since the beginning of the monitoring single strains showing resistance to cyprodinil were observed. The frequency of strains showing resistance to cyprodinil remained stable without increasing in frequency. The current populations of *P. teres* are broadly sensitive to cyprodinil. In 2021 a total of 153 strains were monitored from 17 European countries and only single strains showing resistance to cyprodinil were reported in Germany, France and UK.

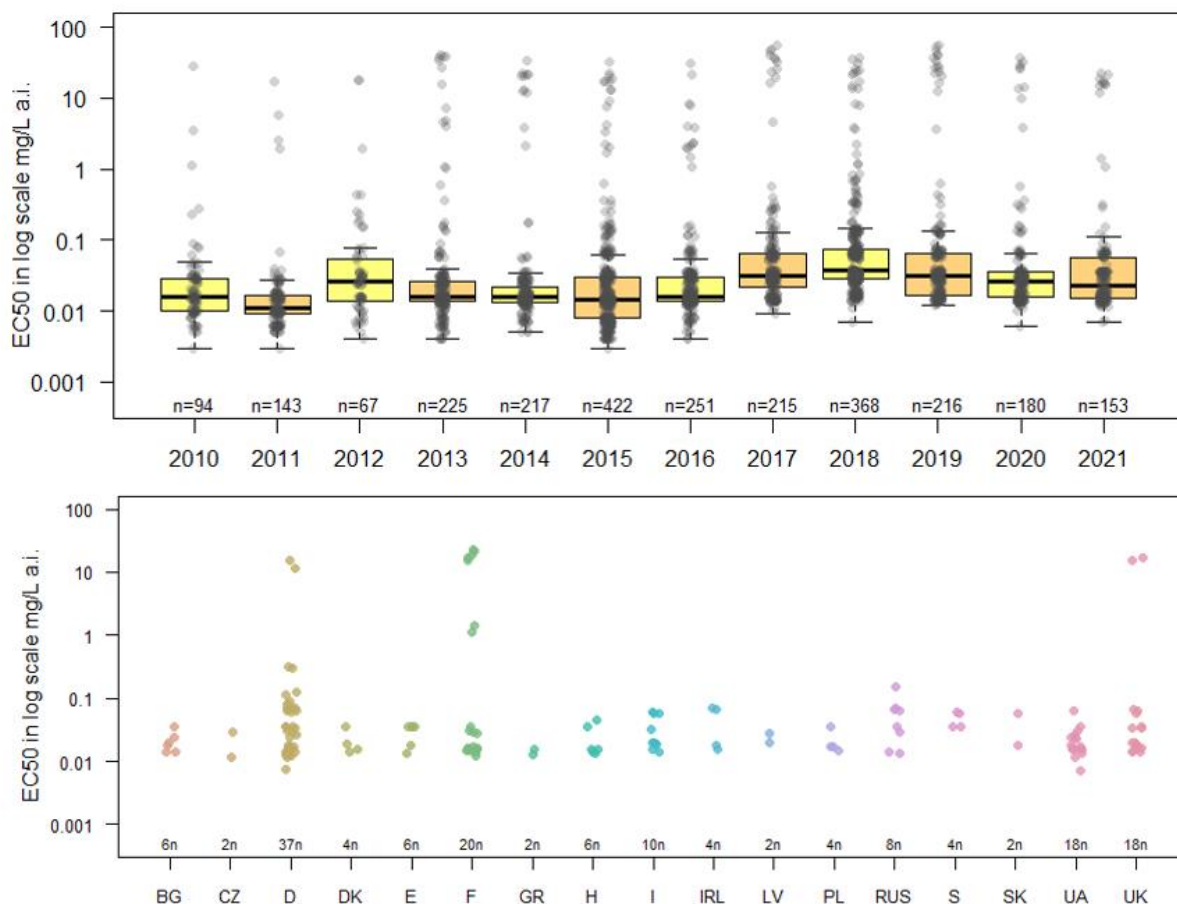


Figure 3.3-11: : *Pyrenophora teres* sensitivity evolution to cyprodinil from 2010 to 2021. Sensitivity to AP remained stable since the beginning of monitoring. Monitoring 2021 shows broad sensitivity distribution in Europe with single resistant outliers from Germany, France and United Kingdom.

Rhynchosporium commune (aka *R. secalis*)

R. commune sensitivity to prothioconazole have been monitored since 2003 (Figure 3.3.3-8). The results show a stable sensitivity with no major variations between monitored countries. In 2021 a total of 240 strains were monitored from nine European countries.

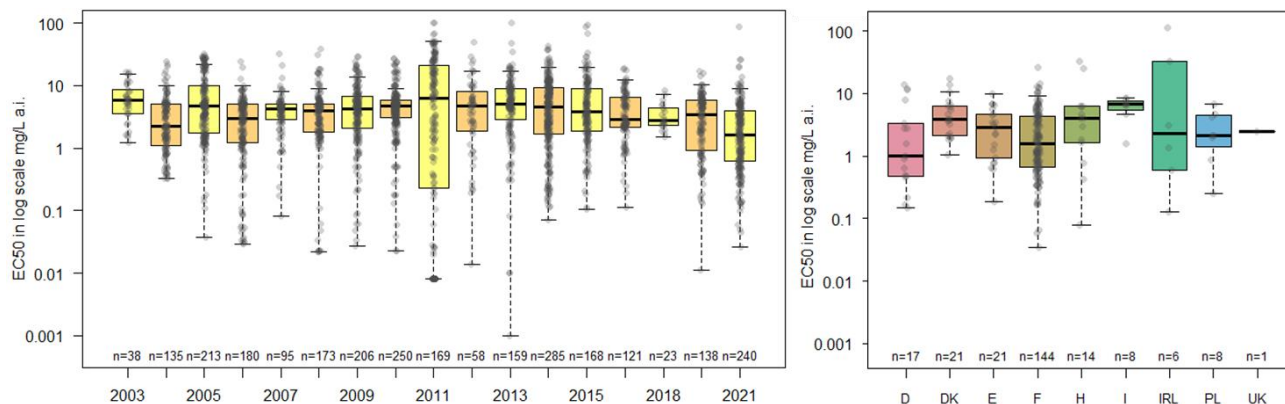


Figure 3.3-12: : *P. commune* sensitivity evolution to prothioconazole (PTZ) since 2003 showing a stable situation. Monitoring 2021 shows general homogeneous sensitivity distribution in Europe considering nine European countries

R. commune sensitivity to cyprodinil has been monitored since 2014 (Figure 3.3.3-9). The results show a stable sensitivity with no major variations between monitored countries. In 2021 a total of 238 strains were monitored from nine European countries. In 2021 no resistant strains were monitored. Strains collected from Italy showed slightly higher EC50s, however in a range of full sensitivity. In 2014 and in 2022 single strains showing resistance to cyprodinil were monitored. These strains do not appear to be increasing in frequency.

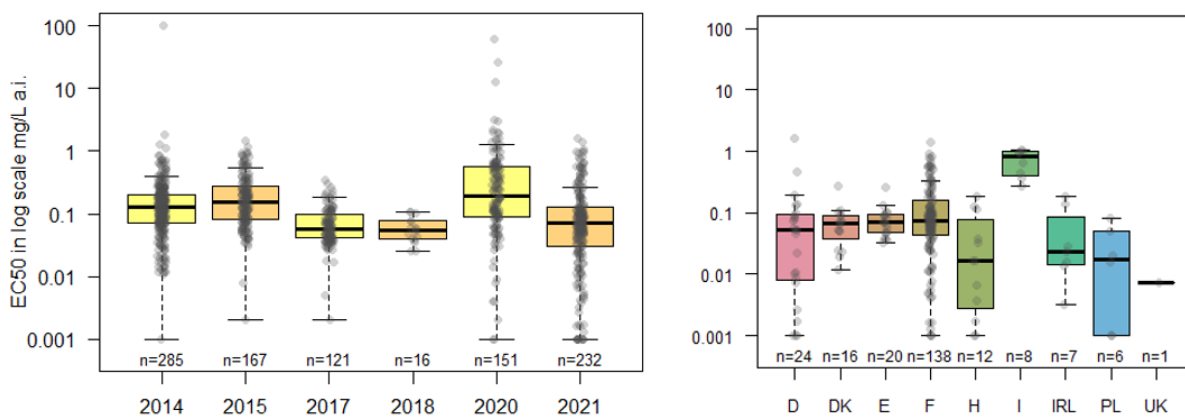


Figure 3.3-13: : *P. commune* sensitivity evolution to cyprodinil since 2014 showing a stable situation. Monitoring 2021 shows general homogeneous sensitivity distribution in Europe considering nine European countries. Strains from Italy were at the highest distribution of the sensitive range.

Ramularia collo-cygni

R. collo-cygni isolates harbouring the resistance allele I325T in *cyp51* are associated to a significant loss of sensitivity. Resistance to DMI has been observed in Europe since 2014 and has progressed in the last years. The 2021 monitoring including data from 10 European countries showed an heterogeneous situation between Northern and Southern European countries. No DMI resistance allele was monitored in Italy. Low frequency of DMI resistance allele was monitored in Spain and Croatia. No to moderate of DMI resistance allele was monitored in the Netherlands. Moderate frequencies in Austria. Moderate to high frequency of DMI resistance allele was monitored in Czech Republic, Germany and France. High frequency of DMI resistance allele was monitored in Ireland and United Kingdom (Figure 3.3.3-10).

No sensitivity data are available for cyprodinil.

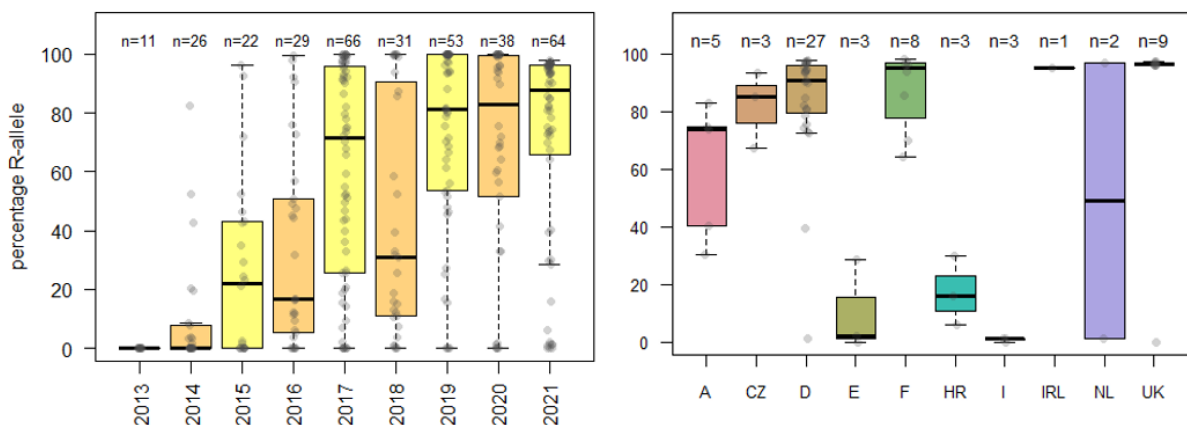


Figure 3.3-14: : Evolution of DMI resistance allele *cyp51*-I325T in Europe since 2013 (left). Geographic distribution of the resistance allele *cyp51*-I325T in Europe for population collected in 2021 (right).

Blumeria graminis hordei

Sensitivity monitoring to prothioconazole conducted in 2021 included samples collected from six European countries including Germany, France, Hungary, Italy, Poland and United Kingdom. The sensitivity range was very narrow showing broad sensitivity in the monitored countries (Figure 3.3.3-11).

These results were confirmed by FRAC SBI working group reporting monitoring activities in 2020 from Czech Republic, France, Germany, Latvia, Ukraine, and United Kingdom. Results showed a stable sensitivity situation as reported in the last 15 years.

No sensitivity data are available for cyprodinil.

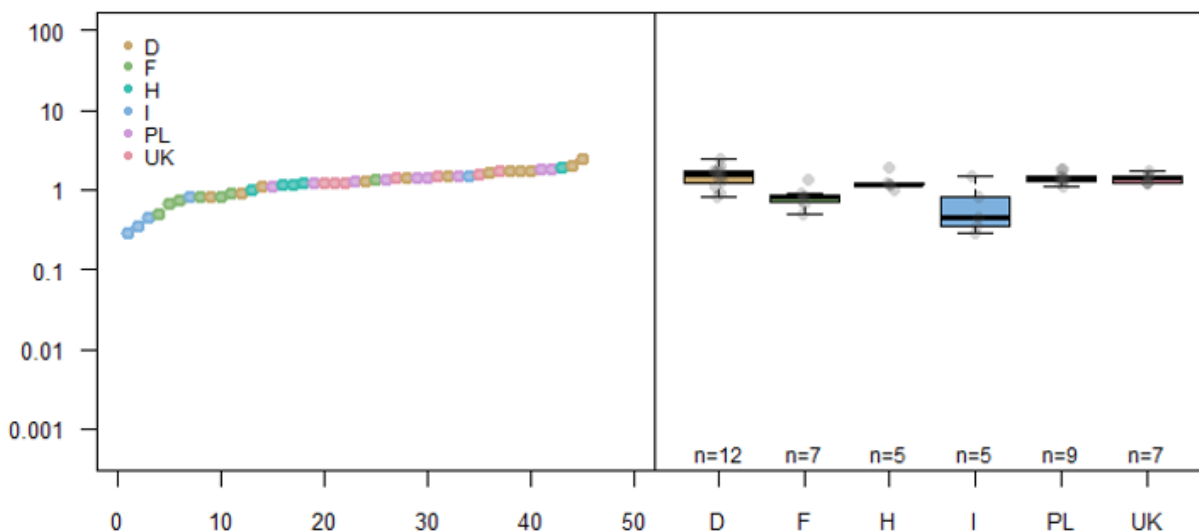


Figure 3.3-15: . Prothioconazole sensitivity distribution of *Blumeria graminis hordei*. Samples were collected from six European countries including Germany, France, Hungary, Italy, Poland and United Kingdom

Use pattern

In the most intensive cereal growing regions of Europe and especially in seasons with high disease pressure up to 4 foliar sprays per crop are done. Treatment frequency in wheat is higher compared to barley, rye and triticale. Selection pressure resulting from unrestricted use pattern would increase the risk of quick resistance development compared to the management strategy described below.

Resistance risk associated with unrestricted use pattern

The actual risk for the evolution of resistance towards prothioconazole and cyprodinil 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.

Prothioconazole and cyprodinil are single site inhibitors. Resistance is mainly due to target site mutations cyp51 for DMI and still under scientific investigation for cyprodinil. Resistance in field populations has been selected by DMI usage. Cyprodinil use in cereals is limited and no strong selection was observed with the sensitivity data. Only little is known about the dynamics of resistance evolution, such as stability, spread and impact on performance all developed mutations. Based on our knowledge today, the intrinsic fungicide risk for prothioconazole and cyprodinil is moderate.

Most of the cereal pathogens mentioned above have high potential for causing serious epidemics with production of large numbers of spores released to the air. The degree of sexual recombination is significant for *Z. tritici* and *P. teres*, whereas it is unknown or not important for *R. secalis*. *Z. tritici* is classified by

FRAC as medium risk pathogen regarding acquiring fungicide resistance. Reduced sensitive strains can be found in both *Z. tritici* and *P. teres* populations. It is not clear how far these genotypes are spread and what the future development will be. Most likely this will depend on the selection imposed by the local use of fungicide classes used to control the different diseases. A diversification in use of fungicide classes is advisable to reduce the selection to the single fungicide classes. Currently most of the spray programs rely to SDHI and DMI. Bringing new mode of actions is considered critical for managing resistance evolution. After the ban of chlorothalonil an effective multisite cannot be anymore needed reducing the tools available to plan a balanced spray program. In such a context cyprodinil offers a complementary option in some important cereal diseases. The mixture prothioconazole and cyprodinil might be complemented by additional fungicide classes in high disease pressure regions of Septoria leaf blotch. To the present, monitoring data from *P. teres* suggest a possible future increase in the fraction of the population showing reduced sensitivity to SDHIs in some countries, but a general stabilization in countries as France and Germany. Here the frequency of adapted strains is heterogeneous, but generally high. Under this scenario the cyprodinil can contribute to the disease control and reduce the selection to SDHI. A comparable situation as for *P. teres* has been reported for *R. collo-cygni* with an increase of frequency of SDHI resistance. The first detection of SDHI resistance have been observed in 2020 for *R. secalis*. As well for this pathogen diversification of the used fungicide classes might be considered a sustainable practice to manage resistance evolution.

The risk of developing resistance to fungicides of *Puccinia* spp is considered as low, since no highly resistant strains have been detected so far. The small change in sensitivity towards DMI does not seem to impact the performance of fungicides under field conditions. However, a recent review challenge the effective risk of evolving resistance to certain fungicide classes proposing to increase the vigilance, e.g. for novel SDHIs that show higher activity to rusts than the older. So far no DMI practical resistance has been communicated for cereal powdery mildew.

DMI fungicides have been used in Europe to control cereal diseases since decades and still offer an acceptable efficacy. Despite in some pathogens as *Z. tritici* some gradual sensitivity shifts have been observed the sensitivity evolution to the target diseases mentioned above should be considered stable. The overall resistance risk for DMIs and anilinopyrimidines including prothioconazole and cyprodinil should be considered between low to medium, depending on the agronomic risk associated to each pathogen/crop system (Figure 3.3.5-1).

SDHIs	High risk Benzimidazoles Qols Phenylamides	3	3	6	9	1	High risk
			1,5	3	4,5	0,5	Medium risk
			0,75	1,5	2,25	0,25	Low Risk
	Medium risk Carboxanilides DMIs / APs Morpholines MBI-D Phenylpyrrols	2	2	4	6	1	High risk
			1	2	3	0,5	Medium risk
			0,5	1	1,5	0,25	Low Risk
	Low risk Multi sites MBI-R Resistance Ind.	0,5	0,5	1	1,5	1	High risk
			0,25	0,5	0,75	0,5	Medium risk
			0,125	0,25	0,375	0,25	Low Risk
	Fungicide Risk Pathogen Risk		1	2	3	Agronomic Risk Pathogen Risk	
Low risk <i>R. secalis</i> Rust spp. <i>Fusarium</i> spp. Soil borne fungi Seed borne fungi Smuts & Bunts			Medium risk <i>Z. tritici</i> <i>P. teres</i> <i>P. tritici repentis</i>	High risk <i>Blumeria</i> spp <i>R. collo-cygni</i> <i>Corynespora</i> <i>Plasmopara</i> <i>Magnaporthe</i>			

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

Figure 3.3-16: : 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 prothioconazole and cyprodinil 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 XXXX is able to adapt to any changes in sensitivity and readily adopt alternative resistance management strategies as appropriate.

XXXX recommends limiting the application of the prothioconazole and cyprodinil mixture to only one per season. Spray programmes should be planned so that highly curative situations are avoided.

Current resistance management strategies below should be considered (www.frac.info):

The avoidance of repetitive and sole use of a particular fungicide or those with the same mode of action

The mixing or alternating sequences of fungicides with different modes of action. Especially in areas with high disease pressure and reported decreased sensitivity

Do not reduce rates of fungicides in tank mixtures

Integrate fungicide use with cultural control methods

Limiting the number of treatments per season to one

Avoid unnecessary prophylactic treatments, ensure preventative treatments are applied in accordance with recommendations for disease control

Anti-resistance strategies are based on previous experiences with resistance development to other site specifics in the target populations, on the cross-resistance relationships that exist between new and existing active ingredients, and on the genetic mechanisms that are likely to control resistance expression in the pathogen.

The use of disease resistant crop varieties and appropriate agronomic and hygienic practices are also valuable anti-resistance measures. They help both to reduce disease incidence and to decrease selection of fungicide resistant forms.

Comments of zRMS:	<p>Resistance risk</p> <p>The applicant provided a detailed description of both active substances cyprodinil and prothioconazole, included in A23282A (Kayak Era), their mode of action, baseline sensitivity and cross resistance patterns for cereals targets, discussed the risk of resistance, and presented known cases of resistance to individual active substances used as a single products. Cyprodinil (CDL) belongs to the anilinopyrimidine fungicides (FRAC grup 9). Its mode of action includes inhibition of methionine biosynthesis and secretion of hydrolytic enzymes. Prothioconazole is a demethylation inhibitor (DMI) fungicide and is classified in group G1 of FRAC (3(. The mode of action is inhibition of ergosterol biosynthesis, which has been classified as a medium resistance risk. The risk of developing resistance to both active substances is considered low to medium.</p> <p>The objective of resistance management strategies is reduction of selection pressure to avoid or delay the occurrence of resistance or to keep the frequency of resistant isolates in a population low. The risk of developing resistance to fungicides depends on: mechanism of resistance, biology of pathogen and agronomical factors. Resistance to DMI fungicides is known in various fungal species and three mechanisms of resistance contribute to DMI sensitivity.</p> <p>For the use of each plant protection product the important key to resistance management is to reduce selection pressure by using a combination of different techniques. The risk management strategy to reduce the risk of resistance development should be based on Good Agricultural Practices (GAP) and recommendations, such as: the proper application time relative to risk for disease development, the use of fungicides with different mode of actions, checking the performance of the crop protection products to ensure adequate efficacy is achieved, and also the use of preventive methods and non-chemical methods against diseases, including cultural and agronomic methods depending on the soil and climatic conditions. A23282A is intended to use one a year on the same field and this reduces the risk of resistance. The product label should include a complete strategy of risk development.</p> <p>Conclusion. The modified risk and the resistance management strategy proposed by the applicant seems to be sufficient to manage the risk to acceptable level. The full recommendations for minimize the risk of resistance development on cyprodinil and prothioconazole, should be included in the label of tested product. The cMS should</p>
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	analyse the resistance management strategies for their countries and consider the local conditions.
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3.4 Adverse effects on treated crops (KCP 6.4)

For wheat 13 trials without disease or with low disease development are available. These trials were either conducted as disease free trials or disease levels failed to develop to assessable levels and hence the data are presented within this section to demonstrate the effect of A23282A on wheat ~~triticale~~ yield and quality in the absence of significant levels of disease. Five of the trials were conducted in the Maritime EPPO zone (Denmark, Germany and the United Kingdom). Five trials were conducted in the South-East EPPO zone (Bulgaria, Hungary and Romania). Three of the trials were conducted in the North East EPPO zone (Poland).

For barley 25 trials without disease or with low disease development are available. These trials were either conducted as disease free trials or disease levels failed to develop to assessable levels and hence the data are presented within this section to demonstrate the effect of A23282A on barley ~~triticale~~ yield and quality in the absence of significant levels of disease. 17 of the trials were conducted in the Maritime EPPO zone (Germany France, Ireland, the Netherlands and the United Kingdom). 3 trials were conducted in the South-East EPPO zone (Hungary and Romania). 5 of the trials were conducted in the North East EPPO zone (Latvia, Lithuania and Poland).

For rye there were no disease free trials or trials with low disease development available.

For triticale, in two of the efficacy trials that were conducted during 2020 and 2021, disease levels failed to develop to assessable levels and hence the data are presented within this section to demonstrate the effect of A23282A on triticale yield and quality in the absence of significant levels of disease. One trial was conducted in the Maritime EPPO zone (France) and one in the North-East EPPO zone (Poland).

For oats, in two of the efficacy trials that were conducted during 2021, disease levels failed to develop to assessable levels and hence the data are presented within this section to demonstrate the effect of A23282A on oats yield and quality in the absence of significant levels of disease. One trial was conducted in the Maritime EPPO zone (France) and one in the North-East EPPO zone (Finland).

Information on trials submitted

Table 3.4-1 aims to give an overview of all the disease free and low / no disease submitted trials and Table 3.4-2 provides details of the reference standards used within these trials. Details of trials methodology for the low / no disease wheat trials are presented in Table 3.4-3, Table 3.4-4, Table 3.4-5 and Table 3.4-6.

Table 3.4-1: Presentation of trials (selectivity trials, transformation trials...)

Crop	Country	Years	Type of trial*	Number of trials (number of valid trials)				GEP, non-GEP, official**
				MAR zone	MED zone	SE zone	NE zone	
Wheat	BG	2020	Only phytotox			1		GEP
	DE	2021	Y, Q	2				GEP
	DK	2020	Y, Q	1				GEP
	UK	2020 2021	Y, Q Y, Q	1 1				GEP GEP
	HU	2020 2021	Y, Q Y, Q			1 2		GEP GEP
	PL	2020 2021	Y Y, Q				1 2	GEP GEP
	RO	2020	Y, Q			1		GEP
TOTAL		2020-2021		5		5	3	
Barley	DE	2020 2021	Y, Q Y, Q	1 2				GEP GEP
	FR	2020 2021 2021	Y, Q Y, Q Only phytotox	2 4 1				GEP GEP GEP
	GB	2020 2021	Y, Q Y, Q	2 2				GEP GEP
	HU	2021	Y, Q			1		GEP
	IE	2020 2021	Y, Q Y, Q	1 1				GEP GEP
	LT	2021	Y, Q				2	GEP
	LV	2021	Y, Q				2	GEP
	NL	2020	Y, Q	1				GEP
	PL	2020	Y, Q				1	GEP
	RO	2020	Y, Q			2		GEP
TOTAL		2020-2021		17		3	5	
Triticale	FR	2021	Y, Q	1				
	PL	2020	Only phytotox				1	
TOTAL		2020-2021		1			1	
Oats	France	2021	Y, Q	1				
	Finland	2021	Y, Q				1	GEP
TOTAL		2021	-	1	-	-	1	-

* Y = trial with yield assessment, Q = trial with quality assessment, P = trial with processing assessment

** Official: carried out by a national official organisation

Table 3.4-2: Presentation of reference standards used in trials (selectivity trials, transformation trials...)

Reference standard	Country where the product is registered ⁽¹⁾	Authorization number	Active substance(s)	Formulation		Application rate in trials (per treatment)	Remark
				Type ⁽²⁾	Concentration of a.s.		
FANDANGO EC	BG	Not registered	Prothioconazole + Fluoxastrobin	EC	100 + 100	1.25 L/ha	Active ingredients registered alone and in mixture on wide range of crops across Europe
	DE	025315-00/024					
	FR	Not registered					
	GB	17318					
	HU	Not registered					
	PL	R-10/2011					
FLEXITY SC	DK	650-77/72353	Metrafenone	SC	300	0.5 L/ha	Active ingredients registered alone and in mixture on wide range of crops across Europe
	LT	AS2-50F(2019)					
	LV	0265					
	PL	R-143/2019					
	RO	454PC					

Table 3.4-3: Details on trial methodology for disease free and low / no disease wheat trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4),
	Specific guidelines	EPPO: PP 1/026 (4)
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 10.5 – 40.0 m ² South-East EPPO zone: 16 – 24 m ² North East EPPO zone: 17.5 – 22.5 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 5 Winter wheat South-East EPPO zone: 5 Winter wheat North East EPPO zone: 3 trial Winter Wheat
	Varieties per crop	Maritime EPPO Zone: Asory, Chevignon, Elation, Gleam, Ohio South East EPPO zone: Cameleon, Cellule, Glosa, Kolo, Sofru North East EPPO zone: Belissa, Sailor, Ponticus
	Sowing period	Maritime EPPO zone Winter Wheat: September – October South East EPPO zone Winter Wheat: October-November North East EPPO zone Winter Wheat: September-October
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 39-49, BBCH 30-32 South East EPPO zone: BBCH 39-49, BCH 32 North East EPPO zone: BBCH 39, BBCH 31
	Timing	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 200-300 l/ha South East EPPO zone: 200-300 l/ha North East EPPO zone: 300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity, chlorosis, necrosis, vigour reduction, discolouration Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: Calcareous clay loam, loamy sand, sandy loam, loess, sandy clay loam South East EPPO zone: Clay loam, loam North East EPPO zone: silt loam, silty clay loam, fine silty clay
	Natural/artificial inoculation	Not relevant for low / no disease trials
	Field / Greenhouse	Field

Table 3.4-4: Details on trial methodology for low / no disease barley trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4)
	Specific guidelines	EPPO: PP 1/026 (4)
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 10.0 – 30.0 m ² South-East EPPO zone: 16 – 30 m ² North East EPPO zone: 17.5 – 25.0 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 17 (15 winter barley, 2 spring barley) South-East EPPO zone: 3 Winter barley North East EPPO zone: 5 (3 winter barley, 2 spring barley)
	Varieties per crop	Maritime EPPO Zone: Bazooka, Cassia, Cresswell, Etincel, Infinity, Tower, Lomerit, Margaux, Planet, Rafaela, Kingsbarn South East EPPO zone: Andreea, Cardinal, Conchita North East EPPO zone: Carola, Kosmos, Laureate, Luoké, Wootan
	Sowing period	Maritime EPPO zone September – November; March South East EPPO zone March -October North East EPPO zone April, September
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 39-51, BBCH 31-32 South East EPPO zone: BBCH 55, BBCH 31-32 North East EPPO zone: BBCH 47-51, BBCH 31-33
	Timing	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO Zone: 200-300 L/ha South East EPPO zone: 200-250 L/ha North East EPPO zone: 250-300 L/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity, chlorosis, necrosis, vigour reduction, discolouration Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: Sandy loam, loamy sand, calc. clay, clay, loamy clay, clay loam, sandy clay loam, silt loam South East EPPO zone: sandy loam, clay loam North East EPPO zone: sandy loam, calc. loam
	Natural/artificial inoculation	Not relevant for low / no disease trials
	Field / Greenhouse	Field

Table 3.4-5: Details on trial methodology for low / no disease triticales trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4)
	Specific guidelines	EPPO: PP 1/026 (4)
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 16.0 m ² North-East EPPO Zone: 17.5 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 1 trial North-East EPPO Zone: 1 trial
	Varieties per crop	Maritime EPPO Zone: Orval North-East EPPO Zone: Kasyno
	Sowing period	Maritime EPPO zone: October North-East EPPO Zone: September
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 37 North-East EPPO Zone: BBCH 51
	Timing	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 300 l/ha North-East EPPO Zone: 300 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: Sandy clay North-East EPPO Zone: -
	Natural / artificial inoculation	Not relevant for low / no disease trials
	Field / Greenhouse	Field

Table 3.4-6: Details on trial methodology for low / no disease oat trials

Guidelines	General guidelines	EPPO:PP 1/152 (4), EPPO:PP 1/181 (4), EPPO:PP 1/135 (4), EPPO: PP 1/026 (4)
	Specific guidelines	EPPO: PP 1/026 (4)
Experimental design	Plot design	RCBD
	Plot size	Maritime EPPO Zone: 26.4 m ² North-East EPPO Zone: 16 m ²
	Number of replications	4
Crop	Trials per crop	Maritime EPPO Zone: 1 trial spring oat North-East EPPO Zone: 1 trial
	Varieties per crop	Maritime EPPO Zone: Opaline North-East EPPO Zone: Niklas
	Sowing period	Maritime EPPO zone: March North-East EPPO Zone: May
Application	Crop stage (BBCH) at application	Maritime EPPO Zone: BBCH 39 North-East EPPO Zone: BBCH 45
	Timing	Application timing growth stage according to protocol requirements
	Number of applications Intervals between applications	1 -
	Spray volumes	Maritime EPPO zone: 300 l/ha North-East EPPO Zone: 200 l/ha
	Application method	Foliar spray
Assessment	Assessment types	Phytotoxicity: General phytotoxicity Yield and Quality: Yield, thousand grain weight, hectolitre weight, % protein content
	Assessment dates	Phytotoxicity assessments: Throughout growing season Yield assessments: At normal crop harvest Quality assessments: At harvest or post-harvest
Other relevant information	Soil type	Maritime EPPO Zone: clay North-East EPPO Zone: sandy clay
	Natural / artificial inoculation	Not relevant for low / no disease trials
	Field / Greenhouse	Field

For full details on the methodology of the trials refer to section 3.2.

3.4.1 Phytotoxicity to host crop (KCP 6.4.1)

In order to confirm the good selectivity of A23282A applied to cereals at BBCH 30-69, crop phytotoxicity was assessed in all the efficacy, disease free and low / no disease trials at various intervals after product application.

All assessments were based on a 0-100 scale where 0 means no damage and 100 means total crop loss. Individual phytotoxicity symptoms were recorded where appropriate. Where no phytotoxicity was observed, this was generally recorded within the individual trial reports either as assessment (0) or as text in the comments. Also, no phytotoxicity was observed in all trials, where no specific ratings or comments were made in the detailed trial records.

Phytotoxicity in wheat

Crop phytotoxicity assessments on wheat were undertaken in all 97 efficacy trials carried out during 2020 and 2021 that have generated data on the efficacy of a single application at BBCH 30-69 of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) against *Zymoseptoria tritici*, *Puccinia recondita*, *Puccinia striiformis*, *Blumeria graminis* and Eyespot.

Crop phytotoxicity assessments on wheat were undertaken on 13 efficacy trials carried out between 2020 and 2021 where no or low disease development was observed following a single application at BBCH 30-69 of A23282A at 2.0 LPR/ha.

No phytotoxicity on wheat was recorded in the majority of trials.

Low levels of phytotoxicity, caused by A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha), were observed in 21 efficacy trials and in 4 disease free or low disease trials.

However, in 4 of the 21 efficacy trials and in one of the 4 disease free or low disease trials where phytotoxicity was occurred only the 2N application rate of A23282A caused phytotoxicity >5%. In all trials phytotoxicity was <15%. In most of the trials where phytotoxicity occurred, symptoms were either transient or considered acceptable by the trialist. The symptoms varied between trials, but took the form of either chlorosis, necrosis, burning or general discoloration. No adverse impact on wheat yield or quality were observed.

Overall conclusion

Phytotoxicity symptoms in wheat caused by a single application of A23282A applied at BBCH 30-69 at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) were only observed in 16 of the 97 efficacy trials and in 1 of the 13 disease free or low disease trials reported within this dossier. Symptoms were mostly transient or considered acceptable by the trialist. No impact on yield or quality was observed.

These trials were conducted in both the presence and absence of disease and were located across three EPPO zones, in 14 countries over two seasons (2020 – 2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) can be considered safe to all varieties of winter, spring and durum wheat.

Phytotoxicity in barley

Crop phytotoxicity assessments on barley were undertaken in all 103 efficacy trials carried out during 2020 and 2021 that have generated data on the efficacy of a single application at BBCH 30-59 of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) against *Pyrenophora teres*, *Rhynchosporium secalis*, *Ramularia collo-cygni*, *Puccinia hordei* and Eyespot.

Crop phytotoxicity assessments on barley were undertaken on the 25 efficacy trials carried out between 2020 and 2021 where no or low disease development was observed following a single application at BBCH 30-69 of A23282A at 2.0 LPR/ha.

No phytotoxicity on barley was recorded in the majority of trials.

Low levels of phytotoxicity, caused by A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha), were observed in 8 efficacy trials and in 3 disease free or low disease trials.

From the 103 efficacy trials 8 trials and from the 25 disease free/low disease trials 3 trials showed phytotoxicity >5%. However, in 5 efficacy trials and in 2 disease free trials only the 2N rate caused phytotoxicity, in the 1N rate the symptoms were <5%. The most frequent symptoms were chlorosis or necrosis/burning. In the majority of these trials the symptoms were transient and had no negative impact on the barley yield.

Overall conclusion

Phytotoxicity symptoms in barley caused by a single application of A23282A applied at BBCH 30-59 at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha), were only observed in 3 of the 103 efficacy trials and 1 out of the 25 disease free or low disease trials reported within this dossier. The observed symptoms were mainly chlorosis or necrosis/burning. No impact on yield or quality was observed.

These trials were conducted in both the presence and absence of disease and were located across three EPPO zones, in 15 countries over two seasons (2020 – 2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at the proposed rate of 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) can be considered safe to all varieties of winter and spring barley.

Phytotoxicity in rye

Crop phytotoxicity assessments on rye were undertaken in 20 efficacy trials carried out during 2020 and 2021 that have generated data on the efficacy of a single application at BBCH 30-69 of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) against *Rhynchosporium secalis*.

No phytotoxicity caused by A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha), were observed in any of the 20 efficacy trials presented in this dossier. In 3 out of the 20 trials some phytotoxicity was observed with the 2N application rate of A23282A. The observed symptoms were in all trials slight chlorosis with the 2N application rate up to max. 13%.

Overall conclusion

20 efficacy trials were conducted in the presence of disease and were located across two EPPO zones, in five countries over two seasons (2020 – 2021) on a range of commercially grown varieties. Only 3 out of the 20 trials showed some phytotoxicity and only with the 2N application rate. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) can be considered safe to all varieties of winter and spring rye.

Phytotoxicity in triticale

Crop phytotoxicity assessments on triticale were undertaken in all 10 efficacy trials carried out during 2020 and 2021 that have generated data on the efficacy of a single application at BBCH 30-69 of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) against *Zymoseptoria tritici*.

Crop phytotoxicity assessments on triticale were undertaken on two efficacy trials carried out during 2020 and 2021 where no or low disease development was observed following a single application at BBCH 30-69 of A23282A at 2.0 LPR/ha.

Phytotoxicity of >5% on triticale was recorded in one efficacy trial.

No phytotoxicity caused by A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha), were observed in 9 out of the 10 efficacy trials presented in this dossier. In 1 out of the 10 trials slight chlorosis of 7% was observed with the 1N application rate and 9.5% with the 2N application rate of A23282A.

Overall conclusion

Slight phytotoxicity symptoms in triticale caused by a single application of A23282A applied at BBCH 30-69 at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha), were observed in only 1 out of the 10 efficacy trials and in none of the 2 disease free trials reported within this dossier.

These trials were conducted in both the presence and absence of disease and were located across two EPPO zones, in four countries over two seasons (2020 – 2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) can be considered safe to all varieties of winter and spring triticale.

Phytotoxicity in oats

Crop phytotoxicity assessments on oats were undertaken in all six efficacy trials carried out between 2020 and 2021 that have generated data on the efficacy of a single application at BBCH 37-47 of A23282A at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) against *Blumeria graminis*.

Crop phytotoxicity assessments on oats were undertaken on two efficacy trials carried out during 2021 where no or low disease development was observed following a single application at BBCH 37-47 of A23282A at 2.0 LPR/ha.

No phytotoxicity on oats with the 1N application rate of A23282A was recorded in any of the trials. In one trial 12.5% phytotoxicity was observed with the 2N application rate of A23282A.

Phytotoxicity symptoms in oats caused by the double application of A23282A (2N) were observed in only 1 out of the 6 efficacy trials reported within this dossier.

Overall conclusion

These trials were conducted in both the presence and absence of disease and were located across two EPPO zones, in 5 countries over two seasons (2020 – 2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha (cyprodinil 450 gai/ha + prothioconazole 150 gai/ha) can be considered safe to all varieties of winter and spring oats.

Comments of zRMS:	<p>Phytotoxicity to host crop</p> <p>The phytotoxicity assessments on cereals, treated A23282A (Kayak Era) at the rate of 2 L/ha, were undertaken in efficacy trials with diseases and in the trials with no or low symptoms of diseases (1N and 2N rates). The descriptions of the trials on phytotoxicity to cereals and detailed data are presented in Section 3, Efficacy Data and Information - Biological Assessment Dossier.</p> <p>In Central Regulatory Zone the phytotoxicity on winter wheat was evaluated in 97 trials (72 varieties) with diseases and 13 trials (13 varieties) with no diseases or low symptoms of diseases (5 trials in the Maritime zone, 3 in N-E zone and 5 in S-E zone); on barley in 103 trials (57 varieties in winter barley and 14 varieties in spring barley) with diseases and 25 trials (19 varieties) with no or low symptoms of diseases (17 trials in Maritime zone, 5 in N-E zone and 3 in S-E zone); on rye in 20 trials (18 varieties) with diseases, only; on triticale in 10 trials (9 varieties) with diseases, and 2 trials (2 varieties) with no or low symptoms of diseases (1 trial in Maritime zone and 1 trial in N-E zone); on oats in 6 trials (6 varieties) with diseases and 2 trials (2 varieties) with no or low diseases (1 trial in Maritime zone and 1 trial in N-E zone).</p> <p>Crop phytotoxicity assessments on cereal crops, treated with A23282A, were undertaken in the efficacy trials aimed for diseases control, such as: <i>Zymoseptoria tritici</i>, <i>Puccinia recondita</i>, <i>Puccinia striiformis</i>, <i>Erysiphe graminis</i> and Eyespot on wheat, <i>Pyrenophora teres</i>, <i>Rhynchosporium secalis</i>, <i>Ramularia collo-cygni</i>, <i>Puccinia hordei</i> and Eyespot on barley; <i>Rhynchosporium secalis</i> on rye; <i>Zymoseptoria tritici</i> on triticale and <i>Blumeria graminis</i> on oats.</p> <p>All trials were carried out by the contractor companies and official Research Institutes officially recognized for efficacy testing of plant protection products by the authorities of</p>
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	<p>relevant countries, according to GEP, in accordance with EPPO general guidelines: PP 1/135 (4), PP 1/152 (4), PP 1/181 (4), and specific EPPO guidelines: PP 1/026 (4).</p> <p>The phytotoxicity on cereal crops was not observed in the majority of trials and in some trials it has been noted below 5%, wherein these symptoms were temporary and did not effects negatively on the yield and its quality. The phytotoxicity symptoms below 5% can be considered as irrelevant. In some trials the phytotoxicity symptoms exceeded 5%, and they were mainly observed after A23282A application at 2N rate, while in this trials after 1N rate the phytotoxocity was usually below 5%.</p> <p>The data show different response of cereal crops varieties on fungicide A23282A. On some varieties the slight symptoms of phytotoxicity, not exceeding 5%, were noted and these trials can be considered as irrelevant.</p> <p>Wheat. The low phytotoxicity symptoms on wheat caused by A23282A occurred in 21 efficacy trials and in 4 disease free/low disease trials, while in 4 of the 21 efficacy trials and in 1 of the 4 disease free/low disease trials, the phytotoxicity >5% was observed – these symptoms were affected by 2N application rate of A23282A. The phytotoxicity was not found in 76 efficacy trials and 9 trials with no diseases/very low diseases symptoms.</p> <p>Barley. The low phytotoxicity symptoms on barley caused by A23282A occurred in 8 efficacy trials and in 3 disease free/low disease trials, wherein in 5 of the 8 efficacy trials and in 2 of the 3 disease free / low disease trials, the phytotoxicity was >5% and these symptoms were caused by 2N application rate of A23282A. After 1N rate the symptoms were observed in 3 efficacy trials and in 1 disease free / low disease trial. The phytotoxicity was not found in 95 efficacy trials and 22 trials with no diseases / very low diseases symptoms.</p> <p>Rye. The phytotoxicity of A23282A to rye was tested in 20 trials of which in 17 efficacy trials (8 in Maritime zone and 9 in North-East zone) no adverse effects were observed, while in 3 trials the phytotoxicity was over 5%.</p> <p>Triticale. The phytotoxicity of A23282A to triticale was tested in 12 efficacy trials of which in 11 trials (5 in Maritime zone and 7 in North-East zone) no adverse effects were observed, while in 1 trials the phytotoxicity was over 5%.</p> <p>Oats. The phytotoxicity of A23282A to oats was tested in 8 efficacy trials of which in 7 trials (6 in Maritime zone and 2 in North-East zone) no adverse effects were observed, while in 1 trials the phytotoxicity was over 5%.</p> <p>The selectivity trials in N-E zone, on wheat, triticale and oats were conducted only in Poland, and on barley in Poland, Latvia and Lithuania. Taking into account the submitted data, it can be assumed that A23282A is selective and safe to wheat, barley, triticale, rye and oats. ZRMS confirms that the trials were conducted properly and there was no deviations from EPPO guidelines. The level of infestation by pathogens was considered as acceptable to validate the trials. It should be concluded that A23282A at the target dose rate according to the GAP table can be considered safe/selective to wheat, barley, rye, triticale and oats.</p> <p>Conclusion. It can be concluded that submitted data on phytotoxicity of A23282A to cereal crops support its registration in Central Regulation Zone. The number of trials for the entire zone and for individual EPPO zones is sufficient. The registration of A23282A at the rate of 2.0 L/ha, at the growth stages BBCH 30-69 is fully justifiend.</p>
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3.4.2 Effect on the yield of treated plants or plant product (KCP 6.4.2)

Yield of wheat under disease-free conditions

The data presented from 12 trials where no or low levels of disease were observed, collected across the Maritime, South-East and North East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed rate of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) either at the late application timing (BBCH 39-49) or at the early application timing (BBCH 30-33) had no adverse effects on the yield of wheat in the absence of significant levels of disease. The observed yields matched the efficacy of the standards FANDANGO 200EC at 1.5 LPR/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) or FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrafenone). A summary of the data across EPPO climatic zones are presented in Table 3.4-7 for the late application timing and in Table 3.4-8 for the early application timing.

Table 3.4-7: Mean yield of wheat treated with A23282A in absence of disease, summarised across EPPO zones, late application timing (BBCH 39-49).

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield from trials with no or low disease development						
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=4)	92.7	68.9-109.1	104.8	101.7-108.0	104.7	100.9-106.8
South-East (n=3)	55.5	58.9-63.0	100.2	95.5-106.3	99.2	93.6-103.5
North East (n=2)	66.5	55.2-77.7	104.8	104.3-105.2	98.0	96.3-99.6

Table 3.4-8: Mean yield of wheat treated with A23282A in absence of disease, summarised across EPPO zones, early application timing (BBCH 30-33).

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield from trials with no or low disease development								
	Yield (dt/ha)		Yield (% of control)					
Maritime (n=3)	95.2	68.9-103.9	106.1	104.7-106.9	107.1	105.2-109.7	-	
South East (n=2)	60.3	58.9-63.0	99.6	99.1-100	103.0	98.7-107.3	-	
North East (n=2)	66.5	55.2-77.7	105.6	101.6-109.5	103.7	103.4-103.9	-	
Maritime (n=1)	109.1		95.8		-		98.9	
South East (n=1)	41.1		102.2		-		97.3	
North East (n=1)	71.3		107.6		-		99.3	

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) had no adverse effect on wheat yield in the absence of disease.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) for the control of foliar diseases and Eyespot on winter, spring and Durum wheat under a wide range of environmental conditions.

Yield of barley under disease-free conditions

The data presented from 24 trials where no or low levels of disease were observed, collected across the Maritime, South-East and North East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed rate of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) either at the late application timing (BBCH 39-59) or at the early application timing (BBCH 31-33) had no adverse effects on the yield of barley in the absence of significant levels of disease. The observed yields matched the efficacy of the standards FANDANGO 200EC at 1.25 LPR/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin) or FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrafenone). A summary of the data across EPPO climatic zones are presented in Table 3.4-9 for the late application timing and in Table 3.4-10 for the early application timing.

Table 3.4-9: Mean yield of barley treated with A23282A in absence of disease, summarised across EPPO zones, late application timing (BBCH 39-59).

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield from trials with no or low disease development						
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=12)	62.1	39-87.9	106.4	88.3-132.8	106.3	89.8-134.7
South-East (n=1)	56.7		95.7		96.2	
North East (n=4)	73.5	58.2-102.7	108.1	104.1-114.3	104.9	102.2-111.1

Table 3.4-10: Mean yield of barley treated with A23282A in absence of disease, summarised across EPPO zones, early application timing (BBCH 31-33).

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 1.5 LPR/ha		FLEXITY 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield from trials with no or low disease development								
	Yield (dt/ha)		Yield (% of control)					
Maritime (n=8)	60.0	44.8-84.8	109.8	98.8-136.3	108.8	96.2-133.4		
South East (n=2)	49.8	48.4-51.1	98.4	93.1-103.7	101.9	101.2-102.5		
North East (n=4)	73.5	58.2-102.7	103.7	100.4-106.1	102.2	99.8-105.2		
Maritime (n=4)	53.1	46.1-60.6	106.4	101.9-111.2			103.6	99.1-111.1
South East (n=1)	56.7		89.9				90.1	
North East (n=1)	97.2		100.5				101.8	

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) had no adverse effect on barley yield in the absence of disease.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) for the control of foliar diseases and Eyespot on winter and spring barley under a wide range of environmental conditions.

Yield of rye under disease-free conditions

No trials data available.

Yield of triticale under disease-free conditions

The data presented from one trial where no or low levels of disease were observed from the Maritime EPPO climatic zone demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) had no adverse effects on the yield of triticale in the absence of significant levels of disease. The observed yield was increased compared to the efficacy of the standard FANDANGO 200EC at 1.25 l/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin). A summary of the data are presented in Table 3.4-11.

Table 3.4-11: Mean yield of triticale treated with A23282A in absence of disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield from trials with no or low disease development						
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=1)	67.7	-	106.9	-	100.7	-

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) had no adverse effect on yield of triticale in the absence of disease.

The data presented within this section support the proposed label claim of A23282A at 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) for the control of *Zymoseptoria tritici* on winter and spring triticale, under a wide range of environmental conditions.

Yield of oats under disease-free conditions

The data presented from trials where no or low levels of disease were observed (two trials), collected from the Maritime and the North-East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) had no adverse effects on the yield of oats in the absence of significant levels of disease. The observed yields were comparable to those of the standard FANDANGO 200EC at 1.25 l/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin). A summary of the data are presented in Table 3.4-12.

Table 3.4-12: Mean yield of oats treated with A23282A in absence of disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 1.25 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
Mean Yield from trials with no or low disease development						
	Yield (dt/ha)		Yield (% of control)			
Maritime (n=1)	83.1	-	99.5	-	102.7	-
North East (n=1)	33.6	-	100.2	-	101.9	-

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) had no adverse effect on yield of oats in the absence of disease.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 gai/ha cyprodinil + 150 gai/ha prothioconazole) for the control of *Blumeria graminis* on winter and spring oats, under a wide range of environmental conditions.

Comments of zRMS	<u>Yield of cereals from the trials under disease-free conditions</u>
	<p>The cereal crops sprayed A23282A in one treatment at the rate of 2 L/ha, at early term (BBCH 30-33) or late term of application (BBCH 37-49) were harvested and quantity and quality of yield were determined. Concerning the yield and its quality the trials with disease include all trials for efficacy and disease free/low disease trials can be concern as selectivity trials.</p> <p>Wheat. The yield of winter wheat was determined in 12 disease free/low disease trials. In the trials with early application of A23282A (4 trials in Maritime zone, 3 in N-E zone, 3 in S-E zone) and with late application (4 trials in Maritime zone, 2 in N-E zone and 3 in S-E zone) the mean yield was higher than from untreated control and was comparable or higher than the yield of reference product, except the 2 trials in S-E zone and 1 trial in Maritime zone with early application of A23282A, where slight reduction of the yield in comparison to untreated was noted.</p> <p>The positive effect of A23282A on the yield of wheat supports the registration of A23282A in this crop, at proposed label claim of 2 L/ha.</p> <p>Barley. The yield of winter barley was determined in 24 trials with no diseases or low disease infection, sprayed both at early and late term of applications. In the trials with early application of A23282A (12 trials in Maritime zone, 5 trials in N-E zone and 3 trials in S-E zone) and with late application (12 trials in Maritime zone, 4 in N-E zone</p>

	<p>and 1 in S-E zone) the mean yield in Maritime zone and N-E zone was higher than from untreated control and was comparable or higher than the yield of reference product, while in S-E zone the reduction of the yield (1.6-10.1%) both at early and late term of application was observed.</p> <p>The positive effect of A23282A on the yield of barley supports the registration of A23282A in this crop, at proposed label claim of 2 L/ha.</p> <p>Rye. No trials data was submitted by applicant</p> <p>Triticale. The yield of triticale, treated with A23282A at the rate of 2.0 L/ha, was determined in 1 trial carried out in Maritime zone. It was higher both than from untreated control and reference product.</p> <p>The positive effect of A23282A on the yield of triticale confirm that tested fungicide had no adverse effect on the yield of triticale in the absence of disease.</p> <p>Oats. The yield of oats was determined in 1 trial in Maritime zone and 1 trial in N-E EPPO zone. In N-E zone it was comparable to the yield from untreated control and in Maritime zone was slightly lower and was slightly lower than from reference product. It can be concluded that A23282A has no negative effect on the yield of oats.</p> <p>ZRMS confirms / states that A23282A (Kayak Era) has positive impact on the yield of wheat, barley, triticale and oats across all EPPO zones what is a supporting element for intended registration of this fungicide in cereal crops in the Central registration zone.</p>
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3.4.3 Effects on the quality of plants or plant products (KCP 6.4.3)

Quality of wheat under disease-free conditions

The data presented from trials where no or low levels of disease were observed in 11 winter wheat trials, collected across the Maritime, South-East and North East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effects on hectolitre weight, thousand grain weight and protein content of wheat in the absence of significant levels of disease. The observed quality parameters matched the efficacy of the standards FANDANGO 200EC at 1.5 l/ha (150 gai/ha prothioconazole + 150 gai/ha fluoxastrobin) and / or FLEXITY 300SC at 0.5 l/ha (150 gai/ha metrafenone). A summary of the data across EPPO climatic zones are presented in Table 3.4-13 to Table 3.4-18.

Table 3.4-13: Mean hectolitre weight of wheat treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hl)		HLW (% of control)			
Maritime (n=4)	71.3	62.9-77.9	101.8	99.8-103.7	101.8	99.5-104.4
South East (n=3)	76.3	68.1-80.9	100.4	99.9-101.1	99.7	99.0-100.1
North East (n=2)	69.4	68.8-69.9	101.7	101.2-102.1	99.5	97.4-101.5

Table 3.4-14: Mean hectolitre weight of wheat treated with A23282A in absence of disease, summarised across EPPO zones, early application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha		FLEXITY 300SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hl)		HLW (% of control)					
Maritime (n=3)	71.8	62.9-77.9	101.4	100.1-102.2	100.9	99.5-101.8		
South East (n=2)	74.7	63.2-80.9	100.1	100-100.3	100	99.8-100.2		
North East (n=2)	69.4	68.8-69.9	99.5	99-100	100.8	99.7-101.9		
Maritime (n=1)	77.0		99.0				98.3	
South East (n=1)	63.2		100.3				100.3	

Table 3.4-15: Mean thousand grain weight of wheat treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=3)	37.3	33.7-39.5	100.6	95.4-104.9	100.8	99.0-102.8
South East (n=3)	38.0	32.5-43.0	99.7	94.5-105.8	100.2	96.9-103.6
North East (n=2)	32.1	30.2-33.9	99.8	90.0-109.6	100.0	99.3-100.6

Table 3.4-16: Mean thousand grain weight of wheat treated with A23282A in absence of disease, summarised across EPPO zones, early application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha		FLEXITY 300SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)					
Maritime (n=2)	36.6	33.7-39.5	103.9	99.5-108.2	102.1	101.5-102.6		
South East (n=2)	40.8	38.5-43.0	100.5	98.8-102.2	101.2	98.5-103.9		
North East (n=2)	32.1	30.2-33.9	102.0	98.0-105.9	103.2	102.7-103.6		
Maritime (n=1)	50.2		97.6				98.8	
South East (n=1)	42.3		100.3				100.1	

Table 3.4-17: Mean protein content of wheat treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=2)	13.6	13.3-13.9	97.1	97.0-97.1	98.9	97.7-100
South East (n=3)	13.8	12.4-16.4	100.2	95.2-105.1	97.6	88.9-103.8
North East (n=2)	14.9	13.4-16.4	89.9	80.5-99.3	97.4	86.6-108.2

Table 3.4-18: Mean protein content of wheat treated with A23282A in absence of disease, summarised across EPPO zones, early application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha		FLEXITY 300SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)					
Maritime (n=2)	13.6	13.3-13.9	98.5	97.8-99.2	98.2	97.0-99.3		
South East (n=2)	14.5	12.6-16.4	102.6	100.3-104.8	95.4	90.5-100.2		
North East (n=2)	14.9	13.4-16.4	99.7	96.3-103.0	92.7	88.4-97.0		
Maritime (n=1)	10.6		102.4				102.1	
South East (n=1)	9.5		102.1				100.8	

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on wheat quality in the absence of disease.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of foliar diseases and Eyespot on winter, spring and Durum wheat under a wide range of environmental conditions.

Quality of barley under disease-free conditions

The data presented from trials where no or low levels of disease were observed in 24 trials (20 winter barley, 4 spring barley), collected across the Maritime, the South-East and North East EPPO climatic zones, clearly demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effects on hectolitre weight, thousand grain weight and protein content of barley in the absence of significant levels of disease. The observed quality parameters matched the efficacy of the standards FANDANGO 200EC at 1.25 LPR/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin) and / or FLEXITY 300SC at 0.5 LPR/ha (150 gai/ha metrafenone). A summary of the data across EPPO climatic zones are presented in Table 3.4-19 to Table 3.4-24.

Table 3.4-19: Mean hectolitre weight of barley treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hl)		HLW (% of control)			
Maritime (n=11)	59.9	41.1-69.1	101.5	99.7-103.8	101.0	99.1-106.9
South East (n=1)	60.7		100.3		101.2	
North East (n=4)	62.2	58.3-66.2	99.7	96.4-102.2	101.1	99.0-102.9

Table 3.4-20: Mean hectolitre weight of barley treated with A23282A in absence of disease, summarised across EPPO zones, early application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha		FLEXITY 300SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hl)		HLW (% of control)					
Maritime (n=6)	59.5	41.1-69.8	100.1	98.5-100.4	100.6	98.0-102.5		
South East (n=1)	60.7		99.3		97.5			
North East (n=4)	62.2	58.3-66.2	101.4	99.9-102.9	100.6	99.4-102.0		
Maritime (n=2)	67.7	65.6-69.8	100.3	100.1-100.4			97.7	96.7-98.6
South East (n=2)	57.6	54.3-60.8	99.9	99.5-100.3			101.3	100.5-102.0
North East (n=1)	53.8		96.8				100.0	

Table 3.4-21: Mean thousand grain weight of barley treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=11)	46.2	34.3-57.3	101.7	96.2-107.1	100.8	94.5-106.7
South East (n=1)	47.4		102.1		103.8	
North East (n=4)	48.1	44.3-51.3	99.8	96.7-101.6	100.6	98.7-102.8

Table 3.4-22: Mean thousand grain weight of barley treated with A23282A in absence of disease, summarised across EPPO zones, early application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha		FLEXITY 300SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)					
Maritime (n=7)	46.9	34.3-57.3	100.0	94.0-107.6	99.6	93.9-104.4		
South East (n=1)	47.4		109.7		103.0			
North East (n=4)	48.1	44.3-51.3	100.8	99.7-101.2	100.8	99.6-102.4		
Maritime (n=3)	49.6	45.6-53.3	102.0	95.5-106.8			99.9	96.3-102.3
South East (n=1)	37.6		98.6				101.0	
North East (n=1)	44.8		96.7				99.3	

Table 3.4-23: Mean protein content of barley treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=10)	12.1	10.2-16.9	100.2	83.8-114.7	99.5	89.9-105.9
South East (n=1)	12.0		91.0		92.4	
North East (n=4)	11.9	11.3-12.6	100.8	98.8-103.5	101.9	98.4-107.3

Table 3.4-24: Mean protein content of barley treated with A23282A in absence of disease, summarised across EPPO zones, early application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha		FLEXITY 300SC 0.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)					
Maritime (n=5)	11.7	10.2-13.9	98.4	92.7-102.9	99.0	95.1-105.9		
South East (n=1)	12.0		95.0		99.4			
North East (n=4)	11.9	11.3-12.6	99.1	98.1-99.6	99.9	98.5-101.3		
Maritime (n=2)	12.6	12.3-12.8	96.6	92.7-100.4			95.0	93.5-96.5
South East (n=2)	11.0	9.6-12.3	95.7	91.5-99.8			97.5	94.5-100.4
North East (n=1)	10.4		103.8				95.2	

Overall conclusion

In conclusion, the data summarized across EPPO climatic zones confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on barley quality in the absence of disease.

The data presented within this section fully support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of foliar diseases and Eyespot on winter and spring barley under a wide range of environmental conditions.

Quality of rye under disease-free conditions

No data available

Quality of triticale under disease-free conditions

The data presented from one disease free rial conducted in the Maritime EPPO climatic zone, demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effects on hectolitre weight, thousand grain weight and protein content of triticale in the absence of significant levels of disease. The observed quality parameters matched the efficacy of the standards FANDANGO 200EC at 1.5 LPR/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin). A summary of the data are presented in Table 3.4-25, Table 3.4-26 and Table 3.4-27.

Table 3.4-25: Mean hectoltre weight of triticale treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)			
Maritime (n=1)	61.9		100.7		101.0	

Table 3.4-26: Mean thousand grain weight of triticale treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=1)	39.4		97.9		99.4	

Table 3.4-27: Mean protein content of triticale treated with A23282A in absence of disease, summarised across EPPO zones, late application.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=1)	10.7		101.4		100.8	

Overall conclusion

In conclusion, the data summarized from one triticale trial confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on triticale quality in the absence of disease.

The data presented within this section support the proposed label claim of A23282A at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) for the control of *Zymoseptoria tritici* on winter and spring triticale under a wide range of environmental conditions.

Quality of oats under disease-free conditions

The data presented from two disease free trials conducted in the Maritime and the North-East EPPO climatic zones, demonstrated that plots treated with A23282A at the proposed dose of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effects on hectolitre weight, thousand grain weight and protein content of oats in the absence of significant levels of disease. The observed quality parameters matched the efficacy of the standards FANDANGO 200EC at 1.5 LPR/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin). A summary of the data are presented in Table 3.4-28, Table 3.4-29 and Table 3.4-30.

Table 3.4-28: Mean hectolitre weight of oats treated with A23282A in absence of disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	HLW (kg/hL)		HLW (% of control)			
Maritime (n=1)	48.5		100.1		99.7	
North East (n=1)	50.8		100.4		99.8	
Mean across zones (n=2)	49.7		100.3		99.7	

Table 3.4-29: Mean thousand grain weight of oats treated with A23282A in absence of disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	TGW (g)		TGW (% of control)			
Maritime (n=1)	30.3		101.2		98.5	
North East (n=1)	33.8		103.8		103.6	
Mean across zones (n=2)	32.1		102.5		101.1	

Table 3.4-30: Mean protein content of oats treated with A23282A in absence of disease, summarised across EPPO zones.

EPPO climatic zone	Untreated		A23282A 2.0 LPR/ha		FANDANGO 200 EC 1.5 LPR/ha	
	Mean	min-max	Mean	min-max	Mean	min-max
	Protein content (%)		Protein content (% of control)			
Maritime (n=1)	12.7		99.1		100	
North East (n=1)	14.8		102.4		102.4	
Mean across zones (n=2)	13.8		100.8		101.2	

Overall conclusion

In conclusion, the data summarized from two oats trials confirmed that A23282A applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on oats quality in the absence of disease.

<p>Comments of zRMS</p>	<p><u>Effects on the quality of plants or plant products</u></p> <p>After harvest the grain yield of cereals and its quality were determined. The evaluation of grain yield quality included: thousand grain weight (TGW), hectolitre weight (HLW) and protein content. These parameters were determined in wheat, barley, triticale and oats treated with A23282A (Kayak Era) at the rate of 2 L/ha, at early term (BBCH 30-33) and late term of application (BBCH 37-49).</p> <p>Quality of wheat under disease-free conditions</p> <p>The quality of winter wheat yield was determined in 11 disease free/low disease trials, collected across the Maritime, South-East and North East climatic zones. In most of trials the parameters were higher than from untreated control. Slightly lower HLW values, compared to untreated control, were recorded only in 1 trial in N-E zone and in 1 trial in Maritime zone, at early term of application, while TGW values were slightly lower in N-E and S-E zones at late term of application, and in 1 trial in Maritime zone at early application, where the TGW reduction was 2.4%.</p> <p>The protein content in the seeds was variable, in most trials it was comparable or higher than in the untreated control, wherein in the Maritime and N-E zones at late application and in Maritime zone at early application was slightly lower. The lowest protein content was obtained in N-E zone, at late application, where the reduction was 10.1%. The differences in protein content, except 1 trial, were not significant to conclude that A23282A has a negative impact on wheat grain quality. It should be underline that protein content depends not only from the effective diseases control, but also from various agrotechnical factors.</p> <p>ZRMS states that it can be assumed that A23282A has no negative impact on the quality of wheat grain.</p> <p>Quality of barley under disease-free conditions</p> <p>The quality of winter barley yield was determined in 24 trials (20 in winter barley, 4 in spring barley), collected across the Maritime, South-East and North East EPPO climatic zones. The HLW values in the most trials were similar to untreated control, in both terms of application, while for TGW the increasing tendency after A23282A application, especially at late term of application was noted. The lowest HLW and TGW values were obtain in 1 trial in N-E zone, at early term of application (HLW reduction 3.2% and TGW 3.3%, in comparison to untreated control), while the highest TGW value was obtained in S-E zone, at early term of application.</p> <p>The protein content in the seeds was variable, in some trials it was comparable to the untreated control and reference product and in most of trials the slight reduction was obtained. The lowest value of protein content in 1 trial in S-E zone was noted. It should be underline that protein content depends not only from the effective diseases control, but also from various agrotechnical factors.</p> <p>ZRMS states that it can be assumed that A23282A has no negative impact on the quality of barley grain.</p> <p>Quality of triticale under disease-free conditions</p> <p>The quality of triticale yield was determined in 1 trial carried out in Maritime EPPO climatic zone. The HLW value and protein content were similar to untreated control and reference product, and TGW was slightly lower both to untreated control (reduction 2.1%) and reference product.</p> <p>ZRMS states that it can be assumed that A23282A has no negative impact on the quality of triticale grain.</p> <p>Quality of oat under disease-free conditions</p>
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	<p>The quality of oats yield was determined in 1 trial carried out in Maritime EPPO zone and 1 trial in N-E climatic zone. The HLW and TGW values were higher than in untreated control and reference product, while the protein content was higher in the trial conducted in N-E zone and was slightly lower than from untreated control (reduction 0.9%) and reference product.</p> <p>ZRMS states that it can be assumed that A23282A has no negative impact on the quality of oats grain.</p> <p>Conclusion. The results of presented data show that the effect of A23282A on the quality of wheat, barley, triticale and oat crops is not significant. In most studies, it does not have a negative effect, and in many experiments it has a beneficial effect on HLW, TGW or protein content. No negative impact on the quality of cereal crops is an important argument for A23282A registering in the tested crops. A large number of studies for wheat and barley allows to draw conclusions justifying the registration, while in the case of triticale and oats, the number of studies is small and cMS should decide whether they can positively assess the effect of A23282A on the quality of cereal crops. No results were provided for rye, so possible registration should be based on recognition of results from other cereal species or decide to register as a minor use.</p>
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3.4.4 Effects on transformation processes (KCP 6.4.4)

Products containing cyprodinil and prothioconazole, either in co-formulations or as the sole active ingredient, have been approved and extensively used as fungicides in a range of different crop types, including cereals, across Europe and worldwide for many years and are proven to have no adverse effects on any relevant transformation processes when applied at approved label rates on cereals.

Furthermore, the data presented within this dossier demonstrated that A23282A caused no significant phytotoxicity or adverse effects on crop yield or grain quality of the harvested produce (hectolitre weight, thousand grain weight, protein content) in any of the trials on cereals in both the presence and absence of disease.

Therefore, the applicant believes that further studies to evaluate possible effects on cereal processing procedures are not required within this submission. Therefore, no results from specific studies are submitted.

Conclusion

A23282A applied at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) and applied according to label recommendations on cereals would not be expected to have an adverse effect on relevant transformation processes.

Comments of zRMS	<p>Effects on transformation processes</p> <p>ZRMS agree with applicant that A23282A application according to the label recommendations on cereals would not be expected to have an adverse effect on relevant transformation processes. The justification is the long-term use of fungicides containing cyprodinil and prothioconazole, either in co-formulations or as the single active substance in Europe and in the world, where no clear adverse effects on any relevant transformation processes were observed.</p>
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3.4.5 Impact on treated plants or plant products to be used for propagation (KCP 6.4.5)

Wheat propagation tests

Post-harvest germination tests were undertaken from 19 winter wheat and 1 spring wheat efficacy trials and no / low disease trials for which data have been previously presented. The trials were conducted during 2020 and 2021 in France, Germany, Hungary, Slovenia, Latvia, Lithuania and Poland covering the Maritime, South-East and North-East EPPO zones. Within the trials A23282A at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) was applied as a foliar spray between BBCH 30-69. The objective was to confirm the absence of negative effects on propagating material following treatment with A23282A. The results were compared to those of the standard FANDANGO at 1.5 LPR/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin).

Seed germination tests were undertaken according to standard methodologies approved by the International Seed Testing Association (ISTA).

For the 19 winter wheat and 1 spring wheat results a single application of A23282A at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on the germination of wheat seedlings when compared to the untreated control.

The detailed results are shown for winter wheat in Table 3.4-31 and for spring wheat in Table 3.4-32.

The data also demonstrated that there was no difference in the percentage germination of A23282A treated wheat seed across the Maritime, South-East and North East EPPO climatic zones.

Conclusion

A23282A applied at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) and according to the label recommendations on wheat would not be expected to have an adverse impact on treated plants.

Table 3.4-31: Germination test results for A23282A treated winter wheat seed

CROP: WINTER WHEAT Assessment data Type: SEED - GERMINATED Unit: GERMINATION, %						Product Name Product Rate Appl. Timing Active Ingredient Active Ingredient rate		CHECK		A23282 [A] 2 l/ha POEMCR CYPRODINIL PROTHIOCONAZOLE			FANDANGO 200 EC 1.5 l/ha POEMCR PROTHIOCONAZOLE FLUOXASTROBIN		
EPPO zone	Trial reference number	Variety	Application Date(s)	Crop GS at applic.	Assessment date	Days after last applic.	Crop GS at asse. - maj. (min - max)	Mean	SNK	Mean	SNK	% of control	Mean	SNK	% of control
Maritime	DEDSZF2832020	Akteur	20-May-20	39 (39 - 45)	11-Nov-20	175	99 (99 - 99)	95		94		98,9	96,8		101,8
Maritime	DEDSZF2882020	Tobak	22-May-20	39 (39 - 45)	25-Nov-20	187	99 (99 - 99)	94,6	a	96,4	a	101,8	96,2	a	101,7
Maritime	DEDSZF3492021	Asory	08-Jun-21	49 (45 - 51)	22-Oct-21	136	99 (99 - 99)	100		99		99	99		99
Maritime	DEDSZF3712020	Toras	22-May-20	41 (39 - 41)	18-Jan-21	241	99 (99 - 99)	93		92		98,9	95		102,2
Maritime	DEDSZF3722020	Eltana	22-May-20	45 (45 - 45)	18-Jan-21	241	99 (99 - 99)	91		95		104,4	95		104,4
Maritime	DEDSZF4042020	Akteur	19-May-20	39 (39 - 43)	19-Nov-20	184	99 (99 - 99)	87,4	a	92,7	a	106,1	93,6	a	107,1
Maritime	DEDSZF9312020	Genius	20-May-20	39 (37 - 41)	10-Nov-20	174	99 (99 - 99)	96,3		96,8		100,5	94,6		98,2
South-East	HUHUZF2092020	Mv Buzogány	07-May-20	43 (39 - 47)	15-Jul-20	69	99 (99 - 99)	99		99		100	98		99
South-East	HUHUZF2102020	Cellule	13-May-20	49 (47 - 51)	08-Aug-20	87	99 (99 - 99)	91		90		98,9	91		100
South-East	SIHZZF0252020	Energo	18-May-20	49 (47 - 51)	11-Sep-20	116	89 (89 - 89)	98		96		98	98		100
South-East	SIKIZF0102020	Vulkan	30-Apr-20	37 (37 - 39)	29-Sep-20	152	99 (99 - 99)	49		49,7		101,5	49		100
South-East	SILJZF6322021	Vulkan	20-May-21	49 (49 - 51)	15-Oct-21	148	89 (89 - 92)	98		98		100	96		98
North-East	LTAKZF7812021	Malibu	14-May-21	32 (31 - 32)	14-Sep-21	123	99 (99 - 99)	95,3	a	97,2	a	102,1	94,8	a	99,5
North-East	LTAKZF7842021	Etana	19-May-21	32 (31 - 32)	27-Sep-21	131	99 (99 - 99)	96,2	a	95,9	a	99,7	98,3	a	102,3
North-East	LVRIZF7822021	SKAGEN	28-Apr-21	31 (31 - 32)	17-Aug-21	111	99 (99 - 99)	95,1	a	97,9	a	102,9	97	a	102,1

CROP: WINTER WHEAT Assessment data Type: SEED - GERMINATED Unit: GERMINATION, %						Product Name Product Rate Appl. Timing Active Ingredient Active Ingredient rate		CHECK		A23282 [A] 2 l/ha POEMCR CYPRODINIL PROTHIOCONAZOLE			FANDANGO 200 EC 1.5 l/ha POEMCR PROTHIOCONAZOLE FLUOXASTROBIN		
EPPO zone	Trial reference number	Variety	Application Date(s)	Crop GS at applic.	Assessment date	Days after last applic.	Crop GS at asse. - maj. (min - max)	Mean	SNK	Mean	SNK	% of control	Mean	SNK	% of control
North-East	PLDSZF7172020	Emil	11-May-20	37 (37 - 39)	06-Nov-20	179	99 (99 - 99)	95,8		95,2		99,5	95,7		100
North-East	PLDSZF7262020	Patras	21-May-20	45 (45 - 49)	19-Nov-20	182	99 (99 - 99)	94,1	a	93,9	a	99,7	93,1	a	98,9
North-East	PLDSZF7282020	Avenue	13-May-20	45 (41 - 49)	06-Nov-20	177	99 (99 - 99)	92,5	b	93,2	b	100,7	96,8	a	104,6
North-East	PLUBZF1012020	FORMACJA	28-May-20	49 (47 - 49)	31-Aug-20	95	99 (99 - 99)	96,9	a	95,4	a	98,5	97,4	a	100,5

N =19	MEAN
	MIN
	MAX

92,5		93,0		100,6	93,4		101,0
49,0		49,7		98,0	49,0		98,0
100,0		99,0		106,1	99,0		107,1

Table 3.4-32: Germination test results for A23282A treated spring wheat seed

CROP: SPRING WHEAT Assessment data Type: SEED - GERMINATED Unit: GERMINATION, %					Product Name Product Rate Appl. Timing Active Ingredient Active Ingredient rate		CHECK UNTREATED		A23282 [A] 2 l/ha			FANDANGO 200 EC 1.5 l/ha		
									CYPRODINIL PROTHIOCONAZOLE			PROTHIOCONAZOLE FLUOXASTROBIN		

Trial reference number	Variety	Application Date(s)	Crop GS at applic.	Assessment date	Days after last applic.	Crop GS at asse. - maj. (min - max)	Mean	SNK	Mean	SNK	% of control	Mean	SNK	% of control
LTAKZF7262021	KWS Mistral	22-Jun-21	51 (47 - 51)	29-Oct-21	129	99 (99 - 99)	98,2	a	98,2	a	100	99,5	a	101,3

N =2	MEAN
	MIN
	MAX

95,4		92,9		97,3	94,9		99,5
92,5		87,6		94,6	90,3		97,6
98,2		98,2		100,0	99,5		101,3

Barley propagation tests

Post-harvest germination tests were undertaken from 22 of the efficacy trials and no / low disease trials for which data have been previously presented. The trials were conducted in 7 countries covering the Maritime, South-East and North-East EPPO zones. Within the trials A23282A at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) was applied as a foliar spray between BBCH 30-59. The objective was to confirm the absence of negative effects on propagating material following treatment with A23282A. The results were compared in all trials to those of the standard FANDANGO at 1.5 LPR/ha (125 gai/ha prothioconazole + 125 gai/ha fluoxastrobin).

Seed germination tests were undertaken according to standard methodologies approved by the International Seed Testing Association (ISTA). Percentage seed germination data are

Across the 22 results, a single application of A23282A at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) had no adverse effect on the germination of barley seedlings when compared to the untreated control.

The detailed results are shown in Table 3.4-33.

The data also demonstrated that there was no difference in the percentage germination of A23282A treated barley seed across the Maritime, South-East and North East EPPO climatic zones.

Conclusion

A23282A applied at a rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) and according to the label recommendations on barley would not be expected to have an adverse impact on treated plants or plant products to be used for propagation.

Table 3.4-33: Germination test results for A23282A treated barley seed

CROP: BARLEY Assessment data Type: SEED - GERMINATED Unit: GERMINATION, %						Product Name Product Rate Appl. Timing Active Ingredient		CHECK OVERSPRAY		A23282 [A] 2 l/ha PREVEN CYPRODINIL PROTHIOCONAZOLE			FANDANGO 200 EC 1.25 l/ha PREVEN PROTHIOCONAZOLE FLUOXASTROBIN		
EPPO Zone	Trial reference number	Variety	Application Date(s)	Crop GS at applic.	Assessment date	Days after last applic.	Crop GS at asse. - maj. (min - max)	Mean	SNK	Mean	SNK	% Control	Mean	SNK	% Control
Maritime	DEDSZF1582020	LOMERIT	06-May-20	43 (37 - 49)	09-Nov-20	187	99 (99 - 99)	74,2		78		105,1	77		103,7
Maritime	DEDSZF1902020	KETOS	04-May-20	49 (45 - 49)	28-Oct-20	177	99 (99 - 99)	84		75		89,3	80		95,2
Maritime	DEDSZF3752020	LOMERIT	28-Apr-20	37 (37 - 39)	15-Jan-21	262	99 (99 - 99)	66		85		128,8	68		103
Maritime	DEDSZF5252020	CALIFORNIA	24-Apr-20	51 (39 - 51)	01-Feb-21	283	99 (99 - 99)	94,1	a	95,6	a	101,7	96,9	a	103
Maritime	NLCUZF8582021	RAFFAELA	20-May-21	41 (39-41)	20-May-21	179	99 (99 - 99)	97		96		99	100		103,1
South-East	HRATZF0012020	HANNELORE	24-Apr-20	39 (39 - 45)	17-Aug-20	115	99 (99 - 99)	93		96		103,2	96		103,2
South-East	HRATZF0022020	BARUN	20-Apr-20	49 (49 - 51)	10-Aug-20	112	99 (99 - 99)	97		91		93,8	95		97,9
South-East	HUHUZF2112020	JAKUBUS	24-Apr-20	39 (39 - 39)	30-Jul-20	97	99 (99 - 99)	87		86		98,9	87		100
South-East	BGEUZF2362020	OBZOR	09-May-20	45 (43 - 47)	05-Aug-20	88	99 (99 - 99)	89	e	97,5	b	109,6	96	c	107,9
South-East	SIHGF0212020	CONCORDIA	13-May-20	49 (47 - 51)	09-Jul-20	57	89 (89 - 89)	78		67		85,9	63		80,8
South-East	SIKIZF0012020	SANDRA	30-Apr-20	45 (45 - 47)	23-Sep-20	146	99 (99 - 99)	99		98		99	97		98
North-East	PLDSZF5052020	BARACUDA	10-May-20	51 (49 - 51)	01-Sep-20	114	99 (99 - 99)	71		88		123,9	75		105,6
North-East	PLDSZF7242020	WOOTAN	08-May-20	49 (49 - 51)	29-Oct-20	174	99 (99 - 99)	66,8	a	67,9	a	101,6	70,5	a	105,6
North-East	PLSGZF1022020	KAYLIN	27-Apr-20	39 (37 - 39)	21-Jul-20	85	99 (99 - 99)	83,3	b	99,1	a	119,1	97,5	a	117,1
North-East	PLSOZF1062020	SCARPIA	20-Apr-20	33 (33 - 33)	24-Aug-20	126	99 (99 - 99)	68		75		110,3	72		105,9

CROP: BARLEY Assessment data Type: SEED - GERMINATED Unit: GERMINATION, %						Product Name Product Rate Appl. Timing Active Ingredient		CHECK OVERSPRAY		A23282 [A] 2 l/ha PREVEN CYPRODINIL PROTHIOCONAZOLE			FANDANGO 200 EC 1.25 l/ha PREVEN PROTHIOCONAZOLE FLUOXASTROBIN		
EPPO Zone	Trial reference number	Variety	Application Date(s)	Crop GS at applic.	Assessment date	Days after last applic.	Crop GS at asse. - maj. (min - max)	Mean	SNK	Mean	SNK	% Control	Mean	SNK	% Control
North-East	PLSOZF1082020	BAZANT	20-Apr-20	33 (33 - 33)	24-Aug-20	126	99 (99 - 99)	79		84,2		106,5	85		107,6
North-East	PLULZF1042020	SU VIRENI	07-May-20	41 (39 - 41)	20-Jul-20	74	97 (97 - 99)	20,5	a	18,9	a	92,4	27,8	a	135,4
North-East	PLULZF1052020	ZENEK	10-May-20	45 (43 - 47)	10-Jul-20	61	97 (97 - 99)	91	a	91,3	a	100,3	65,2	b	71,7
North-East	PLUPZF1112020	ZENEK	08-May-20	45 (43 - 47)	27-Aug-20	111	99 (99 - 99)	77,8	a	91,5	a	117,7	90,3	a	116,1
North-East	PLUPZF1122020	ROSITA	08-May-20	45 (43 - 47)	27-Aug-20	111	99 (99 - 99)	90,4	b	95	a	105,2	95,5	a	105,7
North-East	PLUPZF1192020	KOBUZ	20-May-20	51 (49 - 55)	28-Aug-20	100	99 (99 - 99)	89,8	b	96,1	a	107,1	95	a	105,9
North-East	PLUPZF1202020	GLORIA	04-May-20	43 (41 - 45)	28-Aug-20	116		89,8	b	94,1	a	104,8	93,8	a	104,4

N =22	MEAN
	MIN
	MAX

81,2		84,8		104,7	82,9		103,5
20,5		18,9		85,9	27,8		71,7
99,0		99,1		128,8	100,0		135,4

Rye propagation tests

No data available for this section

Triticale propagation tests

No data available for this section

Oats propagation tests

No data available for this section

	<p><u>Impact on treated plants or plant products to be used for propagation</u></p> <p>The impact of A23282A on propagating material was determined on the base of post-harvest germination tests of seeds, collected from 19 efficacy trials carried out in winter wheat, 1 trial carried out in spring wheat, and from 22 from barley, all disease free/low disease. In the tests the germination of normal seeds was determined.</p> <p>In wheat, in some tests the seeds germinating was higher in comparison to untreated control and reference product, and in some tests was similar or lower, but the differences were minor. Only in 1 trial in S-E zone the germination of wheat seeds was very low (49.7%), but it seems that the reasons of it were different than the impact of tested fungicide. Applicant did not explain the reasons.</p> <p>The barley seeds germination was much lower than wheat seeds germination and results were varied. The germination ranged from 67 to 97%, while in 1 trial in Poland was even 18.9%, wherein the reason of such high decreasing the level of germination was not explain.</p> <p>The germination tests of rye, triticale and oats were not performed.</p> <p>In can be concluded that A23282A had no adverse effect on the germination of the harvested wheat and barley seeds.</p> <p>ZRMS agree with applicant that A23282A application on cereals, according to the label recommendations would not be expected to have an adverse effect on relevant propagation of cereal crops.</p>
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3.4.6 Summary and conclusion

Phytotoxicity symptoms in wheat caused by a single application of A23282A, applied at BBCH 30-69 at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole), were only observed in 17 of the 97 efficacy trials and in 1 of the 13 disease free or low disease trials reported within this dossier. In all trials phytotoxicity was <15%. In most of the trials where phytotoxicity occurred, symptoms were either transient or considered acceptable by the trialist. The symptoms varied between trials, but took the form of either chlorosis, necrosis, burning or general discoloration. No adverse impact on wheat yield or quality were observed. Trials were conducted in both the presence and absence of disease and were located across four EPPO zones, in 14 countries over two seasons (2020–2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha can be considered safe to all varieties of winter, spring and durum wheat.

Phytotoxicity symptoms in barley caused by a single application of A23282A, applied at BBCH 30-59 at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole), were only observed in 3 of the 103 efficacy trials and in 1 of the 25 disease free or low disease trials reported within this dossier. The most frequent symptoms were chlorosis or necrosis/burning. In the majority of these trials the symptoms were transient and had no negative impact on the barley yield. Trials were conducted in both the presence and absence of disease and were located across four EPPO zones, in 15 countries over two seasons (2020–2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha can be considered safe to all varieties of winter and spring barley.

Phytotoxicity symptoms in rye caused by a single application of A23282A, applied at BBCH 30-69 at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole), were not observed in any of the 20 efficacy trials reported within this dossier. No impact on yield or quality was observed. Trials were conducted in both the presence and absence of disease and were located across two EPPO zones, in 5 countries over two seasons (2020–2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha can be considered safe to all varieties of winter and spring rye.

Phytotoxicity symptoms in triticale caused by a single application of A23282A, applied at BBCH 30-69 at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole), were only observed in 1 of the 10 efficacy trials and in none of the two disease free or low disease trials reported within this dossier. No impact on yield or quality was observed. Trials were conducted in both the presence and absence of disease and were located across two EPPO zones, in 4 countries over two seasons (2020–2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha can be considered safe to all varieties of winter and spring triticale.

Phytotoxicity symptoms in oats caused by a single application of A23282A, applied at BBCH 30-59 at 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole), were not observed neither in the 6 efficacy trials nor in the two disease free or low disease trials reported within this dossier. No impact on yield or quality was observed. Trials were conducted in both the presence and absence of disease and were located across two EPPO zones, in 5 countries over two seasons (2020–2021) on a range of commercially grown varieties. Therefore, it can be concluded that A23282A applied at 2.0 LPR/ha can be considered safe to all varieties of winter and spring oats.

Regarding quality and yield in absence of disease, the presented data demonstrated that A23282A, applied at the proposed label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole), had no adverse effect on the yield, hectolitre weight, thousand grain weight and percentage protein content of wheat, barley, rye, triticale and oats in the absence of significant levels of disease.

A23282A applied at the proposed maximum label rate of 2.0 LPR/ha (450 g/ha cyprodinil and 150 g/ha prothioconazole) and according to other label recommendations would not be expected to have any adverse impact on treated plants or plant products to be used for propagation.

3.5 Observations on other undesirable or unintended side-effects (KCP 6.5)

3.5.1 Impact on succeeding crops (KCP 6.5.1)

Practical use of cyprodinil and prothioconazole as a foliar application on a wide range of crops since their introduction into the market, have demonstrated that within the scope of normal crop rotation no issues are expected with succeeding crops.

In addition, within document Part B, Section 9 IIIA 9.10 *Effects on non-target terrestrial plants* (KCP 10.6) data were summarized from a seedling emergence test originally conducted for assessing the risk to non-target plants. A summary of the data is presented here to conclude on the risk for succeeding crops.

The effects on seedling emergence of A23282A on six higher plant species (onion, wheat, sugar beet, oilseed rape, cucumber and soybean) were examined at six application rates over the range 62.5 – 2000 mL A23282A/ha as well as an untreated control (deionized water only). The test plants were sown directly into pots and covered with soil. Immediately after sowing, the surface applications were made by spraying onto the soil. Visual phytotoxicity ratings were recorded 28 days after application. Evaluation of phytotoxicity was done by visual observations and recording 0% to 100% inhibition of emergence or plant injury using a rating scale.

No phytotoxic effects on seedling emergence were observed in any of the plant species at application rates up to and including the highest rate of 2000 mL A23282A/ha. A copy of the results are presented in Table 3.5-1.

Table 3.5-1: Effect of A23282A on seedling emergence

Test species	Application rate (mL A23282A/ha)						
	0 (deionized water only)	62.5	125	250	500	1000	2000
Onion (<i>Allium cepa</i>)	0	0	0	0	0	0	0
Wheat (<i>Triticum aestivum</i>)	0	0	0	0	0	0	0
Sugar Beet (<i>Beta vulgaris</i>)	0	0	0	0	0	0	0
Oilseed Rape (<i>Brassica napus</i>)	0	0	0	0	0	0	0
Cucumber (<i>Cucumis sativus</i>)	0	0	0	0	0	0	0
Soybean (<i>Glycine max</i>)	0	0	0	0	0	0	0

Scale from 0 to 100: 0 = vigorous healthy plants, indistinguishable from the untreated control; 50% = estimated 50% injury; 100% = complete destruction of above ground parts. Data given are the average of three replicates, rounded to the nearest whole number.

At all of the application rates of A23282A tested, no effect was observed on seedling emergence of any of the exposed species. Treatments to cereal crops will be applied between BBCH 30-69, which is around the period of stem extension until the end of flowering. Exposure rates for succeeding crops will therefore be substantially smaller than the maximum dose tested in this study. These data support the conclusion that the proposed use of A23282A does not pose a risk to succeeding crops.

Conclusion

A23282A was tested on Onion, Wheat, Sugar Beet, Oilseed Rape, Cucumber and Soybean. No effects were observed on seedling emergence with any of the six plant species, up to and including an application rate of 2000 mL A23282A/ha. A23282A does not pose a risk to succeeding crops and justifies the recommendation of no restrictions on succeeding crops when applying A23282A.

Comments of zRMS	<p>Impact on succeeding crops</p> <p>The applicant presented the results of pot tests on seedling emergence of six higher plant species (onion, wheat, sugar beet, oilseed rape, cucumber and soybean), in which A23282A at the rate of 62.5–2000 mL/ha was applied on the soil surface, immediately after sowing the seeds of tested crops. The plant species selected for the tests belong to different botanical groups, are often cultivated in rotation, and, moreover, the cucumber is a very sensitive crop to plant protection products. The crops choice for the test was right and the test was performed correctly.</p> <p>The tests did not show any phytotoxicity on the crops tested for replanting crops, following a field failure of a crop treated with A23282A. ZRMS agrees with the applicant's conclusion that "A23282A does not pose a risk to succeeding crops and justifies the recommendation of no restrictions on succeeding crops when applying A23282A".</p> <p>ZRMS agree with applicant that is no necessity for restrictions in the choice of succeeding crops.</p>
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3.5.2 Impact on other plants including adjacent crops (KCP 6.5.2)

No specific assessments of non-target plants were taken in the efficacy trials. However, no adverse effects were noted when visual observations were made within these field trials sites. Due to the excellent selectivity of A23282A and the wide registration of cyprodinil and prothioconazole on a wide range of crops as solo products or in co-formulations, no negative impacts on adjacent crops can be expected if the product is applied according to label recommendations. Therefore, no specific trials on adjacent crops are presented in this section.

Risk from spray drift during application

Potentially spray drift is a major transfer mechanism during the application of a formulation. However, the formulation will be applied by trained operators through adherence to good agricultural practices and according to the recommendations on the label. This will minimise the potential for spray drift and therefore under normal application conditions the contamination of a crop adjacent to the treated crop by spray drift is likely to be minimal.

Risk from direct exposure

Within document Part B, Section 9 IIIA 9.10 *Effects on non-target terrestrial plants* (KCP 10.6) data were summarized from a vegetative vigour test originally conducted for assessing the risk to non-target plants. A summary of the data is presented here to conclude on the risk for other plants including adjacent crops.

The effects on vegetative vigour of A23282A on six higher plant species (onion, wheat, sugar beet, oilseed rape, cucumber and soybean) were examined at six application rates over the range 62.5 – 2000 mL A23282A/ha as well as an untreated control (deionized water only). The seeds of the test plants were sown into seed trays and transplanted into pots shortly after emergence. The spray application to the plants was performed at the 2-4 true leaf stage (BBCH 12-14). Visual phytotoxicity ratings were recorded 21 days after application. Evaluation of phytotoxicity was done by visual observations and recording 0% to 100% inhibition of emergence or plant injury using a rating scale.

A copy of the results are presented in Table 3.5-2.

Table 3.5-2: Effect of A23282A on vegetative vigour

Test species	Application rate (mL A23282A/ha)						
	0 (deionized water only)	62.5	125	250	500	1000	2000
Onion (<i>Allium cepa</i>)	0	0	0	0	0	0	0
Wheat (<i>Triticum aestivum</i>)	0	0	0	0	0	0	0
Sugar Beet (<i>Beta vulgaris</i>)	0	0	0	5	10	22	32
Oilseed Rape (<i>Brassica napus</i>)	0	0	0	0	0	0	12
Cucumber (<i>Cucumis sativus</i>)	0	0	0	0	0	7	25
Soybean (<i>Glycine max</i>)	0	0	0	0	5	23	30

Scale from 0 to 100: 0 = vigorous healthy plants, indistinguishable from the untreated control; 50% = estimated 50% injury; 100% = complete destruction of above ground parts. Data given are the average of three replicates, rounded to the nearest whole number.

Onion (*Allium cepa*) and wheat (*Triticum aestivum*) did not show any phytotoxic effects up to and including 2000 mL A23282A/ha. Sugar beet was the most sensitive species showing slight phytotoxic effects starting at 250 mL A23282A/ha up to and including 2000 mL A23282A/ha. Soybean (*Glycine max*) showed slight phytotoxic effects at 500, 1000 and 2000 mL A23282A/ha. Cucumber (*Cucumis sativus*) showed slight phytotoxic effects at 1000 and 2000 mL A23282A/ha. Oilseed rape (*Brassica napus*) showed slight phytotoxic effects at the top rate of 2000 mL A23282A/ha.

Conclusion

A23282A was tested on Onion, Wheat, Sugar Beet, Oilseed Rape, Cucumber and Soybean. Less than 50% effect on vegetative vigour on all six species was observed at the maximum proposed field application rate in cereals of 2000 mL A23282A/ha. This indicates that the risk to non-target terrestrial plants in off-crop areas is acceptable following use of A23282A according to the proposed use pattern.

It can be concluded that A23282A does not pose a risk to other plants, including adjacent crops and justifies the recommendation of no restrictions on adjacent crops when applying A23282A.

Comments of zRMS	<u>Impact on other plants including adjacent crops</u>
	<p>The tests on vegetative vigour carried out on 6 plant species (onion, wheat, sugar beet, oilseed rape, cucumber and soybean) have shown that A23282A used at the rate of 62.5–2000 mL/ha can cause phytotoxicity symptoms on some adjacent crops. The phytotoxicity symptoms occurred on sugar beet after using the rate of 250 mL/ha, on soybean after 500 mL/ha, on cucumber after 1000 mL/ha and on oilseed rape after 2000 mL/ha. The resistant were onion and wheat.</p> <p>The results show that the risk of A23282A application on cereal crops is minor.</p> <p>ZRMS confirms the minor risk of A23282A application to some non-target plants, which may be adjacent crops, and recommends to enter an appropriate information to the product label.</p>

Tank cleaning

Within document Part B, Section 1 IIIA 4.2 *Procedures for tank cleaning application equipment* data were summarized from tests to determine the effectiveness of the tank cleaning procedure for A23282A. The cleaning procedure followed is detailed below:

Immediately after use, clean the spray equipment thoroughly. Drain the system completely and rinse spray tank, boom and nozzles three times with clean tap water until the foam and all traces of product have been removed. After applying the cleaning procedure, <0.01 % residue was found in the refilled spray tank. Therefore, the cleaning procedure is deemed effective and the rinsing procedure sufficiently reduced the amount of residue in the spray tank.

Comments of zRMS	Tank cleaning ZRMS agree with the cleaning procedure provided by applicant.
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3.5.3 Effects on beneficial and other non-target organisms (KCP 6.5.3)

Throughout the field trials that have been conducted on effectiveness and selectivity of A23282A, there have been no reports or observations to suggest a detrimental impact of A23282A on beneficial or non-target organisms.

Risk assessments for A23282A according to the proposed use pattern are provided in Part B Section 9 (Ecotoxicology) of this draft registration report and are considered adequate. Please refer to Annex point 9.7 'Effects on arthropods other than bees' and Annex point 9.8 'Effects on non-target soil meso- and macrofauna' of the dossier, for a full description of safety to beneficial organisms (other than bees).

Conclusion

When applied in accordance with the uses supported in this submission, A23282A would not be expected to have an adverse effect to beneficial organisms and non-target arthropods.

3.5.4 Summary and conclusion

When applied in accordance with the uses supported in this submission, A23282A would not be expected to have an adverse effect to succeeding crops, adjacent crops and beneficial organisms and non-target arthropods.

3.6 Other/special studies

No further studies are submitted in support of this application.

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

List of Test Facilities					
Hyperlink to certificate	Test facility	Country	Address	Number of Trials	
				2020	2021
1d6cb2337bd	Redebel SA	Belgium	Rue de Chassart 4, Saint-Amant, 6221	1	2
1d6cb233874	Anadiag Bulgaria Ltd., Plovdiv, Bulgaria	Bulgaria	Vasil Levski, Plovdiv Bulgaria, 4000	3	0
1d6cb2338e4	Eurofins Agrosience Services EOOD	Bulgaria	Zar Kalojan Str 5, Lovech, 5570	2	0
1d6cb233718	SAGEA OOD Varna	Bulgaria	Akchelar 522, Varna, 9000	1	9
1d6cb233733	SGS Bulgaria Ltd.	Bulgaria	180 A, Vasil Levski blv., Plovdiv - Bulgaria, 4000	2	0
1d6cb2337dc	STAPHYT Bulgaria - kv. Riltzi - 9300 - DOBRITCH - Bulgaria	Bulgaria	Ul. 5; No 54 /Stopanski dvor/, Zlatitrap / Plovdiv, 4212	1	0
1d6cb2337f7	Agrobiotest d.o.o.	Croatia	Matije Gupca 44a, Koprivnicki Bregi, 48000	2	4
1d6cb2338e3	VKST Field Trials, Ringsted	Denmark	Kongstedvej 4B, Ringsted, 4100	2	14
1d6cb233852	Agrolab A/S	Denmark	Røjleskovvej 18, Middelfart, 5500	2	0
1d6cb233a39	Aarhus University, Slagelse, Denmark	Denmark	Forsøgsvej 1, Slagelse, 4200	1	0
1d6cb23378a	Nylands Svenska Lantbrukssällskap	Finland	Västankvarnvägen 446, Ingå st, 10230	0	1
1d6cb23372b	ANTEDIS SAS	France	Les Olives, BEAUPUY, 32600	2	0
1d6cb2338af	BIOTEK Agriculture, Saint Pouange / Troyes, France	France	3 rue Charles de Gaulle, GUILLEVILLE, 28310	3	0
1d6cb2337ec	ESSAIS+	France	1, rue du 8 mai, BOYELLES, 62128	3	2
1d6cb233845	Syngenta SAS	France	1738 Route d'Ondes, Grisolles, 82170	5	6
1d6cb233979	PROMO-VERT S.A.,REIMS France	France	route de l'isle jourdain, ENDOUFIELLE, 32600	1	0
1d6cb2338b6	QUALIPHYT - France	France	4 rue des Marnes, Chemillé sur Indrois, 37460	1	0
1d6cb233717	Staphyt, Inchy en Artois, France	France	Le Bois Bouzard, JANZE, 35150	1	0
1d6cb23384f	SynTech Research France SAS, La Chapelle de Guinchay, France	France	613 Route du Bois de Loyse, La Chapelle de Guinchay, 71570	1	25
1d6cb233955 1d6cb233651	Syngenta Agro GmbH	Germany	Am Technologiepark 1-5, Maintal, 63477	11	9

List of Test Facilities					
Hyperlink to certificate	Test facility	Country	Address	Number of Trials	
				2020	2021
1d6cb2339cb 1d6cb2336e2	Field Research Support	Germany	Max-Planck-Str. 5, Wunstorf, 31515	1	0
1d6cb2337f2	BioChem agrar Agroplan, Uedem, Germany	Germany	Bünnert 72, Uedem, 47589	0	7
1d6cb233691	SynTech Research Germany GmbH, Christinenthal, Germany	Germany	Schillerstrasse 16, Untergruppenbach, 74199	0	5
1d6cb2339e4 1d6cb233746	Syngenta Hungary	Hungary	Dózsa György út 69/a, Gödöllő, 2100	3	4
1d6cb23370f	AGROFIL-SZMI KFT	Hungary	Petőfi Sándor utca 7., , 9235	0	2
1d6cb233988	Anadiag Hungary Kft, Komárom, Hungary	Hungary	Petőfi Sándor u. 67., Komárom, 2921	0	1
1d6cb2338ac	CPR Europe Kft.	Hungary	30 Török Ignác street, Szombathely, Vas megye, 9700	0	5
1d6cb2339cc 1d6cb2338c2	TEAGASC, Carlow, Ireland	Ireland	Carlow, Leinster, R93XE12	1	1
1d6cb23394c	Crop Plot Trials Ltd	Ireland	Buck Learys Cross, Buck Learys Cross, Glanmire, T45 DX96	0	1
1d6cb2646ff	Latvian Plant Protection Research Centre, Riga, Latvia	Latvia	Struktoru 14a, Riga, LV 1039	0	11
1d6cb2646df	Institute of Agriculture, LAMMC, Akademija, Lithuania	Lithuania	Instituto al. 1, Akademija, Kedainiai, LT 58344	3	10
1d6cb264642	Eurofins - De Bredelaar	Netherlands	Reethsestraat 17B, Elst, Gelderland, 6662PK	1	0
1d6cb264641	Syngenta Crop Protection BV	Netherlands	Jacob Obrechtlaan 7a, Bergen op Zoom, 4611 AP	1	0
1d6cb26451e	Cultus Crop Research BV	Netherlands	Zandterweg 5, Lottum, 5973 RB	0	2
1d6cb2643c6	Eurofins Agrosience Services, Kaźmierz, Poland	Poland	EUROFINS AGROSCIENCE SERVICES, Kazmierz, Parkowa street 6, Kazmierz, 64-530	1	0
1d6cb264389	Field Research Support Kościan PL	Poland	Kościan, Dworcowa 2, Wielkopolskie, 64-000	3	2

List of Test Facilities					
Hyperlink to certificate	Test facility	Country	Address	Number of Trials	
				2020	2021
1d6cb264427	Uniw. Techn.-Przyrodniczy, Bydgoszcz, Poland	Poland	ul. Ks. A. Kordeckiego 20A, Bydgoszcz, 85225	1	0
1d6cb2643e1	Poznan University of Life Sciences	Poland	Dojazd 11, Poznań/ Wielkopolska, 62-632	4	1
1d6cb264381	SGS Polska Sp. z o.o., Warszawa, Poland	Poland	Marszowice 19, Oława, 55-200	1	0
1d6cb2646f1	Institute Ochrony Roslin, Sosnowice, Poland	Poland	ul. Gliwicka 29, Sosnowice/śląskie, 44-153	3	4
1d6cb2642cc	University of Life Sciences in Lublin, Poland	Poland	Skromna 8, Lublin + lubelskie, 20-704	2	0
1d6cb264634	Syngenta Polska Sp. z o.o.	Poland	Szamocka 8, Warszawa/mazowiecki, 01-748	15	4
1d6cb2643ad	BioChem agrar Polska Spolka z o.o.	Poland	ul. Kozielska 48, Urbanowice, 47-270	0	9
1d6cb26432e	SynTech Research Poland	Poland	ul. Jagiellonska 69/1, Bydgoszcz, 85-027	0	20
1d6cb2644a2	AgroProspect SRL	Romania	FANTANA NR 1, BRASOV, 507099	0	4
1d6cb264645 1d6cb26431d	S.C. EUROFINS AGROSCIENCE SERVICES S.R.L	Romania	EUROFINS AGROSCIENCE SERVICES, Muntele mic Street no.20, Giarmata, Timis, 307210	2	0
1d6cb2646aa 1d6cb264496	Staphyt Romania - Str. Petrolistilor, Nr. 18 - 925 300 - URZICENI	Romania	Str. Petrolistilor, Nr. 18, URZICENI, 925 300	1	0
1d6cb264494	SynTech Research Agrico SRL	Romania	Str. Marcus Aurelius Nr. 6, Arad, 310209	1	10
1d6cb26471c 1d6cb26471b	Blumeria consulting, Nitra, Slovakia	Slovakia	L. Okanika 4, Nitra, 94901	0	2
1d6cb2644cf	Agricultural institute of Slovenia, Ljubljana, Slovenia	Slovenia	Hacquetova ulica 17, Ljubljana, 1000	2	3
1d6cb26459f	RSK ADAS Ltd	United Kingdom	Preston Wynne, Herefordshire, HR1 3PG	1	0
1d6cb26451d	Dewar Crop Protection Ltd, Suffolk, United Kingdom	United Kingdom	Drumlanrig, Great Saxham, Bury St Edmunds, IP29 5JR	1	0
1d6cb2644dc	Eurofins - Agrisearch UK Ltd., Wilson, United Kingdom	United Kingdom	EUROFINS AGROSCIENCE SERVICES, Slade Lane, Wilson, Melbourne, Derbyshire, DE73 8AG	1	0

List of Test Facilities					
Hyperlink to certificate	Test facility	Country	Address	Number of Trials	
				2020	2021
1d6cb264542	Staphyt Ltd,UK	United Kingdom	3 Lower Farm Barns, Bainton Road, Bucknell, BICESTER, OXFORDSHIRE, OX27 7LT	1	0
1d6cb264666 1d6cb264367	Syngenta UK Ltd	United Kingdom	Hill Farm Road, Whittlesford, CB22 4QT	1	4
1d6cb2645ee 1d6cb264493	SynTech Research UK	United Kingdom	2, Old Hall Farm Barns, Thurston Rd, Pakenham, Bury St Edmunds, IP31 2NG	1	12
1d6cb26450b	Oxford Agricultural Trials Ltd., Bicester, United Kingdom	United Kingdom	West Farm Barns, Stratton Audley,, Bicester, Oxon., OX27 9AS	0	1

Lists of data considered in support of the evaluation

Tables considered not relevant can be deleted as appropriate.

MS to blacken authors of vertebrate studies in the version made available to third parties/public.

List of data submitted by the applicant and relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP 6	Kay, J.	2022	Biological Assessment Dossier: A23282A Syngenta non GEP Unpublished Syngenta File No. VV-894835	N	XXX

List of data submitted by the applicant and relied on

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Almskou- dahlgaard A.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Aarhus University, Slagelse, Denmark DKFBZF1012020 GEP Unpublished VV-No. VV-941117	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Moderegger A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Agro GmbH DEDSZF4072020 GEP Unpublished VV-No. VV-941101	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Kaiser B.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Agro GmbH DEDSZF1902020 GEP Unpublished VV-No. VV-941092	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Kaiser B.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field Syngenta Agro GmbH DEDSZF1752021 GEP Unpublished VV-No. VV-941090	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Kaiser B.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Syngenta Agro GmbH DEDSZF1762021 GEP Unpublished VV-No. VV-941091	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Boudinet P.	2020	FDWH20 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field BIOTEK Agriculture, Saint Pouange / Troyes, France FRBKZF0072020 GEP Unpublished	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				VV-No. VV-941238		
	MAR	Busevic G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field Agrolab A/S DKALZF1102020 GEP Unpublished VV-No. VV-941114	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Busevics G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field Agrolab A/S DKALZF1092020 GEP Unpublished VV-No. VV-941113	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Delebarre O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field BIOTEK Agriculture, Saint Pouange / Troyes, France FRSYZF6562021 GEP Unpublished VV-No.VV-941281	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Dewar A.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Dewar Crop Protection Ltd, Suffolk, United Kingdom GBDWZF9022020 GEP Unpublished VV-No. VV-941424	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Dilworth D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Crop Plot Trials Ltd IECPZF6132021 GEP Unpublished VV-No. VV-941486	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Doyle D.	2021	CDL+PTZ - Registration trials - Crop Safety in Barley - Field TEAGASC, Carlow, Ireland IETGZF6452021 GEP Unpublished VV-No. VV-941487	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company), Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Doyle-teagasc D.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field TEAGASC, Carlow, Ireland IETGZF9042020 GEP Unpublished VV-No. VV-941488	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Siegert E.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field Syngenta Agro GmbH DEDSZF3182021 GEP Unpublished VV-No. VV-941096	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Siegert E.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Syngenta Agro GmbH DEDSZF3172021 GEP Unpublished VV-No. VV-941095	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Fabien L.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SYNGENTA FRANCE SAS FRFLZF1302021 GEP Unpublished VV-No. VV-941251	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Fischbach M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field BioChem Agrar, Gerichshain, Germany DEBCZF8502021 GEP Unpublished VV-No. VV-941025	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Fischbach M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field BioChem Agrar, Gerichshain, Germany DEBCZF8712021 GEP Unpublished VV-No. VV-941029	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Gibeaud J.	2020	FDRY22 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field QUALIPHYT - France	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company), Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				FRQUZF0202020 GEP Unpublished VV-No. VV-941256		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Giesen J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Cultus Crop Research BV NLCUZF8522021 GEP Unpublished VV-No. VV-941715	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Giesen J.	2021	CDL+PTZ - Registration trials - Crop Safety in Barley - Field Cultus Crop Research BV NLCUZF8582021 GEP Unpublished VV-No. VV-941716	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Guillon B.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field BIOTEK Agriculture, Saint Pouange / Troyes, France FRBKZF0082020 GEP Unpublished VV-No. VV-941239	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Guillon B.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field BIOTEK Agriculture FRSYZF7852021 GEP Unpublished VV-No. VV-941306	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Hazell M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta UK Ltd GBMHZF2202020 GEP Unpublished VV-No. VV-941428	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Hazell M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Syngenta Crop Protection UK Ltd GBMHZF2282021 GEP Unpublished	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				VV-No. VV-941429		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Heino C.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SYNGENTA AGRO GmbH, Maintal - GERMANY DEDSZF1372020 GEP Unpublished VV-No. VV-941031	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Hey A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field BioChem agrar Agroplan, Uedem, Germany DEBCZF8512021 GEP Unpublished VV-No. VV-941026	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Hooghiemstra J.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Crop Protection BV NLBAZF2042020 GEP Unpublished VV-No. VV-941714	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Ingenerf M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field BioChem agrar Agroplan, Uedem, Germany DEBCZF6672021 GEP Unpublished VV-No. VV-941024	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Ingenerf M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Bichem agrar Agroplan, Uedem, Germany DEBCZF8662021 GEP Unpublished VV-No. VV-941028	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Isabella B.	2021	CDL+PTZ - Registration trials - Crop Safety in Barley - Field Syngenta UK LTD GBIBZF1282021 GEP Unpublished VV-No. VV-941426	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company), Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Krüger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Agro GmbH DEDSZF9322021 GEP Unpublished VV-No. VV-941106	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Krüger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field Syngenta Agro GmbH DEDSZF9262021 GEP Unpublished VV-No. VV-941103	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Krüger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field Syngenta Agro GmbH DEDSZF9272021 GEP Unpublished VV-No. VV-941104	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Krüger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field Syngenta Agro GmbH DEDSZF9282021 GEP Unpublished VV-No. VV-941105	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Kuhle B.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Agro GmbH DEDSZF1582020 GEP Unpublished VV-No. VV-941032	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Kuhle B.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Syngenta Agro Germany DEDSZF1642020 GEP Unpublished VV-No. VV-941089	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Laplace B.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF7682021 GEP Unpublished VV-No. VV-941304		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Laplace B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6412021 GEP Unpublished VV-No. VV-941278	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Laura B.	2020	FD2A21 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta SAS FRTCZF0092020 GEP Unpublished VV-No. VV-941307	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Laura B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SYNGENTA France SAS FRBLZF1132021 GEP Unpublished VV-No. VV-941241	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Lawinski K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field SynTech Research UK GBSYZF6512021 GEP Unpublished VV-No. VV-941436	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Lawinski K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field SynTech Research UK GBSYZF6472021 GEP Unpublished VV-No. VV-941435	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Léger D.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field SynTech Research France FRSYZF7232021 GEP	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				Unpublished VV-No. VV-941292		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Léger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6942021 GEP Unpublished VV-No. VV-941288	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Léger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6812021 GEP Unpublished VV-No. VV-941284	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Léger D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6252021 GEP Unpublished VV-No. VV-941276	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Leroux F.	2020	FDWH20 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta SAS FRFLZF0282020 GEP Unpublished VV-No. VV-941250	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Leroux F.	2020	FDBA21 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta SAS FRFLZF0232020 GEP Unpublished VV-No. VV-941249	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Maleyrat P.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6652021 GEP	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				Unpublished VV-No. VV-941282		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Maleyrat P.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF7172021 GEP Unpublished VV-No. FRSYZF7172021	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Maleyrat P.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF7212021 GEP Unpublished VV-No. VV-949381	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Max H.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field Syngenta Crop Protection UK Ltd GBMHZF1282021 GEP Unpublished VV-No. VV-941427	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Merz D.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Agro GmbH DEDSZF5252020 GEP Unpublished VV-No. VV-941102	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Mohr M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field BioChem Agrar, Gerichshain, Germany DEBCZF8742021 GEP Unpublished VV-No. VV-941030	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Murdock J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Oxford Agricultural Trials Ltd., Bicester, United Kingdom GBOAZF6082021 GEP Unpublished VV-No. VV-941430	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nannen D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Acceres Field Research Germany GmbH DESYZF7142021 GEP Unpublished VV-No. VV-941110	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nannen D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field Acceres Field Research Germany GmbH DESYZF6852021 GEP Unpublished VV-No. VV-941109	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Navarre C.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Staphyt, Inchy en Artois, France FRSTZF0182020 GEP Unpublished VV-No. VV-941274	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field VKST Field Trials, Ringsted DKVKZF6312021 GEP Unpublished VV-No. VV-941187	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field VKST Field Trials, Ringsted DKVKZF6332021 GEP Unpublished VV-No. VV-941188	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field VKST Field Trials, Ringsted DKVKZF6362021 GEP Unpublished VV-No. VV-941189	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field VKST Field Trials, Ringsted	N	XXX

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				DKVKZF6642021 GEP Unpublished VV-No. VV-941190		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field VKST Field Trials, Ringsted DKVKZF6722021 GEP Unpublished VV-No. VV-941191	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field VKST Field Trials, Ringsted DKVKZF6732021 GEP Unpublished VV-No. VV-941192	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field VKST Field Trials, Ringsted DKVKZF6752021 GEP Unpublished VV-No. VV-941193	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field VKST Field Trials, Ringsted DKVKZF6862021 GEP Unpublished VV-No. VV-941194	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field VKST Field Trials, Ringsted DKVKZF6042021 GEP Unpublished VV-No. VV-941118	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field VKST Field Trials, Ringsted DKVKZF6142021 GEP Unpublished	N	XXX

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				VV-No. VV-941185		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field VKST Field Trials, Ringsted DKVKZF6242021 GEP Unpublished VV-No. VV-941186	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field VKST Field Trials, Ringsted DKVKZF6872021 GEP Unpublished VV-No. VV-941195	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field VKST Field Trials, Ringsted DKVKZF6962021 GEP Unpublished VV-No. VV-941196	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Nielsen M.G	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field VKST Field Trials, Ringsted DKVKZF7152021 GEP Unpublished VV-No. VV-941197	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Olsen J.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field VKST Field Trials, Ringsted DKAVZF1112020 GEP Unpublished VV-No. VV-941116	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Olsen J.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field VKST Field Trials, Ringsted DKAVZF1072020 GEP Unpublished VV-No. VV-941115	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Oriol B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field	N	XXX

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				SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6802021 GEP Unpublished VV-No. VV-941283		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Oriol B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF6272021 GEP Unpublished VV-No. VV-941277	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Placke M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Agro GmbH DEDSZF2882020 GEP Unpublished VV-No. VV-941094	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Reynens P.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Redebel sa BEREZF0012020 GEP Unpublished VV-No. VV-941005	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Reynens P.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Redebel sa BERDZF6122021 GEP Unpublished VV-No. VV-941003	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Reynens P.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Redebel sa BERDZF7072021 GEP Unpublished VV-No. VV-941004	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Rivet J.	2020	FDBA21 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field ESSAIS + FREPFZF0212020	N	XXX

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				GEP Unpublished VV-No. VV-941245		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Rivet J.	2020	FDWH20 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SAS ESSAIS+ FREPF0222020 GEP Unpublished VV-No. VV-941246	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Rivet J.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field ESSAIS+ FREPF0202020 GEP Unpublished VV-No. VV-941244	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Rivet J.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SAS ESSAIS + FREPF7802021 GEP Unpublished VV-No. VV-941248	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Rivet J.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SAS ESSAIS + FREPF7792021 GEP Unpublished VV-No. VV-941247	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Röhr A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field BioChem Agrar, Gerichshain, Germany DEBCZF8532021 GEP Unpublished VV-No. VV-941027	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Rose-gray S.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Staphyt Ltd,UK GBSTZF9012020 GEP Unpublished VV-No. VV-941431	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Selig M.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Field Research Support DEFZZF1082020 GEP Unpublished VV-No. VV-941107	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Terhalle S.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Agro Germany DEDSZF2832020 GEP Unpublished VV-No. VV-941093	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Strbac S.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research Germany GmbH, Christinenthal, Germany DESYZF7552021 GEP Unpublished VV-No. VV-941112	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Strbac S.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research Germany GmbH, Christinenthal, Germany DESYZF7542021 GEP Unpublished VV-No. VV-941111	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Strbac S.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research Germany GmbH, Christinenthal, Germany DESYZF6352021 GEP Unpublished VV-No. VV-941108	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Stuebner B.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Germany DEDSZF3712020 GEP Unpublished VV-No. VV-941098	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Stuebner B.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Germany DEDSZF3722020 GEP Unpublished VV-No. VV-941099	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Stuebner B.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Germany DEDSZF3752020 GEP Unpublished VV-No. VV-941100	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Stuttard M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research UK GBSYZF6172021 GEP Unpublished VV-No. VV-941433	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Stuttard M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research UK GBSYZF6322021 GEP Unpublished VV-No. VV-941434	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research UK GBSYZF9022020 GEP Unpublished VV-No. VV-941458	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research UK GBSYZF7512021 GEP Unpublished VV-No. VV-941440	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research UK	N	XXX

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				GBSYZF7022021 GEP Unpublished VV-No. VV-941439		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SynTech Research UK GBSYZF7762021 GEP Unpublished VV-No. VV-941443	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research UK GBSYZF6022021 GEP Unpublished VV-No. VV-941432	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field SynTech Research UK GBSYZF6532021 GEP Unpublished VV-No. VV-941437	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research UK GBSYZF7592021 GEP Unpublished VV-No. VV-941441	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research UK GBSYZF6982021 GEP Unpublished VV-No. VV-941438	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Sumner K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research UK GBSYZF7662021 GEP Unpublished	N	XXX

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				VV-No. VV-941442		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Tessiot O.	2020	FDRY22 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field BIOTEK Agriculture, Saint Pouange / Troyes, France FRBKZF0102020 GEP Unpublished VV-No. VV-941240	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Thivat L.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research France FRSYZF7002021 GEP Unpublished VV-No. VV-949380	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Thivat L.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SynTech Research France SAS, La Chapelle de Guinchay, France FRSYZF7692021 GEP Unpublished VV-No. VV-941305	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Thomas G.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field Syngenta Agro GmbH DEDSZF3492021 GEP Unpublished VV-No. VV-941097	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Urquhart B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Crop Protection UK Ltd GBBUZF1282021 GEP Unpublished VV-No. VV-941310	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Vandekerchove C.	2020	FD2A21 : CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Vert Marine FRVMZF0042020 GEP Unpublished VV-No. VV-941308	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Vivet V.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research France FRSYZF7632021 GEP Unpublished VV-No. VV-941303	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Vivet V.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research France FRSYZF6922021 GEP Unpublished VV-No. VV-941287	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Vivet V.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research France FRSYZF7112021 GEP Unpublished VV-No. VV-941290	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Welby T.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Eurofins - Agrisearch UK Ltd., Wilson, United Kingdom GBEUZF9042020 GEP Unpublished VV-No. VV-941425	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MAR	Williams P.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field RSK ADAS Ltd GBADZF9012020 GEP Unpublished VV-No. VV-941309	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	MED	Wilma van de Ven	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Eurofins - De Bredelaar NLDBZF9012020 GEP Unpublished VV-No. VV-941717	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ádám T.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field	N	XXX

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				Syngenta HU HUHUF2092020 GEP Unpublished VV-No. VV-941483		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ádám T.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta HU HUHUF1542021 GEP Unpublished VV-No. VV-941481	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Aleksiev N.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SAGEA OOD, Plovdiv, Bulgaria BGSZF6272021 GEP Unpublished VV-No. VV-941018	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Babic M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agrobiotest d.o.o., Koprivnicki Bregi, Croatia HRATZF0012020 GEP Unpublished VV-No. VV-941462	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Babic M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agrobiotest d.o.o., Koprivnicki Bregi, Croatia HRATZF0022020 GEP Unpublished VV-No. VV-941463	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Babic M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Agrobiotest d.o.o. HRATZF6302021 GEP Unpublished VV-No. VV-941467	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Babic M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Agrobiotest d.o.o. HRATZF6202021	N	XXX

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				GEP Unpublished VV-No. VV-941466		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Babic M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agrobiotest d.o.o. HRATZF6042021 GEP Unpublished VV-No. VV-941464	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Babic M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agrobiotest d.o.o. HRATZF6102021 GEP Unpublished VV-No. VV-941465	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Boroka F.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SC Syntech Research Agrico SRL ROSYZF6202021 GEP Unpublished VV-No. VV-942043	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Boroka F.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SC Syntech Research Agrico SRL ROSYZF6262021 GEP Unpublished VV-No. VV-942044	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Boroka F.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SC Syntech Research Agrico SRL ROSYZF6342021 GEP Unpublished VV-No. VV-942047	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Boroka F.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SC Syntech Research Agrico SRL ROSYZF7012021 GEP Unpublished VV-No. VV-942049	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Boroka F.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SC Syntech Research Agrico SRL ROSYZF7202021 GEP Unpublished VV-No. VV-942051	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Boroka F.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SC Syntech Research Agrico SRL ROSYZF7782021 GEP Unpublished VV-No. VV-942052	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Coca A.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research Agrico SRL ROSYZF2812020 GEP Unpublished VV-No. VV-942042	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Constantin M.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field S.C. EUROFINS AGROSCIENCE SERVICIES S.R.L ROEUZF2822020 GEP Unpublished VV-No. VV-942040	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Czakó D.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field CPR Europe Kft. HUCPZF6122021 GEP Unpublished VV-No. VV-941472	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Dirloman C.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Staphyt Romania - Str. Petrolistilor, Nr. 18 - 925 300 - URZICENI ROSTZF2802020 GEP Unpublished VV-No. VV-942041	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Filipoiu A.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field S.C. EUROFINS AGROSCIENCE SERVICES S.R.L ROEUZF2672020 GEP Unpublished VV-No. VV-942039	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Fitos-bedő V.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field AGROFIL-SZMI KFT HUAZF1942021 GEP Unpublished VV-No. VV-941469	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Gabriela B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field AgroProspect SRL ROAPZF8702021 GEP Unpublished VV-No. VV-942070	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Gabriela B.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field AgroProspect SRL ROAPZF8732021 GEP Unpublished VV-No. VV-942038	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Gabriela B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field AgroProspect SRL ROAPZF8672021 GEP Unpublished VV-No. VV-942068	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Gabriela B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field AgroProspect SRL ROAPZF8692021 GEP Unpublished VV-No. VV-942069	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Georgiev K.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field	N	XXX

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				SAGEA OOD Varna BGSAZF2372020 GEP Unpublished VV-No. VV-941011		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Georgiev K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SAGEA OOD, Varna, Bulgaria BGSAZF6062021 GEP Unpublished VV-No. VV-941013	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Georgiev K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SAGEA OOD, Varna, Bulgaria BGSAZF6262021 GEP Unpublished VV-No. VV-941017	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Georgiev K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SAGEA OOD, Varna, Bulgaria BGSAZF6282021 GEP Unpublished VV-No. VV-941019	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Gergely B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta HU HUHUF0272021 GEP Unpublished VV-No. VV-941476	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Gergely B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta HU HUHUF0422021 GEP Unpublished VV-No. VV-941477	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ilieva G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Anadiag Bulgaria Ltd., Plovdiv, Bulgaria BGANZF2392020	N	XXX

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				GEP Unpublished VV-No. VV-941007		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ilieva G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Anadiag Bulgaria Ltd., Plovdiv, Bulgaria BGANZF2342020 GEP Unpublished VV-No. VV-941006	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ilieva G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Anadiag Bulgaria Ltd., Plovdiv, Bulgaria BGANZF2402020 GEP Unpublished VV-No. VV-941008	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ivanov A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SGS Bulgaria Ltd BGSGZF3212020 GEP Unpublished VV-No. VV-941022	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Ivanov A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SGS Bulgaria Ltd. BGSGZF2382020 GEP Unpublished VV-No. VV-941021	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Kavkler U.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agricultural institute of Slovenia, Ljubljana, Slovenia SIKIZF0012020 GEP Unpublished VV-No. VV-942053	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Kavkler U.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Agricultural institute of Slovenia, Ljubljana, Slovenia SIKIZF0102020	N	XXX

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				GEP Unpublished VV-No. VV-942054		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Kirov P.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SAGEA OOD, Varna, Bulgaria BGSAZF6152021 GEP Unpublished VV-No. VV-941014	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Kirov P.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SAGEA OOD, Varna, Bulgaria BGSAZF6362021 GEP Unpublished VV-No. VV-941020	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Kocsi I.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Anadiag Hungary Kft, Komárom, Hungary HUANZF2532021 GEP Unpublished VV-No. VV-941470	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Kolev G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field STAPHYT Bulgaria - kv. Riltzi - 9300 - DOBRITCH - Bulgaria BGSTZF2492020 GEP Unpublished VV-No. VV-941023	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Loncar J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agricultural Institute of Slovenia SILJZF6162021 GEP Unpublished VV-No. VV-942056	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Loncar J.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field Agricultural Institute of Slovenia SILJZF6322021 GEP Unpublished VV-No. VV-942057	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Loncar J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Agricultural Institute of Slovenia SILJZF6032021 GEP Unpublished VV-No. VV-942055	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Makó I.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field CPR Europe Kft. HUCPZF6022021 GEP Unpublished VV-No. VV-941471	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Menyhart L.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Hu HUHUF2112020 GEP Unpublished VV-No. VV-941485	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mihók M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Blumeria consulting, Nitra, Slovakia SKNIZF6372021 GEP Unpublished VV-No.	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mihók M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Blumeria consulting, Nitra, Slovakia SKNIZF6402021 GEP Unpublished VV-No. VV-949385	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mircea C.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SC Syntech Research Agrico SRL ROSYZF6292021 GEP Unpublished VV-No. VV-942045	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mircea C.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SC Syntech Research Agrico SRL	N	XXX

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				ROSYZF6302021 GEP Unpublished VV-No. VV-942046		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mircea C.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SC Syntech Research Agrico SRL ROSYZF6372021 GEP Unpublished VV-No. VV-942048	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mircea C.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SC Syntech Research Agrico SRL ROSYZF7062021 GEP Unpublished VV-No. VV-942050	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mitev A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SAGEA OOD, Plovdiv, Bulgaria BGSAZF6052021 GEP Unpublished VV-No. VV-941012	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mitev A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SAGEA OOD, Plovdiv, Bulgaria BGSAZF6192021 GEP Unpublished VV-No. VV-941015	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Mitev A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SAGEA OOD, Plovdiv, Bulgaria BGSAZF6252021 GEP Unpublished VV-No. VV-941016	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Németh S.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field CPR Europe Kft, Szombathely, Hungary HUCPZF6132021 GEP Unpublished	N	XXX

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				VV-No. VV-941473		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Németh S.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field CPR Europe Kft, Szombathely, Hungary HUCPZF6182021 GEP Unpublished VV-No. VV-941474	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Takacs A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Hungary HUHUF2102020 GEP Unpublished VV-No. VV-941484	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Tamás N.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Kft. Hungary HUHUF1642021 GEP Unpublished VV-No. VV-941482	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Todorova T.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Eurofins Agrosience Services EOD,Pazardzhik, Bulgaria BGEUF2502020 GEP Unpublished VV-No. VV-941010	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Todorova T.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Eurofins Agrosience Services EOD BGEUF2362020 GEP Unpublished VV-No. VV-941009	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Varga A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field CPR Europe Kft. HUCPZF6312021 GEP Unpublished VV-No. VV-941475	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	SE	Veronika F.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field AGROFIL-SZMI KFT HUAZF1282021 GEP Unpublished VV-No. VV-941468	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Adam G.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Polska Sp. z o.o PLDSZF7092021 GEP Unpublished VV-No. VV-941770	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Adam G.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7042021 GEP Unpublished VV-No. VV-941769	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Chermula L.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Eurofins Agrosience Services, Kaźmierz, Poland PLEUZF1062020 GEP Unpublished VV-No. VV-949383	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ciemniak W.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field Field Research Support Kościan PL PLFPZF1082020 GEP Unpublished VV-No. VV-942008	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ciemniak W.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Field Research Support Kościan PL PLFPZF1042020 GEP Unpublished VV-No. VV-941785	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ciemniak W.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field	N	XXX

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				Field Research Support Kościan PL PLFPZF1092020 GEP Unpublished VV-No. VV-942009		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ciemniak W.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Field Research Support Kościan PL PLFPZF8542021 GEP Unpublished VV-No. VV-942010	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ciemniak W.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Field Research Support Kościan PL PLFPZF8592021 GEP Unpublished VV-No. VV-942011	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ćwiek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research Poland PLSYZF6282021 GEP Unpublished VV-No. VV-941991	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ćwiek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research Poland PLSYZF7652021 GEP Unpublished VV-No. VV-942058	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Garbowski A.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Syngenta Polska Sp. z o.o PLDSZF7192020 GEP Unpublished VV-No. VV-941773	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Garbowski A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field Syngenta Polska Sp. z o.o PLDSZF7132020 GEP	N	XXX

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				Unpublished VV-No. VV-941771		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Garbowski A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7172020 GEP Unpublished VV-No. VV-941772	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Garbowski A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Polska Sp. z o.o PLDSZF7242020 GEP Unpublished VV-No. VV-941774	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Garbowski A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7282020 GEP Unpublished VV-No. VV-941777	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Garbowski A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7262020 GEP Unpublished VV-No. VV-941775	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Hamkało N.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SGS Polska Sp. z o.o., Warszawa, Poland PLSGZF1022020 GEP Unpublished VV-No. VV-942013	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kasperek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research Poland PLSYZF6232021 GEP Unpublished VV-No. VV-941990	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kasperek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field SynTech Research Poland PLSYZF6682021 GEP Unpublished VV-No. VV-941995	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kasperek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research Poland PLSYZF7092021 GEP Unpublished VV-No. VV-942003	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kasperek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SynTech Research Poland PLSYZF7732021 GEP Unpublished VV-No. VV-942059	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kasperek M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field SynTech Research Poland PLSYZF7522021 GEP Unpublished VV-No. VV-942006	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kostera M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field Syngenta Polska Sp. z o.o PLDSZF7622020 GEP Unpublished VV-No. VV-949382	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kostera M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7692020 GEP Unpublished VV-No. VV-941784	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kostera M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Polska Sp. z o.o	N	XXX

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				PLDSZF7612020 GEP Unpublished VV-No. VV-941782		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kostera M.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7642020 GEP Unpublished VV-No. VV-941783	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kostera M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Polska Sp. z o.o PLDSZF7532020 GEP Unpublished VV-No. VV-941778	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kostera M.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o PLDSZF7592020 GEP Unpublished VV-No. VV-941780	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kozłowski J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research Poland PLSYZF6442021 GEP Unpublished VV-No. VV-941994	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kozłowski J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field SynTech Research Poland PLSYZF6712021 GEP Unpublished VV-No. VV-941998	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kozłowski J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research Poland PLSYZF7182021 GEP Unpublished	N	XXX

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				VV-No. VV-942005		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Krzyżnińska B.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Institute of Plant Protection - National Research Institute, Sosnowice Branch PLSOZF1072020 GEP Unpublished VV-No. VV-949384	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Krzyżnińska B.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Institute of Plant Protection - National Research Institute, Sosnowice Branch PLSOZF7672021 GEP Unpublished VV-No. VV-941988	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Krzyżnińska B.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Institute Ochrony Roslin, Sosnowice, Poland PLSOZF1132021 GEP Unpublished VV-No. VV-942016	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Krzyżnińska B.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Institute of Plant Protection - National Research Institute, Sosnowice Branch PLSOZF7772021 GEP Unpublished VV-No. VV-941989	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Kubiak d.K	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Instytut Ochrony Roslin-PIB Poznan; Poland ; GEP No. 7/2018 PLIPZF7752021 GEP Unpublished VV-No. VV-942012	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Lemanczyk G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Uniw. Techn.-Przyrodniczy, Bydgoszcz, Poland PLUBZF1012020	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				GEP Unpublished VV-No. VV-942061		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Maczynska A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Institute Ochrony Roslin, Sosnicowice, Poland PLSOZF1062020 GEP Unpublished VV-No. VV-942014	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Maczynska A.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Institute Ochrony Roslin, Sosnicowice, Poland PLSOZF1082020 GEP Unpublished VV-No. VV-942015	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Paluch M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field BioChem agrar Polska Spolka z o.o. PLBCZF8652021 GEP Unpublished VV-No. VV-941724	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Paluch M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field BioChem agrar Polska Spolka z o.o. PLBCZF8632021 GEP Unpublished VV-No. VV-941722	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Pejka Ł.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field SynTech Research Poland PLSYZF6702021 GEP Unpublished VV-No. VV-941997	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Pejka Ł.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field SynTech Research Poland PLSYZF6772021 GEP Unpublished	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				VV-No. VV-942000		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Pietryuga J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field Institute Ochrony Roslin, Sosnicowice, Poland PLSOZF6742021 GEP Unpublished VV-No. VV-942017	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Potocka K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research Poland PLSYZF6392021 GEP Unpublished VV-No. VV-941993	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Potocka K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field SynTech Research Poland PLSYZF6692021 GEP Unpublished VV-No. VV-941996	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Potocka K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field SynTech Research Poland PLSYZF6782021 GEP Unpublished VV-No. VV-942001	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Potocka K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research Poland PLSYZF7122021 GEP Unpublished VV-No. VV-942004	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Potocka K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field SynTech Research Poland PLSYZF7742021 GEP Unpublished VV-No. VV-942060	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ramanauskiene J.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Institute of Agriculture, LAMMC, Akademija, Lithuania LTAKZF1162020 GEP Unpublished VV-No. VV-941633	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ramanauskiene J.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field LAMMC LTAKZF7162021 GEP Unpublished VV-No. VV-941638	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ramanauskiene J.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field LAMMC LTAKZF7812021 GEP Unpublished VV-No. VV-941642	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Ramanauskiene J.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field LAMMC LTAKZF7842021 GEP Unpublished VV-No. VV-941643	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sabeckis A.	2021	CDL+PTZ - Registration trials - Crop Safety in Wheat - Field LAMMC LTAKZF7222021 GEP Unpublished VV-No. VV-941639	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sawinska Z.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Poznan University of Life Sciences PLUPZF1122020 GEP Unpublished VV-No. VV-942065	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sawinska Z.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Poznan University of Life Sciences	N	XXX

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				PLUPZF1192020 GEP Unpublished VV-No. VV-942066		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sawinska Z.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Poznan University of Life Sciences PLUPZF1112020 GEP Unpublished VV-No. VV-942064	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sawinska Z.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Poznan University of Life Sciences PLUPZF1202020 GEP Unpublished VV-No. VV-942067	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Semaskiene R.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Institute of Agriculture, LAMMC, Akademija, Lithuania LTAKZF1152020 GEP Unpublished VV-No. VV-941632	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Semaskiene R.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Lithuanian Institute of Agriculture, Akademija, Lithuania LTAKZF1092020 GEP Unpublished VV-No. VV-941631	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field BioChem agrar Polska Spolka z o.o. PLBCZF8562021 GEP Unpublished VV-No. VV-941719	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field BioChem agrar Polska Spolka z o.o. PLBCZF8552021 GEP	N	XXX

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				Unpublished VV-No. VV-941718		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field BioChem agrar Polska Spolka z o.o. PLBCZF8682021 GEP Unpublished VV-No. VV-941725	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field BioChem agrar Polska Spolka z o.o. PLBCZF8602021 GEP Unpublished VV-No. VV-941720	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field BioChem agrar Polska Spolka z o.o. PLBCZF8722021 GEP Unpublished VV-No. VV-941765	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field BioChem agrar Polska Spolka z o.o. PLBCZF8622021 GEP Unpublished VV-No. VV-941721	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Sikora M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field BioChem agrar Polska Spolka z o.o. PLBCZF8642021 GEP Unpublished VV-No. VV-941723	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Svereikaite A.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on rye - Field LAMMC LTAKZF6662021 GEP Unpublished VV-No. VV-941637	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Switkowski M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field SynTech Research Poland PLSYZF6382021 GEP Unpublished VV-No. VV-941992	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Switkowski M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field SynTech Research Poland PLSYZF6992021 GEP Unpublished VV-No. VV-942002	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Switkowski M.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on triticale - Field SynTech Research Poland PLSYZF6762021 GEP Unpublished VV-No. VV-941999	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Tomasz K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Crop Protection Sp.z o.o. PLDSZF7602021 GEP Unpublished VV-No. VV-941781	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Tomasz K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Crop Protection Sp.z o.o. PLDSZF7582021 GEP Unpublished VV-No. VV-941779	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Träskman S.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on oat - Field Nylands Svenska Lantbrukssällskap FINYZF6482021 GEP Unpublished VV-No. VV-941230	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field	N	XXX

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				Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF7832021 GEP Unpublished VV-No. VV-941713		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF6052021 GEP Unpublished VV-No. VV-941644	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF6092021 GEP Unpublished VV-No. VV-941645	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF6112021 GEP Unpublished VV-No. VV-941646	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF6162021 GEP Unpublished VV-No. VV-941706	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF6952021 GEP Unpublished VV-No.- VV-941708	N	XXX

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KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF6182021 GEP Unpublished VV-No. VV-941707	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF7132021 GEP Unpublished VV-No. VV-941709	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on wheat - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF7822021 GEP Unpublished VV-No. VV-941712	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF7532021 GEP Unpublished VV-No. VV-941710	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Treikale O.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Latvian Plant Protection Research Centre, Riga, Latvia LVRIZF7612021 GEP Unpublished VV-No. VV-941711	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Verikaite K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Lithuanian Institute of Agriculture, Akademija, Lithuania LTAKZF6062021 GEP Unpublished	N	XXX

KCP numbers	Eppo Zone	Author	Year	Title Source (where different from company) Company, Report No. GLP or GEP status (where relevant) Published or Unpublished	Vertebrate study Y/N	Owner
				VV-No. VV-941634		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Verikaite K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Lithuanian Institute of Agriculture, Akademija, Lithuania LTAKZF6152021 GEP Unpublished VV-No. VV-941635	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Verikaite K.	2021	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Lithuanian Institute of Agriculture, Akademija, Lithuania LTAKZF6192021 GEP Unpublished VV-No. VV-941636	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Verikaite K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Lithuanian Institute of Agriculture, Akademija, Lithuania LTAKZF7502021 GEP Unpublished VV-No. VV-941640	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Verikaite K.	2021	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Lithuanian Institute of Agriculture, Akademija, Lithuania LTAKZF7572021 GEP Unpublished VV-No. VV-941641	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Walerys G.	2020	CDL+PTZ - Registration trials - Efficacy testing against eyespot on barley - Field Syngenta Polska Sp. z o.o. PLDSZF5042020 GEP Unpublished VV-No. VV-941766	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Walerys G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on wheat - Field Syngenta Polska Sp. z o.o. PLDSZF5062020 GEP Unpublished	N	XXX

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				VV-No. VV-941768		
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Walerys G.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field Syngenta Polska Sp. z o.o. PLDSZF5052020 GEP Unpublished VV-No. VV-941767	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Wyrostek J.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field University of Life Sciences in Lublin, Poland PLULZF1042020 GEP Unpublished VV-No. VV-942062	N	XXX
KCP 6.2.2 KCP 6.2.3 KCP 6.4.1	NE	Wyrostek J.	2020	CDL+PTZ - Registration trials - Efficacy testing against foliar diseases on barley - Field University of Life Sciences in Lublin, Poland PLULZF1052020 GEP Unpublished VV-No. VV-942063	N	XXX

The following tables are to be completed by MS

List of data submitted by the applicant and not relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
				Y/N	Owner

List of data relied on not submitted by the applicant but necessary for evaluation

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