REGISTRATION REPORT

Part B

Section 8

Environmental Fate

Detailed summary of the risk assessment

Product code: ADM.00900.I.1.C

Product name: COSAYR

Chemical active substance:

Chlorantraniliprole, 200 g/L SC

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(New authorization)

Applicant: Adama country organisation / representative as specified in Part A

Submission date: October 2022

MS Finalisation date: June 2023 (initial Core Assessment)

November 2023 (final Core Assessment)

Version history

When	What
October 2022	Part B – Section 8 – Core Assessment – Central Zone, Initial version
June 2023	Initial zRMS assessment The report in the dRR format has been prepared by the Applicant, therefore all comments, additional evaluations and conclusions of the zRMS are presented in grey commenting boxes. Minor changes are introduced directly in the text and highlighted in grey. Not agreed or not relevant information are ~~struck through~~ and shaded for transparency.
November 2023	Final report (Core Assessment updated following the commenting period) Additional information/assessments included by the zRMS in the report in response to comments received from the cMS and the Applicant are highlighted in yellow. Not agreed or not relevant information are ~~struck through~~ and shaded for transparency.

DATA PROTECTION CLAIM

Under Article 59, Regulation 1107/2009/EC, on behalf of the Sponsor Company the applicant claims data protection for these studies. The data protection status and corresponding justification as valid for the respective country will be confirmed in the respective PART A

STATEMENT FOR OWNERSHIP

The summaries and evaluations contained in this review report may be based on unpublished proprietary data submitted for the purpose of the assessment undertaken by the regulatory authority that prepared it.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authorities should not grant, amend, or renew a registration on the basis of the summaries and evaluation of unpublished proprietary data contained in this document unless they have received the data on which the summaries and evaluation are based, either –

- from the owner of the data, or
- from a second party that has obtained permission from the owner of the data for this purpose or,
- following expiry of any period of exclusive use, by offering – in certain jurisdictions – mandatory compensation, unless the period of protection of the proprietary data concerned has expired.

Table of Contents

8 Fate and behaviour in the environment (KCP 9)

This document reviews the environmental fate studies and modelling for the product ADM.00900.I.1.C containing the active substance chlorantraniliprole.

Chlorantraniliprole was approved in accordance with Regulation (EC) No 1107/2009 of the European Parliament and of the Council concerning the placing of plant protection products on the market, following Commission Implementing Regulation (EU) No 1199/2013 amending the Annex to Commission Implementing Regulation (EU) No 540/2011.

Where appropriate this document refers to the conclusions of the EU review of the active substance Chlorantraniliprole as detailed in Draft Assessment Report (DAR, 2008) and in Confirmatory Information Addenda (2016). This will be where:
- the active substance data is relied upon in the risk assessment of the formulation; or when
- the EU review concluded that additional data/information should be considered at national re-registration.

Note: this Part B document only reviews data (Annex II or Annex III) and additional information that has not previously been considered within the EU review process, as part of the Annex I inclusion decision. New annex II data must only be included if they are considered essential for the evaluation and in this case a full study summary must be provided. In the case where the formulation has been previously evaluated, at European level, detailed summaries have not been provided.

This product was not the representative formulation. The product has not been previously evaluated according to Uniform Principles.

The EFSA Report of Chlorantraniliprole (EFSA Journal 2013;11(6):3143) is considered to provide the relevant review information or a reference to where such information can be found. Additionally, in April 2016 RMS Ireland published an updated List of Endpoints (Confirmatory Information Addenda, April 2016), including DT50 of Chlorantraniliprole and its soil metabolites updated on the base of confirmatory information provided to fulfill the requirement of Commission Implementing Regulation No 1199/2013 (Appendix I and II).

Each section of this document will begin with a table providing the EU endpoints to be used in this evaluation.

Appendix 1 of this document contains the list of references included in this document for support of the evaluation.

Appendix 2 of this document contains a detailed evaluation of the new Annex II studies, where applicable.

Appendix 3 of this document contains any additional information provided by the applicant.

Information on the detailed composition of ADM.00900.I.1.C can be found in the confidential dossier of this submission (Registration Report - Part C).

Concentrations of ADM.00900.I.1.C in various environmental compartments are predicted following the proposed use pattern. The predicted environmental concentrations (PEC values) in soil, surface water, sediment, and groundwater are provided. The long-term concentrations are based on results obtained for the active substance contained in the formulation. Full details of the proposed uses pattern that will be assessed is included in Table 8.1.8 and is summarized in table below

Table 8-1: Critical use pattern of ADM.00900.I.1.C

Use	Application rate (max.) (g ai/ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Head cabbage, cauliflower, broccoli	28	foliar, spraying, overall	1	-	BBCH 15-49
Corn	28	foliar, spraying, overall	1	-	BBCH 20-87
Grapevine	36	Foliar, air-assisted broadcast	1	-	BBCH 57-83
Apple, pear, quince	31	foliar, air-assisted, overall	1	-	BBCH 70-87
Apple, pear, quince	24	foliar, air-assisted, overall	1	-	BBCH 70-87
Potatoes	12	Foliar, spraying broadcast	1 or 2	7	BBCH 31-60

The impact of co-formulants is limited to short-term effects such as formation of stable spray dispersions or to facilitate uptake by target organisms, while their influence on long-term processes, such as degradation and distribution is negligible. Therefore, for the purposes of this risk assessment it is assumed that formulants do not influence the fate and behaviour of an active substance in the environment and are not considered further.

A summary of modelled substances (active ingredient and metabolites) at the different compartments is provided by Table 8-2.

Table 8-2: Chlorantraniliprole and its metabolites as considered in the evaluation

Code number/name	Compartment(s)
Chlorantraniliprole	Soil, groundwater, surface water, sediment, air
IN-EQW78	Soil, groundwater, surface water, sediment
IN-ECD73	Soil, groundwater, surface water, sediment
IN-F6L99	Soil, groundwater, surface water, sediment
IN-F9N04	Soil, groundwater, surface water, sediment
IN-GAZ70	Soil, groundwater, surface water, sediment
IN-LBA22	Surface water, sediment
IN-LBA23	Surface water, sediment
IN-LBA24	Surface water, sediment

8.1 Critical GAP and overall conclusions

Table 8.1-1: Critical use pattern of the formulated product

1	2	3	4	5	6	7	8	10	11	12	13	14	15
Use-No. (e)	**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. safener/synergist per ha e.g. recommended or mandatory tank mixtures (f)	**Conclusion**
					Method /Kind	Timing / Growth stage of crop BBCH	Max. no. (Min interval) a) per use b) per crop/ season	L product / ha a) max. rate per appl. b) max. total rate per crop/ season	g as/ha a) max. rate per appl. b) max. total rate per crop/ season	Water L/ha min / max			Groundwater
1	AT, CZ, DE, HU, PL, SI, SK	Head cabbage, Cauliflower, Broccoli	F	*Caterpillars (Plutella xylostella, Mamestra brassicae Pieris brassicae)*	foliar, spraying, overall, LCTM	15 - 49	a) 1 (-) b) 1 (-)	a) 0.14 L/ha b) 0.14 L/ha	a) 28 b) 28	400-600	3	Label range for CZ, HU, PL, SI & SK: 0.105 - 0.14 L/ha	A
2	AT, CZ, DE, HU, SI, SK	Wine grape, Table grape	F	*Lobesia botrana*	foliar, air-assisted, overall, HCTM	57 - 83	a) 1 (-) b) 1 (-)	a) 0.18 L/ha b) 0.18 L/ha	a) 36 b) 36	400-1600	wine: 30 table: 3	BAD rate AT & DE: 140 ml/10,000m² LWA BAD rate CZ, HU, SI & SK: 120 - 140 ml/10,000m² LWA Label range for CZ, HU, SI & SK: 0.15 - 0.18 L/ha	A
3	AT, CZ, DE, PL	Corn (grain and silage)	F	*Ostrinia nubilalis*	foliar, spraying, overall, LCTM	20 - 87	a) 1 (-) b) 1 (-)	a) 0.14 L/ha b) 0.14 L/ha	a) 28 b) 28	400-500	14		A
4	HU, SI, SK	Corn (grain and silage)	F	*Ostrinia nubilalis, Helicoverpa armigera*	foliar, spraying, overall, LCTM	20 - 87	a) 1 (-) b) 1 (-)	a) 0.14 L/ha b) 0.14 L/ha	a) 28 b) 28	400-500	14		A
5	AT, CZ, DE, HU, PL, SI, SK	Apple, Pear, Quince	F	*Cydia pomonella*	foliar, air-assisted, overall, HCTM	70-87	a) 1 (-) b) 1 (-)	a) 0.155 L/ha b) 0.155 L/ha	a) 31 b) 31	500-1500	14	BAD rate: 130 ml/10,000 m² LWA	C
6	AT, CZ, DE, HU, SI, SK, PL	Apple, Pear, Quince	F	*Cydia pomonella*	foliar, air-assisted, overall,	70-87	a) 1 (-) b) 1 (-)	a) 0.12 L/ha b) 0.12	a) 24 b) 24	500-1500	14	BAD rate: 100 ml/10,000 m² LWA	A

1	2	3	4	5	6	7	8	10	11	12	13	14	15
Use-No. (e)	**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. safener/synergist per ha e.g. recommended or mandatory tank mixtures (f)	**Conclusion**
					Method /Kind	Timing / Growth stage of crop BBCH	Max. no. (Min interval) a) per use b) per crop/ season	L product / ha a) max. rate per appl. b) max. total rate per crop/ season	g as/ha a) max. rate per appl. b) max. total rate per crop/ season	Water L/ha min / max			Groundwater
					HCTM			L/ha					
7	CZ, PL	Potato	F	*Leptinotarsa decemlineata*	foliar, spraying, overall, LCTM	31 - 60	a) 1 (-) b) 1 (-)	a) 0.06 L/ha b) 0.06 L/ha	a) 12 b) 12	400-600	14		A
8	AT, DE, HU, SI, SK	Potato	F	*Leptinotarsa decemlineata*	foliar, spraying, overall, LCTM	31 - 60	a) 2 (7) b) 2 (7)	a) 0.06 L/ha b) 0.12 L/ha	a) 12 b) 24	400-600	14	Label range for HU, SI & SK: 0.05 - 0.06 L/ha	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

Explanation for column 15 “Conclusion”

A	Safe use
R	Further refinement and/or risk mitigation measures required
C	To be confirmed by cMS
N	No safe use

Table 8.1-2: Assessed (critical) uses during approval of Chlorantraniliprole concerning the Section Environmental Fate

1	2	3	4	5	6	7	8	9	10	11	12	13	14
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
					Method / Kind	Timing / Growth stage of crop & season	Min-max number	Min. interval between applications (days)	kg or L product/hL min-max	Water L/ha min/max	g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season		
1	NEU SEU	Apple, Pear	F	*Cydia pomonella, Leafminers, Leafrollers, Ophe-rophtera brumata*	High pressure mist blower	70 - 87	1-2	14	3.2-4.0 (16-20 mL fp/hL) †	700-1500	60 (300 mL fp/ha) ‡	14	Minimum recommended application rate: 160 mL fp/ha#
2	SEU	Peach, apricot	F	*Cydia molesta, Anarsia lineatella*	High pressure mist blower	73 – 85	1-2	10-14	3.2-4.0 (16-20 mL fp/hL)	800-1500	60 (300 mL fp/ha)	14	Minimum recommended application rate: 160 mL fp/ha
3	SEU	"Citrus"	F	*Ph. citrella*	Mist blower	31 – 50	1-2	10-14	2.0-3.0 (10-15 mL fp/hL)	100-500	15 (75 mL fp/ha)	N.A.	Non-bearing crop; Minimum recommended application rate: 50 mL fp/ha
4	NEU SEU	Grapes (wine)	F	*L. botrana, E. ambiguella*	Mist blower	57 – 83	1	N.A.	3.0-3.6 (15-18 mL fp/hL)	700-1500	54 (270 mL fp/ha)	30	Minimum recommended application rate: 150 mL fp/ha
5	SEU	Grapes (table	F	*L. botrana, E. ambiguella*	Mist blower	57 – 85	1-2	10-14	3.0-3.6 (15-18 mL fp/hL)	600-1200	43.2 (216 mL fp/ha)	3	Minimum recommended application rate: 150 mL fp/ha
6	Spain	Field tomato, Field aubergine	F	*S. littoralis, H. armigera, S. exigua, P. gamma*	Hydraulic ground-directed boom	71 – 89	1-2	7-14	2.8-4.0 (14-20 mL fp/hL)	200-1000	40 (140-200 mL fp/ha)	1	Minimum recommended application rate: 140 mL fp/ha
7	NEU SEU	Potatoes	F	*L. decemlineata*	Hydraulic ground-directed boom	31 – 60	1-2	10-14	N.A.	300-600	12 (50-60 mL fp/ha)	14	Minimum recommended application rate: 50 mL fp/ha
8	Spain	Grapes (table)	F	*L. botrana, E. ambiguella*	Mist blower	57 – 85	1-2	10-14	2.8-3.5 (8-10 g fp/hL) †	600-1200	42 (120 g fp/ha) ‡	3	Minimum recommended application rate is 80 g fp/ha #
9	SEU	Aubergine, tomato	G	*S. littoralis, H. armigera, S. exigua, P. gamma*	Broadcast mist blower, hydraulic ground-directed boom	15 – 89	1-2	7-14	2.8-4.2 (8-12 g fp/hL)	500-1500	63 (180 g fp/ha)	1	Minimum recommended application rate is 80 g fp/ha
10	SEU	Field tomato, Field aubergine	F	*S. littoralis, H. armigera, S. exigua, P. gamma*	Hydraulic ground-directed boom	71 – 89	1-2	7-14	2.8-4.2 (8-12 g fp/hL)	200-1000	42 (80-120 g fp/ha)	1	Minimum recommended application rate is 80 g fp/ha
11	SEU	Pepper	G	*S. littoralis, H. armigera,*	Broadcast mist blower	15 – 89	1-2	7-14	2.8-3.5 (8-10 g fp/hL)	300-1250	43.75 (125 g fp/ha)	1	Minimum recommended application rate is 80 g fp/ha

1	2	3	4	5	6	7	8	9	10	11	12	13	14
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
					Method / Kind	Timing / Growth stage of crop & season	Min-max number	Min. interval between applications (days)	kg or L product/hL min-max	Water L/ha min/max	g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season		
				S. exigua, *O. nubilalis*									
12	SEU	Field pepper	F	*S. littoralis,* *H. armigera,* *S. exigua,* *O. nubilalis*	Hydraulic ground-directed boom	71 – 89	1-2	7-14	2.8-4.2 (8-12 g fp/hL)	200-1000	42 (80-120 g fp/ha)	1	Minimum recommended application rate is 80 g fp/ha
13	SEU	Cucurbit (edible and inedible peel)	G	*H. armigera,* *S. exigua,* *P. gamma,* *S. littoralis*	Broadcast, high pressure mist blower	15 – 89	1-2	7-14	2.8-4.2 (8-12 g fp/hL)	500-1200	50.4 (144 g fp/ha)	1	Minimum recommended application rate is 80 g fp/ha
14	SEU	Lettuce	F + G	*S. exigua,* *S. littoralis,* *H. armigera*	Hydraulic ground-directed boom	12 – 49	1-2	7-14	3.1-4.2 (9-12 g fp/hL)	500-1000	42 (90-120 g fp/ha)	1	Minimum recommended application rate is 80 g fp/ha

* 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

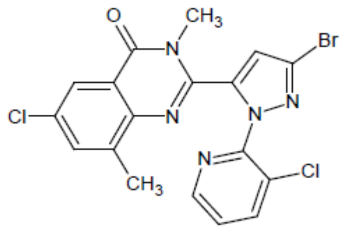
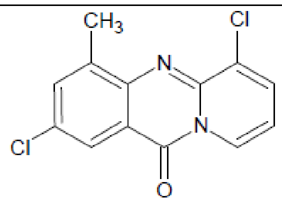
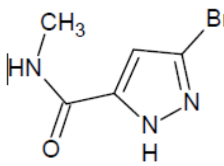
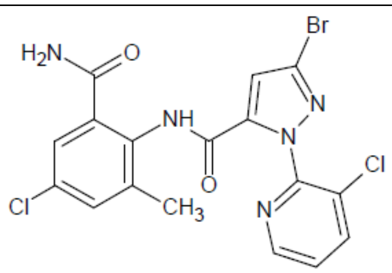
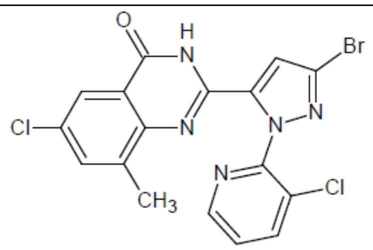
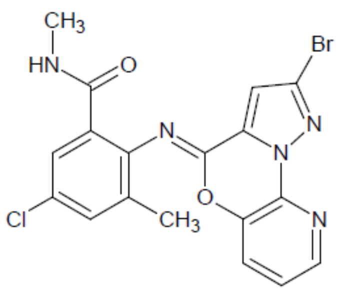
† fp/hL = formulated product/hectolitre
‡ fp/ha = formulated product/hectare
# Minimum recommended application rate is irrespective of water volume and equipment used

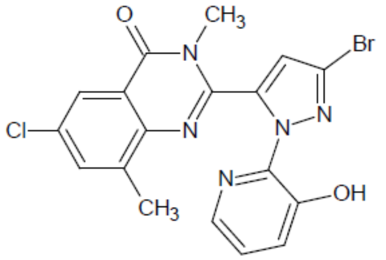
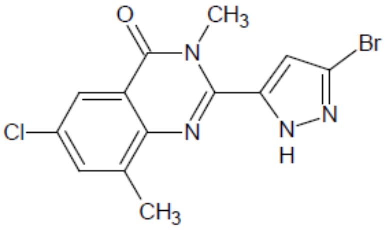
8.2 Metabolites considered in the assessment

Metabolites of chlorantraniliprole in the environment and requiring further assessment according to the results of the assessment of chlorantraniliprole for EU approval are summarized in Table 8.2-1

No new study on the fate and chlorantraniliprole or its metabolites has been performed. Hence no potentially new metabolites need to be considered.

Table 8.2-1: Metabolites of chlorantraniliprole potentially relevant for exposure assessment

Metabolite	Molar mass	Chemical structure	Maximum observed occurrence in compartments	Exposure assessment required for
IN-EQW78 (2-[3-bromo-1-(3-chloropyridin-2-yl)-1*H*pyrazol-5-yl]-6-chloro-3,8-dimethylquinazolin-4(3*H*)-one)	465.14		Soil: 31.7 % (Vittoria field study, Italy) Water/sediment, irradiated: 41% in total system (14 d); 6.4% in water (7d); 38.1% in sediment (14d)	PEC_{gw} PEC_{soil} $PEC_{sw/sed}$
IN-ECD73 (2,6-dichloro-4-methyl-11*H*-pyrido[2,1-*b*]quinazolin-11-one)	279.13		Soil: 11.3% (Crespelano field study, Italy) Water/sediment: 4.7% in whole system (100 d); 0.3% in water (10 d); 4.6% in sediment (100 d)	PEC_{gw}: PEC_{soil}: $PEC_{sw/sed}$
IN-F6L99 (3-bromo-*N*-methyl-1*H*-pyrazole-5-Carboxamide)	204.03		Soil: 2.2% (Marietta sandy loam, laboratory 25°C) Water/sediment: 4.2% in whole system (100 d), 1.57% in water; 2.63% in sediment	PEC_{gw} PEC_{soil} $PEC_{sw/sed}$
IN-F9N04 (3-bromo-*N*-(2-carbamoyl-4-chloro-6-methylphenyl)-1-(3-chloropyridin-2-yl)-1*H*-pyrazole-5-carboxamide)	469.13		Soil: 4.8% (Marietta sandy loam, laboratory 25°C) Water/sediment: 2.7% in whole system and in sediment (100 d); 2.08% in water (0 d)	PEC_{gw}: PEC_{soil}: $PEC_{sw/sed}$
IN-GAZ70 (2-[3-bromo-1-(3-chloropyridin-2-yl)-1*H*pyrazol-5-yl]-6-chloro-8-methylquinazolin-4(1*H*)-one)	451.11		Soil: 4.4% (Lleida clay loam, laboratory 25°C) Water/sediment: 3.1% in whole system (75 d);0.7% in water (10 d); 2.7% in sediment (100 d)	PEC_{gw} PEC_{soil} $PEC_{sw/sed}$
IN-LBA22 (2-{[(4*Z*)-2-bromo-4*H*-pyrazolo[1,5-*d*]pyrido[3,2-*b*][1,4]oxazin-4-ylidene]amino}-5-chloro-*N*,3-dimethylbenzamide)	446.69		Soil: not present Water/sediment: not present Aqueous photolysis: 52.8%	$PEC_{sw/sed}$

Metabolite	Molar mass	Chemical structure	Maximum observed occurrence in compartments	Exposure assessment required for
IN-LBA23 (2-[3-bromo-1-(3-hydroxypyridin-2-yl)-1*H*pyrazol-5-yl]-6-chloro-3,8-dimethylquinazolin-4(3*H*)-one)	446.69		Soil: not present Water/sediment: not present Aqueous photolysis: 51.4%	$PEC_{sw/sed}$
IN-LBA24 (2-(3-bromo-1*H*-pyrazol-5-yl)-6-chloro-3,8-dimethylquinazolin-4(3*H*)-one)	353.61		Soil: not present Water/sediment: not present Aqueous photolysis: 94.4%	PECsw/sed

zRMS comments:

Information regarding chlorantraniliprole metabolites is in line with EU agreed endpoints reported in EFSA Journal 2013; 11(6):3143.

8.3 Rate of degradation in soil (KCP 9.1.1)

Studies on degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

8.3.1 Aerobic degradation in soil (KCP 9.1.1.1)

No additional studies were submitted to the respective List of Endpoints for chlorantraniliprole (EFSA Journal 2013; 11(6):3143 and to confirmatory data (CIR, 2016). An overview of all input data is given in the tables below.

Table 8.3-1: Summary of aerobic degradation rates for chlorantraniliprole – laboratory studies

Chlorantraniliprole, Laboratory studies, aerobic conditions											
				Persistence trigger			Modelling endpoints				
Soil type	pH (H_2O)	t. °C	MWHC %	DT50 (d)	DT90 (d)	r^2	DT50 (d) 20°C 100% FC	Chi2 (%)	Kinetic model	Endpoint for model-ling	Evaluated on EU level y/n/ Refer-ence
Marietta sandy loam / USA*	7.0	25	45	886	2940	0.87	1279.4	2.2	SFO	1453.6 (geomean, n=2)	Y / EFSA (2013) & CIR (2016) *Study 12779 Rev.1*
		35	45	443	1470	0.82	1650.6	3.8	SFO		
Tama silty clay loam / USA*	6.6	25	49	539	1790	0.77	685.7	2.2	SFO	936.9 (geomean, n=2)	Y / EFSA (2013) & CIR (2016) *Study 12780*
		35	49	>1000 [a)]	>1000[a)]		1280.1	3.0	SFO		
Sassafras loam / USA*	6.6	25	50	380	1260	0.89	447.3	1.9	SFO	614.6 (geomean, n=2)	
		35	50	278	925	0.71	844.6	3.0	SFO		
Lleida clay loam / Spain*	7.9	25	44	223	773	0.97	260.4	1.2	SFO	327.9 (geomean, n=2)	
		35	44	137	454		412.8	3.4	SFO		
Lleida silty clay loam / Spain	6.6	25	50	323	1070	0.63	375.1	2.6	SFO	357.5 (geomean, n=2)	Y / EFSA (2013) & CIR (2016) *Study 14622 Rev.1*
		34	50	125	414	0.97	340.8	2.5	SFO		
Cajon sandy loam / USA	7.7	34	50	234	777		679.2	2.5	SFO	882	
Geometric mean (n=6)										665	
pH-dependency										No	

* Endpoints derived from exhaustively extracted datasets. Readily extractable residues are removed by conventional extraction whereas total residues are removed by exhaustive extraction. Higher DT50 values were obtained from exhaustive extraction than from the conventional.

a) FOMC model gave a best fit for the persistent trigger for Tama and Lleida at 35°C. For all other soils SFO model was selected for persistence trigger and modelling endpoints.

Table 8.3-2: Summary of aerobic degradation rates for IN-EQW78 – laboratory studies

IN-EQW78, Laboratory studies, aerobic conditions										
Soil type	**pH (water)**	**t.ºC**	**MWHC %**	**DT50 (d)[a)]**	**DT50 (d) at 20°C**	**DT90 (d)[a)]**	**DT50 (d) 20°C pF2/10kPa [b)]**	**Chi² (%)**	**Kinetic model**	**Evaluated on EU level Y/N / Reference**
Sassafras sandy loam / USA	5.0	25	40-60	651	1045.7	2160	844.8	1.8	SFO	Y / EFSA (2013) & CIR (2016)
Speyer 2.2 loamy sand / Germany	5.7	25	40-60	646	1037.6	2150	687.2	2.3	SFO	Y / EFSA (2013) & CIR (2016)
Lleida silty clay loam / Spain	8.1	25	40-60	763	1225.6	2530	887.8	3.1	SFO	Y / EFSA (2013) & CIR (2016)
Cajon sandy loam / USA	8.4	25	40-60	671	1077.8	2230	802.7	1.4	SFO	Y / EFSA (2013) & CIR (2016)
Tama silty clay loam / USA	6.3	25	40-60	785	1260.9	2610	971.3	1.9	SFO	Y / EFSA (2013) & CIR (2016)
Geometric mean (n=5)							**833.3** [c)]			
pH-dependency							No			

a) Values extrapolated beyond study duration
b) Normalised using a Q10 of 2.58 and a Walker equation coefficient of 0.7
c) Endpoint used in the PEC_{GW} and PEC_{SW} calculations
The SFO model passed all pertinent statistical and visual criteria and was therefore accepted for deriving modelling and persistence endpoints.

Table 8.3-3: Summary of aerobic degradation rates for IN-ECD73 – laboratory studies

IN-ECD73, Laboratory studies, aerobic conditions										
Soil type	**pH (water)**	**t.ºC**	**MWHC %**	**DT50 (d)[a)]**	**DT50 (d) at 20°C**	**DT90 (d)[a)]**	**DT50 (d) 20°C pF2/10kPa [b)]**	**Chi² (%)**	**Kinetic model**	**Evaluated on EU level Y/N / Reference**
Sassafras sandy loam / USA	5.0	25	40-60	1070	1718.7	3560	1388.6	1.6	SFO	Y / EFSA (2013) & CIR (2016)
Speyer 2.2 loamy sand / Germany	5.7	25	40-60	2870	4609.9	9540	3053.0	1.6	SFO	Y / EFSA (2013) & CIR (2016)
Lleida silty clay loam / Spain	8.1	25	40-60	752	1207.9	2500	875.0	1.2	SFO	Y / EFSA (2013) & CIR (2016)
Canjon sandy loam / USA	8.4	25	40-60	16000	25699.8	53100	19140.0	1.3	SFO	Y / EFSA (2013) & CIR (2016)
Tama silt loam / USA	6.3	25	40-60	2580	4144.1	8560	3192.2	1.4	SFO	Y / EFSA (2013) & CIR (2016)
Geometric mean/Median (n=5)							**2958.5** [c)]			
pH-dependency							No			

a) Values extrapolated beyond study duration. b) Normalised using a Q10 of 2.58 and a Walker equation coefficient of 0.7
c) Endpoint used in the PEC_{GW} and PEC_{SW} calculations.
The SFO model passed all pertinent statistical and visual criteria and was therefore accepted for deriving modelling and persistence endpoints.

Table 8.3-4: Summary of aerobic degradation rates for IN-F6L99 – laboratory studies

IN-F6L99, Laboratory studies, aerobic conditions										
				Persistence triggers			Modelling endpoints			
Soil type	pH (water)	t.ºC	MWHC %	DT50 (d)	DT90 (d)	Model	DT50 (d) 20°C pF2/10kPa a)	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
Sassafras sandy loam / USA	6.1	25	40-60	7.6	96	FOMC	35.9	4.4	FOMC b)	Y / EFSA (2013) & CIR (2016)
Speyer 2.2 loamy sand / Germany	5.9	25	40-60	8.2	73	FOMC	13.8	12.5	SFO	Y / EFSA (2013) & CIR (2016)
Lleida silty clay loam / Spain	7.4	25	40-60	10	97	FOMC	16.3	7.3	SFO	Y / EFSA (2013) & CIR (2016)
Hidalgo sandy clay loam / USA	8.3	25	40-60	37	123 c)	SFO	47.0	8.4	SFO	Y / EFSA (2013) & CIR (2016)
Tama silt loam / USA	6.3	25	40-60	29	259 c)	FOMC	48.2	7.7	SFO	Y / EFSA (2013) & CIR (2016)
Geometric mean (n=5)							**28.3 d)**			
pH-dependency							No			

a) Normalised using a Q10 of 2.58 and a Walker equation coefficient of 0.7 b) DT50 modelling calculated as DT90 FOMC/3.32
c) Values extrapolated beyond study duration d) Endpoint used in the PEC_{GW} and PEC_{SW} calculations

Table 8.3-5: Summary of aerobic degradation rates for IN-GAZ70 – laboratory studies

IN-GAZ70, Laboratory studies, aerobic conditions										
Soil type	pH (water)	t.ºC	MWHC %	DT50 (d)a)	DT50 at 20°C (d)	DT90 (d)a)	DT50 (d) 20°C pF2/10kPa b)	Chi^2 (%)	Kinetic model	Evaluated on EU level Y/N / Reference
Sassafras sandy loam / USA	5.5	25	40-60	3690	5927.0	12200	3877.6	0.7	SFO	Y / EFSA (2013) & CIR (2016)
Speyer 2.2 loamy sand / Germany	6.2	25	40-60	1050	1686.6	3500	1011.8	1.0	SFO	Y / EFSA (2013) & CIR (2016)
Lleida silty clay loam / Spain	8.1	25	40-60	741	1190.2	2460	877.2	1.7	SFO	Y / EFSA (2013) & CIR (2016)
Cajon sandy loam / USA	7.3	25	40-60	Stable	-	Stable	-	-	SFO	Y / EFSA (2013) & CIR (2016)
Tama silt loam / USA	6.0	25	40-60	1120	1799.0	3710	1220.5	0.3	SFO	Y / EFSA (2013) & CIR (2016)
Geometric mean/Median (n=4)							**1431.6 c)**			
pH-dependency: y/n							No			

a) Values extrapolated beyond study duration. b) Normalised using a Q10 of 2.58 and a Walker equation coefficient of 0.7
c) Endpoint used in the PEC_{GW} and PEC_{SW} calculations.
The SFO model passed all pertinent statistical and visual criteria and was therefore accepted for deriving modelling and persistence endpoints.

zRMS comments:

Soil degradation data for chlorantraniliprole and its metabolites are in line with EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016).

For relevant endpoints considered in exposure assessment, please refer to points 8.7 (soil), 8.8 (groundwater) and 8.9 (surface water) of this document.

8.3.2 Anaerobic degradation in soil (KCP 9.1.1.1)

Studies on anaerobic degradation in soil with formulation were not performed since it is possible to extrapolate from data obtained with the active ingredient.

Under anaerobic condition chlorantraniliprole exhibits high persistence with the DT50 value at 25°C determined to be 208 days. The major degradation product was IN-EQW78, which reached a maximum concentration of 26.68% AR at 120 days (i.e. end of study). The other degradation products seen in the aerobic studies were also detected, never exceeding concentration of 4% AR (EFSA 2013).

zRMS comments:
Anaerobic soil degradation data for chlorantraniliprole presented above are line with EU agreed endpoints reported in EFSA Journal 2013;11(6):3143.

8.4 Field studies (KCP 9.1.1.2)

8.4.1 Soil dissipation testing on a range of representative soils (KCP 9.1.1.2.1)

The field dissipation rate of chlorantraniliprole were evaluated during the EU assessment. No additional studies were submitted to the respective List of Endpoints for chlorantraniliprole (EFSA Journal 2013; 11(6):3143 and to confirmatory data (CIR, 2016). Data on soil dissipation of the active substance and its metabolites are presented in the following tables.

Triggering endpoints

Table 8.4-1: Summary of aerobic degradation rates for chlorantraniliprole – field studies: Triggering endpoints

Chlorantraniliprole, Field studies – Triggering endpoints									
Soil type	**Location**	**Extraction method** [a)]	**pH (water)**	**Depth (cm)** [b)]	**DissT$_{50}$ (d) actual**	**DT$_{90}$ (d) actual** [c)]	**St. (x^2)**	**Method of calculation**	**Evaluated on EU level Y/N / Reference**
Silt loam	Crespellano, Italy	Conventional	8.1	90	77	969	10.5	HS	Y / EFSA (2013) *(Study 12793*[d)]*)*
		Exhaustive			435	1445	15.6	SFO	
Sandy loam	Los Palacios, Spain	Conventional	8.1	90	122	404	10.5	SFO	Y / EFSA (2013) *(Study 12787* [d)]*)*
		Exhaustive			226	752	10.9	SFO	
Silt loam	Nuit-St-George, France	Conventional	7.7	90	248	822	10.3	SFO	Y / EFSA (2013) *(Study 12791* [d)]*)*
		Exhaustive			362	1204	10.7	SFO	
Silt loam	Nambsheim, France	Conventional	7.9	90	49	5628	13.4	FOMC α = 0.2464 β = 3.7887 (*Study 18938)*	Y / EFSA (2013) *(Study 12792* [d)]*)*
		Exhaustive			82	1020	14.8	HS	
Sandy loam	Porterville, CA, USA	Conventional	8.4	90	87	1297	9	FOMC α = 0.71 β = 52.46	Y / CIR (2016) *(Study 12785* [d)]*)*
		Exhaustive			148.3	5305	8	FOMC, α = 0.49, β = 46.92)	
Silt loam	Porterville, CA, USA	Conventional	8.1	90	38.6	562.4		HS k_1=0.018 d^{-1} k_2=0.002 d^{-1} tb=72.33 d	Y / CIR (2016) *(Study 12788 RV1* [d)]*)*
		Exhaustive			43.1	921.2	6	DFOP, k_1=0.00351 d^{-1} k^2=0.0015 d^{-1}, g =0.61	

Chlorantraniliprole, Field studies – Triggering endpoints									
Soil type	**Location**	**Extraction method [a)]**	**pH (water)**	**Depth (cm) [b)]**	**DissT$_{50}$ (d) actual**	**DT$_{90}$ (d) actual [c)]**	**St. (x^2)**	**Method of calculation**	**Evaluated on EU level Y/N / Reference**
Silt loam	Baptistown, NJ, USA	Conventional	6.6	90	254.8	2515.8	10	FOMC α = 0.93, β = 229.17	Y / CIR (2016) *(Study 12790 RV1 [d)])*
		Exhaustive			**697.9**	2318.4	8	SFO	
Silt loam	Goch, Germany	Exhaustive	6.4	90	489	1624	17.5	SFO	Y / EFSA (2013) *(Study 14444 [d)])*
Sandy loam	Suchozebry, Poland	Exhaustive	5.5	90	354	1175	22.7	SFO	Y / EFSA (2013) *(Study 14443 [d)])*
Sandy loam	Vittoria, Italy	Exhaustive	8.3	90	540	1793	12.6	SFO	Y / EFSA (2013) *(Study 14442 [d)])*
Silty clay loam	Lleida, Spain	Exhaustive	8.0	90	117	>1000	7.4	HS[f)]	Y / EFSA (2013) *(Study 14441 [d)])*
Silty clay loam	Marysville, OH, USA	Exhaustive	7.2	90	261.1	1324.2	11	DFOP k_1=0.1068 d^{-1}, k_2=0.0015 d^{-1}, g = 0.26	Y / CIR (2016) *(Study 14553 RV1 [d)])*
Sandy loam	Ephrata, WA, USA	Exhaustive	7.6	90	494	2462.1	6	DFOP k_1=0.0276 d^{-1}, k_2=0.0008 d^{-1} g=0.25	Y / CIR (2016) *(Study 14439 [d)])*
Loam	Paynesville, MN, USA	Exhaustive	6.7	90	122.8	2492.8	14	DFOP k_1=0.0442 d^{-1}, k_2=0.0007 d^{-1} g=0.46	Y / CIR (2016) *(Study 14440 RV2 [d)])*
- [e]Loam y sand	Dinuba, CA, USA - T1 plot	Exhaustive	- 6.4	90	133.7	3049.1	11	FOMC α = 0.58, β = 57.59	Y / CIR (2016) *(Study 26889 [d)])*
- [e)] Loamy sand	Dinuba, CA, USA - T2 plot [2]	Exhaustive	- [e)] 6.4	90	164.5	1197.1	9	FOMC, α = 1.23, β = 216.93	
- [e)] Sand	Atwater, CA, USA - T1 plot	Exhaustive	- [e)] 6.7	90	219	727.4	7	SFO	Y / CIR (2016) *(Study 26890 [d)])*
- [e)] Sand	Atwater, CA, USA - T2 plot	Exhaustive	- [e)] 6.7	90	200.5	665.9	11	SFO	

[a)] Data from both conventional and exhaustive extraction are available for four studies. Conventional extraction (aqueous, organic) removed readily extractable residues whereas exhaustive extraction (acid, 60°C) removed total residue.
[b)] Nominal depth of soil core. Any residue detected at any depth were summed for use in kinetic calculations.
[c)] DT$_{90}$ values extrapolated beyond study duration.
[d)] Studies summarised in the Chlorantraniliprole DAR Vol. 3, 2008 or in [e)] DAR Addendum, Vol. 3, B.8, December 2011.
[f)] Kinetic endpoints for Lleida dataset should correspond to FOMC fit (see Annex IIIA 2016 p. 28 and DAR vol. 3 B8 p. 531, 536).

Modelling endpoints

In the 2008 Chlorantraniliprole (DPX-E2Y45) - Volume 3 Supplement: Annex B-8, Environmental Exposure Assessment it is stated:

“*Conventional extraction versus exhaustive extraction:*

Two extraction methods were applied in four out of eight European field studies, therefore it was possible to differentiate between the readily available fraction of DPX-E2Y45 and the sequestered, or more strongly bound fraction. The latter could only be extracted with harsh extraction methods (hot acid) whereas the readily available fraction could be extracted with conventional methods. Member State experts considered that it was preferable to base kinetic analyses on conventionally extracted residue data, where available, as this gives a more realistic representation of substance availability for leaching under *field conditions. However, results for the conventional extraction were not available for four European field trials. The issue of whether to use exclusively conventional extraction or utilise both extraction types was considered by the panel of experts. It was noted that two of the four studies would have had relatively slow degradation even if they had been conventionally extracted. It was decided not to arbitrarily discard useful data just because it is more conservative. It was also noted that excluding the studies that were only exhaustively extracted would mean that there are no acidic soils remaining for use in the assessment. Consequently, in this case it was proposed that the four studies with only exhaustive extraction results should be utilised in addition to the conventional extraction results from the four studies where both extraction methods were used. This is a conservative approach as the total extractable residues represent the readily available fraction and the sequestered/bound or more difficult to extract residues. These difficult to extract residues appear to be largely protected from degradation. Member State experts noted it would have been preferable if the conventional extraction method had been used for all eight EU field studies. Experts considered that only field DT50 values should be used for modelling, since including laboratory results would result in an overly conservative assessment."*

The 2013 EFSA conclusion requested normalisation of all reliable field dissipation trials, i.e. European and ten North American field studies. The relevance of North American field dissipation for the EU was assessed using the Europe-North America Soil Geographic Information for Pesticide Studies (ENASGIPS) Crosswalk Tool with an OECD recommended acceptance criteria of 80% relevance (DuPont-38439 EU, summarised in the Chlorantraniliprole Addendum Confirmatory Information, Volume 3 Section 5, April 2016. Seven of the eleven study locations in North America met the soil and climate relevance criteria for EU conditions and are included for deriving modelling endpoints.

Inverse modelling approach was used for deriving field DT50 values for higher tier modelling. This supplementary information was assessed at EU level and summarised in the Addendum Confirmatory Information, Volume 3 Section 5, April 2016.

Field degT50 values for reliable soils normalised to 20°C and 100% FC along with field DT50 values derived from inverse modelling are summarised in the tables below (Table 8.4-2 and 8.4-3).

Table 8.4-2: Summary of aerobic degradation rates for chlorantraniliprole – field studies: Modelling endpoints

Chlorantraniliprole, Field studies – Modelling endpoints								
Soil type	**Location**	**Extraction method**	**pH (water)**	**Depth (cm)**	**DT50 (d) 20°C, 100% FC**	**St. (x^2)**	**Fit, Kinetic**	**Evaluated on EU level y/n/ Reference**
Silt loam	Crespellano, Italy[c)]	Conventional	8.1	90	128.6	14	SFO	Y / Amended list of endpoints CIR (2016) *(Study 12793[a)])*
Sandy loam	Los Palacios, Spain[c)]	Conventional	8.1	90	83.2	9	SFO	Y / Amended list of endpoints CIR (2016) *(Study 12787[a)])*
Silt loam	Nuit-St-George, France[c)]	Conventional	7.7	90	126.4	11	SFO	Y / Amended list of endpoints CIR (2016) *(Study 12791[a)])*
Silt loam	Nambsheim, France[c)]	Conventional	7.9	90	128.4	14	DFOP[d)]	Y / Amended list of endpoints CIR (2016) *(Study 12792[a)])*
Sandy loam	Porterville, CA USA	Conventional	8.4	90	144.5	13	SFO	Y / Amended list of endpoints CIR (2016) *(Study 12785[a)])*
Silt loam	Porterville, CA, USA	Conventional	8.1	90	278.2	8	FOMC[e)]	Y / Amended list of endpoints CIR (2016) *(Study 12788 Rev.1[a)])*
Silt loam	Baptistown , NJ USA	Conventional	6.6	90	177.0	9	SFO	Y / Amended list of endpoints CIR (2016) *(Study 12790 Rev.1[a)])*
Silt loam	Goch, Germany	Exhaustive	6.4	90	267.6	15	SFO	Y / Amended list of

Chlorantraniliprole, Field studies – Modelling endpoints								
Soil type	**Location**	**Extraction method**	**pH (water)**	**Depth (cm)**	**DT50 (d) 20°C, 100% FC**	**St. (x^2)**	**Fit, Kinetic**	**Evaluated on EU level y/n/ Reference**
								endpoints CIR (2016) *(Study 14444[a])*
Sandy loam	Suchozebry, Poland	Exhaustive	5.5	90	243.3	12	SFO	Y / Amended list of endpoints CIR (2016) *(Study 14443[a])*
Sandy loam	Vittoria, Italy	Exhaustive	8.3	90	461.3	11	SFO	Y / Amended list of endpoints CIR (2016) *(Study 14442[a])*
Silty clay loam	Lleida, Spain	Exhaustive	8.0	90	107.0	11	SFO	Y / Amended list of endpoints CIR (2016) *(Study 14441[a])*
Silty clay loam	Marysville, OH, USA	Exhaustive	7.2	90	145.9	11	SFO	Y / Amended list of end-points CIR (2016) *(Study 14553 Rev. 1[a])*
Sandy loam	Ephrata, WA, USA	Exhaustive	7.6	90	251.5	6	SFO	Y / Amended list of endpoints CIR (2016) *(Study 14439[a])*
Loam	Peynesville, MN, USA	Exhaustive	6.7	90	193.1	16	SFO	Y / Amended list of endpoints CIR (2016) *(Study 14440 Rev.2[a])*
- [b]	Dinuba, CA, USA, T1 plot	Exhaustive	- [b]	90	385.1	10	DFOP [d]	Y / Amended list of endpoints CIR (2016) *(Study 26889[b])*
- [b]	Dinuba, CA, USA, T2 plot	Exhaustive	- [b]	90	550	7	DFOP [d]	
- [b]	Atwater, CA, USA, T1 plot	Exhaustive	- [b]	90	195.2	7	SFO	Y / Amended list of endpoints CIR (2016) *(Study 26890[b])*
- [b]	Atwater, CA, USA, T2 plot	Exhaustive	- [b]	90	179.4	8	SFO	
Geometric mean (n=18)					**197.5** [f]			
pH-dependency y/n					No			

Studies summarised in [a] Chlorantraniliprole DAR Vol. 3, B8, December 2008 or in [b] DAR Addendum, Vol. 3, B.8, December 2011

[c] Residue data from both conventional and exhaustive extraction are available. Conventional extraction (aqueous, organic) removed readily extractable residues whereas exhaustive extraction (acid, 60°C) removed total residue including the sequestered (more difficult to extract) residues from soil. During EU review, Member State experts considered that it was preferable to base kinetic analyses on conventionally extracted residue data, where available as this gives a more realistic representation of substance availability for leaching under field conditions.

[d] DT50 of the 2nd phase of the DFOP model

[e] DT50 calculated as DT90 FOMC/3.32

[f] Endpoint used in the PEC_{GW} and $PECsw_{/SED}$ (Tier 1) calculations

Table 8.4-3: Summary of aerobic degradation rates for chlorantraniliprole derived from inverse modelling

Soil type	**Location**	**Extraction method**	**pH (x)**	**Depth (cm)**	**DT50 (d) 20°C, 100% FC**	**Fit, Kinetic**	**Evaluated on EU level y/n/ Reference**
Silt loam	Crespellano, Italy	Conventional	8.1	90	102.2	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 12793[a])*
Sandy loam	Los Palacios, Spain	Conventional	8.1	90	111.6	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 12787[a])*
Silt loam	Nuit-St-George, France	Conventional	7.7	90	104.8	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 12791[a])*
Silt loam	Nambsheim, France	Conventional	7.9	90	71.3	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016)

Soil type	Location	Extraction method	pH (x)	Depth (cm)	DT50 (d) 20°C, 100% FC	Fit, Kinetic	Evaluated on EU level y/n/ Reference
							(Study 12792[a])
Sandy loam	Porterville, CA USA	Conventional	8.4	90	91.7	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 12785[a])*
Silt loam	Goch, Germany	Exhaustive	6.4	90	243.5	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14444[a])*
Sandy loam	Suchozebry, Poland	Exhaustive	5.5	90	114.9	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14443[a])*
Sandy loam	Vittoria, Italy	Exhaustive	8.3	90	314.8	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14442[a])*
Silty clay loam	Lleida, Spain	Exhaustive	8.0	90	107.9	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14441[a])*
Silty clay loam	Marysville, OH, USA	Exhaustive	7.2	90	134.6	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14553 Rev. 1[a])*
Sandy loam	Ephrata, WA, USA	Exhaustive	7.6	90	211.4	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14439[a])*
Loam	Peynesville, MN, USA	Exhaustive	6.7	90	150.9	SFO, PEARL fit	Y / Amended list of endpoints CIR (2016) *(Study 14440 Rev. 2[a])*
Geometric mean (n=12)					133.4[b]		
pH-dependency y/n					No		

[a] Studies summarised in Chlorantraniliprole DAR Vol. 3, B8, December 2008
[b] Endpoint used in the PEC_{GW} and $PECsw_{/SED}$ (Tier 2) calculations.

zRMS comments:
Soil field degradation for chlorantraniliprole and its metabolites presented in Tables 8.4-1 to 8.4-3 above are in line with data reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). For relevant endpoints considered in exposure assessment, please refer to points 8.7 (soil), 8.8 (groundwater) and 8.9 (surface water) of this document.

8.4.2 Soil accumulation testing (KCP 9.1.1.2.2)

PEC_{soil} modelling results are available and provide reliable information on soil accumulation.

The accumulation potential of chlorantraniliprole and its metabolites in soil was investigated in four European trials (2 sites in Spain, 1 in France and 1 in Germany). The studies had been assessed at EU level and the endpoints summarised in the EFSA Conclusion (2013). The test substance formulated as a water dispersible granule (35 WG) was applied as a single broadcast application to a variety of crops (including courgettes, pear orchard, potato, spring wheat and tomatoes) at a target rate of approximately 100 g a.s./ha once per year at three sites and twice per year at one site, which is higher than the proposed maximum use rate for the European Union (60 g a.s./ha per application, 120 g a.s./ha per season). In general, application rates used in field trials were higher than the proposed maximum use rate for EU MSs (1 x 36 g a.s./ha to vines and 2 x 12 g a.s./ha to potatoes).
Overall, the accumulation studies are considered to provide tentative evidence that a plateau level may be being approached for chlorantraniliprole after 6 years, since the accumulation factor that can be estimated is decreasing. The decline in residues of chlorantraniliprole was followed by a rise in the concentrations

of the measured degradation products, IN-EQW78, IN-ECD73, and IN-GAZ70. However, there is no evidence that a plateau was being reached for any of these metabolites.

zRMS comments:

Information above regarding the accumulation potential of chlorantraniliprole and its metabolites is in line with the EFSA Journal 2013;11(6):3143.
Potential accumulation has been addressed in soil exposure assessment (please, refer to point 8.7 below).

8.5 Mobility in soil (KCP 9.1.2)

Studies on mobility in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

8.5.1 Adsorption and desorption in soil (KCP 9.1.2.1)

No new studies have been submitted regarding adsorption desorption in soil of chlorantraniliprole. The exposure modelling is based on EU Koc values (EFSA LoEP 2013) as summarised for chlorantraniliprole and its metabolites in the tables below.

Table 8.5-1: Summary of soil adsorption/desorption for chlorantraniliprole

Chlorantraniliprole							
Soil name	**Soil type**	**OC (%)**	**pH (-)**	**Kf (mL/g)**	**Kfoc (mL/g)**	**1/n (-)**	**Evaluated on EU level y/n/ Reference**
Los Palacios / Spain	loamy sand	0.5	7.7	1.2221	244	1.0028	Y / EFSA (2013)
Judson-Nodaway /USA	silty clay loam	1.7	5.7	9.158	539	1.0434	Y / EFSA (2013)
Marietta /USA	sandy loam	0.6	6.7	1.3602	227	0.8485	Y / EFSA (2013)
Tifton /USA	loamy sand	0.2	5.9	0.6334	317	0.937	Y / EFSA (2013)
Crespelano /Italy	loam	1.3	7.7	2.341	180	0.9256	Y / EFSA (2013)
Arithmetic mean (n=5)					301.4	0.95	
pH-dependency y/n					*No		

*In EFSA Journal 2013;11(6)_3143, section 4, EFSA concluded that adsorption to soil of the active substance chlorantraniliprole and its relevant soil metabolites was not pH dependent.

Table 8.5-2: Summary of soil adsorption/desorption for metabolite IN-EQW78

IN-EQW78							
Soil name	**Soil type**	**OC (%)**	**pH (-)**	**Kf (mL/g)**	**Kfoc (mL/g)**	**1/n (-)**	**Evaluated on EU level y/n/ Reference**
Los Palacios / Spain	loamy sand	0.5	7.7	36.0	4,499	0.8961	Y / EFSA (2013)
Judson-Nodaway /USA	silty clay loam	1.7	5.7	400.8	22,265	1.0296	Y / EFSA (2013)
Marietta /USA	sandy loam	0.6	6.7	63.3	12,660	0.8954	Y / EFSA (2013)
Tifton /USA	loamy sand	0.2	5.9	22.2	7,401	0.8800	Y / EFSA (2013)
Crespelano /Italy	loam	1.3	7.7	92.4	7,110	0.9004	Y / EFSA (2013)
Arithmetic mean (n=5)					10787	0.9203	
pH-dependency y/n					No		

Table 8.5-3: Summary of soil adsorption/desorption for metabolite IN-ECD73

IN-ECD73							
Soil name	**Soil type**	**OC (%)**	**pH (-)**	**Kf (mL/g)**	**Kfoc (mL/g)**	**1/n (-)**	**Evaluated on EU level y/n/ Reference**
Los Palacios / Spain	loamy sand	0.5	7.7	79.7	9,966	0.86	Y / EFSA (2013)
Judson-Nodaway /USA	silty clay loam	1.7	5.7	1782.8	99,044	1.09	Y / EFSA (2013)
Marietta /USA	sandy loam	0.6	6.7	67.1	13,410	0.78	Y / EFSA (2013)
Tifton /USA	loamy sand	0.2	5.9	39.7	13,221	0.77	Y / EFSA (2013)
Crespelano /Italy	loam	1.3	7.7	176.9	13,604	0.89	Y / EFSA (2013)
Arithmetic mean (n=5)					29849	0.88	
pH-dependency y/n					No		

Table 8.5-4: Summary of soil adsorption/desorption for metabolite IN-F6L99

IN-F6L99							
Soil name	**Soil type**	**OC (%)**	**pH (-)**	**Kf (mL/g)**	**Kfoc (mL/g)**	**1/n (-)**	**Evaluated on EU level y/n/ Reference**
Los Palacios / Spain	loamy sand	0.5	7.7	0.80	100	0.8892	Y / EFSA (2013)
Judson-Nodaway /USA	silty clay loam	1.7	5.7	1.62	90	0.8995	Y / EFSA (2013)
Marietta /USA	sandy loam	0.6	6.7	0.41	82	0.8898	Y / EFSA (2013)
Tifton /USA	loamy sand	0.2	5.9	1.34	448	0.9035	Y / EFSA (2013)
Crespelano /Italy	loam	1.3	7.7	0.45	35	0.9045	Y / EFSA (2013)
Arithmetic mean (n=5)					151	0.8973	
pH-dependency y/n					No		

Table 8.5-5: Summary of soil adsorption/desorption for metabolite IN-GAZ70

IN-GAZ70							
Soil name	**Soil type**	**OC (%)**	**pH (-)**	**Kf (mL/g)**	**Kfoc (mL/g)**	**1/n (-)**	**Evaluated on EU level y/n/ Reference**
Los Palacios / Spain	loamy sand	0.5	7.7	31.5	3,935	0.9135	Y / EFSA (2013)
Judson-Nodaway /USA	silty clay loam	1.7	5.7	NC*	NC	NC	Y / EFSA (2013)
Marietta /USA	sandy loam	0.6	6.7	145.2	29,049	0.9692	Y / EFSA (2013)
Tifton /USA	loamy sand	0.2	5.9	160.3	53,417	1.1160	Y / EFSA (2013)
Crespelano /Italy	loam	1.3	7.7	103.0	7,922	0.9127	Y / EFSA (2013)
Arithmetic mean (n=5)					23581	0.9779	
pH-dependency y/n					No		

* Concentration of IN-GAZ70 in the aqueous phase was below the limit of detection and Kf could not be calculated.

zRMS comments:

Soil mobility data for chlorantraniliprole and its metabolites presented in Tables 8.5-1 to 8.5-5 are in line with EU agreed endpoints reported in EFSA Journal 2013;11(6):3143.

8.5.2 Column leaching (KCP 9.1.2.1)

Column leaching study is not required since reliable adsorption coefficients were obtained from parent and metabolites from batch equilibrium sorption studies. However, an aged column leaching study with ^{14}C-radiolabelled active substances provides supplementary information on the impact of aged sorption on overall mobility of chlorantraniliprole. The study summary is available in the DAR (2008) and the end-points are included in EFSA Conclusion (2013). Mobility of ^{14}C-residues was investigated in three fresh spiked soils, in 90-days aged soils and in aged soils after extraction of readily extractable residues (water-organic extraction). In all soils, the aged soil columns retained higher amount of radioactivity in the applied soil layer after elution than the corresponding fresh soil columns, thus demonstrating that the aged residues of chlorantraniliprole in soil have decreased mobility. The experiment with post extracted soils demonstrated that once the readily extractable residues are removed from soil, the remained (sequestered) residues are essentially immobile.

zRMS comments:

Information on column leaching for chlorantraniliprole a is in line with conclusions derived at the EU level.

8.5.3 Field leaching studies (KCP 9.1.2.3)

No data are available from EU assessment of chlorantraniliprole.

zRMS comments:

Field leaching studies were not performed or required during the EU review.

8.6 Degradation in the water/sediment systems (KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3)

Studies on degradation in water/sediment systems with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. Degradation of active ingredient was investigated in dark, irradiated and anaerobic (dark) water sediment systems. Relevant studies are available in the DAR 2008, Vol 3, B8.

In two water/sediment systems incubated in natural sunlight degradation of chlorantraniliprole was faster to some extent than in the dark (DAR 2008, Volume 3, B8). Degradation is not driven by photolysis, but by light induced fluctuation in pH as formation of major degradation product IN-EQW78 was enhanced in alkaline water (pH greater than 9.7) and sediment (pH greater than 8). Furthermore, typical products of photolysis (IN-LBA22, IN-LBA23 and IN-LBA23) were not found in significant amount. In anaerobic water/sediment system chlorantraniliprole dissipated from water via partitioning to sediment and degradation to IN-EQW78. IN-EQW78 was the major metabolite in water and in sediment but not pH was responsible for degradation of test substance as chlorantraniliprole only undergo hydrolysis at pH > 9 whereas the average pH in the water phase of the anaerobic system was lower (7.8 ± 0.4).

8.6.1 Water/sediment (dark) studies

Degradation of chlorantraniliprole in the aquatic environment under aerobic conditions was investigated in two water sediment systems under dark conditions. Chlorantraniliprole partitioned in the sediment to a significant extent and underwent to further degradation in the sediment phase. No major metabolites (>5%) were formed in the water phase but numerous minor degradation products were identified: IN-F6L99, IN-F9N04 and IN-GAZ70, IN-EQW78 and IN-ECD73. However, in the sediment phase of both test system IN-EQW78 was a major metabolite with a maximum concentration of 34.69% AR (loam, day 75). All the other metabolites found in water phase were observed also in sediment as minor components. Mineralisation to CO_2 was less than 1% AR and unextractable residues reached maximum of 7.5% AR (sand sediment). Persistence endpoints for the whole system (DegT50) and the water compartment

(DissT50) for chlorantraniliprole (Level P-I, FOCUS 2006 & 2013) and the major metabolite IN-EQW78 (Level M-I, FOCUS 2006 & 2013) are presented in the following two tables.

Table 8.6-1: Summary of degradation in water/sediment (dark) of chlorantraniliprole

Chlorantraniliprole distribution: Sand: max in water 97.83% at 0 d; max in sediment 56.06% after 75 d Loam: max in water 95.77% at 0 d; max in sediment 65.14% after 50 d [benzamide carbonyl-^{14}C] and [pyrazole carbonyl-^{14}C] labels												
Water/ sediment system	**pH water/ sed.**	**T (°C)**	**DegT50 whole syst. (d)**	**DegT90 whole syst. (d)**	**Norm DegT$_{50}$ at 20°C**	**Kinetic, Fit / St. (x^2)**	**DissT50 water (d)**	**DissT90 water (d)**	**Kinetic, Fit / St. (x^2)**	**DissT50 sed. (d)**	**Kinetic, Fit**	**Evaluated on EU level Y/N/ Reference**
Sand (France)	6.7 / 6.2	25	231[a)]	768[a)]	343	SFO / 1.67	38	127[a)]	SFO / 7.35	-	-	Y / EFSA (2013); DAR (2008), Vol. 3 B8 part 2 and Appendix I. *(Study 12781)*
Loam (UK)	7.8 / 7.5	25	125[a)]	414[a)]	185	SFO / 2.85	8.5	78.7	FOMC / 11.8	-	-	
Geometric mean (n=2)			170	564	252 (**267**[b)])							

[a)] Values extrapolated beyond the study duration (100 days)
[b)] Geometric mean whole system half-life normalised at 20°C using a Q10 of 2.58 (EFSA 2013 p. 74) was used for calculation of PECsw.

Note: in the EU assessment (DAR 2008, Vol.3 Annex B8 Appendix I) normalisation of DT50 at 20°C was calculated using a Q10 of 2.2 for soil and water/sediment kinetic endpoints. In confirmatory data no normalisation of water-sediment DT50 with appropriate Q10 value is available, whereas normalised soil degradation DT50 were recalculated.

Table 8.6-2: Summary of degradation in water/sediment (dark) of metabolite IN-EQW78

IN-EQW 78 distribution: Sand: max in water 0.81% after 10 d; max in sediment 14.68% after 100 d Loam: max in water 1.49% after 3 d; max in sediment 34.69% after 75 d [benzamide carbonyl-^{14}C] and [pyrazole carbonyl-^{14}C] labels												
Water/sediment system	**pH water/ sed.**	**T (°C)**	**DegT50 whole syst. (d)**	**DegT90 whole syst. (d)**	**Kinetic, Fit / St. (x^2)**	**DissT50 water (d)**	**DissT90 water (d)**	**Kinetic, Fit / St. (x^2)**	**DissT50 sed. (d)**	**Kinetic, Fit**	**Evaluated on EU level Y/N / Reference**
Sand (France)	6.7 / 6.2	25	680[a)b)]	2260[a)b)]	SFO / 3.3	-[c)]	-[c)]	-[c)]	680 [a)b)]	SFO / 3.3	Y / EFSA (2013); DAR Vol. 3 B8 part 2, (2008) *(Study 12781)*
Loam (UK)	7.8 / 7.5	25	121[a)b)]	402[a)b)]	SFO / 11.5	-[c)]	-[c)]	-[c)]	121 [a)b)]	SFO / 11.5	
Geometric mean (n=2)			287	953					287		

[a)] Values extrapolated beyond the study duration (100 days)
[b)] Statistically reliable DT$_{50}$ whole system could not be determined as IN-EQW 78 was observed to increase in three out four systems
[c)] No significant amount of metabolite IN-EQW 78 present in water compartment.

8.6.2 Irradiated water/sediment studies

Information on degradation of chlorantraniliprole in irradiated water/sediment is available in two systems incubated for 14 days in natural sunlight. Degradation in irradiated systems was faster than in dark incubation. Nevertheless, degradation is not driven by photolysis, but by light induced fluctuation in pH. It was observed that formation of major degradation product IN-EQW78 was enhanced in alkaline conditions (pH of water and sediment greater than 9.7 and 8, respectively). This result is consistent with the hydrolytic behaviour chlorantraniliprole which is unstable at pH 9 (EFSA 2013). Furthermore, typical products of photolysis (IN-LBA22, IN-LBA23 and IN-LBA23) were not found in significant amount.

Table 8.6-3: Summary of degradation in irradiated water/sediment of chlorantraniliprole

Chlorantraniliprole distribution: Loamy sand: max in water 76.9% at 0 d; max in sediment 27.1% after 7 d Sandy loam: max in water 94.5% at 0 d; max in sediment 38.6% after 5 d [benzamide carbonyl-^{14}C] and [pyrazole carbonyl-^{14}C] labels											
Water/sediment system	**pH water/ sed.**	**T (°C)**	**$DegT_{50}$ whole syst. (d)**	**$DegT_{90}$ whole syst. (d)**	**Kinetic, Fit / St. (x^2)**	**$DissT_{50}$ water (d)**	**$DissT_{90}$ water (d)**	**Kinetic, Fit / St. (x^2)**	**$DissT_{50}$ sed. (d)**	**Kinetic, Fit**	**Evaluated on EU level Y/N/ Reference**
Loamy sand (UK)	7.9/5.4	20	22[a)]	79[a)]	SFO / 2	9.1	30[a)]	SFO / 8	-	-	y / EFSA 2013 *(Study 14438 Rev.1)*
Sandy loam (Italy)	8.0/7.9	20	10	33[a)]	SFO / 8	4.1	14[a)]	FOMC / 8	-	-	
Geometric mean (n=2)			15	51							

[a)] Values extrapolated beyond the study duration (14 days)
DegT50 whole system values ranged from 43 to 91 days in non-irradiated systems.

Table 8.6-4: Summary of degradation in irradiated water/sediment of metabolite IN-EQW78

IN-EQW78 distribution: Loamy sand: not detected in water; max in sediment 1.0% after 14d Sandy loam: max in water 6.4% at 7 d; max in sediment 38.1% after 14 d; max in whole system 41%[a)] after 14 d [benzamide carbonyl-^{14}C] and [pyrazole carbonyl-^{14}C] labels										
Water/sediment system	**pH water/sed.**	**T (°C)**	**DT_{50}/DT_{90} whole syst. (d)**	**St. (x^2)**	**DT_{50}/DT_{90} water (d)**	**St. (x^2)**	**DT_{50}/DT_{90} sed. (d)**	**St. (x^2)**	**Evaluated on EU level Y/N/ Reference**
Loamy sand (UK)	7.9/5.4	20	Not calculated						Y / EFSA (2013) *(Study 14438 Rev.1)*
Sandy loam (Italy)	8.0/7.9	20	Not calculated						

a) Maximum occurrence used for calculation of PECsw and PECsed for IN-EQW78.

8.6.3 Anaerobic water/sediment (dark) studies

In an anaerobic water/sediment system loss of chlorantraniliprole from water was rapid. Loss from water was attributed to both degradation and partitioning to sediment. IN-EQW78 was the major metabolite in water and in sediment but not pH was responsible for degradation of test substance as chlorantraniliprole only undergo hydrolysis at pH > 9 whereas the average pH in the water phase of the anaerobic system was lower (7.8 ± 0.4). Under anaerobic condition, reducing condition are considered to enhance degradation of chlorantraniliprole in both the water and sediment. Numerous other metabolites are observed in water and sediment. IN-ECD73 was the only other metabolite that exceeded 5% AR (max 5.17% AR in sediment). IN-F6L99, IN-F9N04 and IN-GAZ70 were observed as minor metabolites. Non-extractable residues reached maximum of 4.93% AR and no significant CO2 was observed.

Table 8.6-5: Summary of degradation in anaerobic water/sediment (dark) of chlorantraniliprole

Parent: DPX-E2Y45			**Distribution: max in water 94.0% at 0 d. Max. sed 34.03% after 30 d**								
Water / sediment system	**pH water**	**pH sed**	**T (°C)**	**DT_{50}-DT_{90} whole system (d)**	**St. (r^2)**	**DT_{50}-DT_{90} water (d)**	**St. (r^2)**	**DT_{50}-DT_{90} sed (d)**	**St. (r^2)**	**Method of calculation**	**Evaluated on EU level Y/N/ Reference**
Loam (UK)	7.1	6.8	25	42-814§	0.958	17-55	0.978	Not calculated	0.958	FOMC	Y / EFSA (2013) *(Study 12995 Rev.1)*

§ Denotes values extrapolated beyond study duration (365 days).

Table 8.6-6: Summary of degradation in anaerobic water/sediment (dark) of metabolite IN-EQW78

Metabolite IN-EQW78	**Distribution: max in water 19.5% after 21 d; max in sediment 67.8% after 181 d**									
Water / sediment system	**pH water/sed.**	**T (°C)**	**DT_{50}/DT_{90} whole syst. (d)§**	**St. (r^2)**	**DT_{50}/DT_{90} water (d)**	**St. (r^2)**	**DT_{50}/DT_{90} sed. (d)§**	**St. (r^2)**	**Method of calculation**	**Evaluated on EU level Y/N/ Reference**
Loam (UK)	7.1/6.8	25	701-2330	0.958	17-55	0.978	Not calculated*	0.958	SFO	Y / EFSA (2013) *(Study 12995 Rev.1)*

***** Whole system values were used for sediment.
§ Denotes values extrapolated beyond study duration (365 days).
Parent and metabolite modelled in sequence.

zRMS comments:
Information on degradation of chlorantraniliprole and its metabolites in water/sediment systems presented in Tables 8.6-1 to 8.6-6 is in line with the EFSA Journal 2013;11(6):3143. Potential accumulation has been addressed in soil exposure assessment (please, refer to point 8.7 below).

8.7 Predicted Environmental Concentrations in soil (PEC_{soil}) (KCP 9.1.3)

8.7.1 Justification for new endpoints

EU-agreed endpoints were used for PEC_{SOIL} modelling of chlorantraniliprole and its metabolites (EFSA, 2013 and CIR, 2016).

8.7.2 Active substance(s) and relevant metabolite(s)

Table 8.7-1: Parameters related to application and crops for modelling

FOCUS crop [-]	Application rate [g a.s./ha]	No. applications [-] / interval [days]	BBCH growth stage [-]	Crop interception [%]	Soil loading [g a.s./ha]
Single application – Arable crops					
Cabbage	**28**	**1 / -**	**15-49**	**25**	**21.0**
Maize	28	1 / -	20-87	50	14
Potatoes	12	1 /-	31-60	60	4.8
Single application – Permanent crops (vineyards/orchards)					
Vines	**36**	**1 / -**	**57-83**	**60**	**14.4**
Apples	31	1 / -	70-87	65	10.9
Apples	24	1 / -	70-87	65	8.4
Multiple applications					
Potatoes	**12**	**2 / 7**	**31-60**	**60**	**4.8**

* A risk envelope approach was used, where the row in **bold** representing the worst-case soil application based on highest soil loadings, were modelled.

The soil loading was calculated based on the individual application rates using the CRD Excel PECsoil calculator (CRD, 2015). The crop interception values were taken from the current FOCUS GW guidance (FOCUS, 2021). The PEC_{soil} was calculated for a soil depth of 5 cm and a soil density of 1.5 g/cm^3 and the PEC plateau concentrations and the $PEC_{soil,\ accumulation}$ were calculated for a tillage depth of 20 cm for cabbage (single application) and potatoes (multiple applications) and 5 cm for vines.

Table 8.7-2: Input parameter for active substance and relevant metabolites for PEC_{soil} calculation

Compound	Molar mass (g/mol)	Maximum occurrence (%)	DT_{50} (days)	Value in accordance to EU endpoint Y/N/Reference
Chlorantraniliprole	483.15	-	Tier 1: 1453.6 (longest, lab., geomean of Marietta soils) Tier 2: 697.9 (longest representative, field studies (Baptistown (NJ, USA) soil)	Y / CIR (2016)
IN-EQW78	465.14	31.7	1260.9 (longest, lab studies)	Y / CIR (2016)
IN-ECD73	279.13	11.3	25699.8 (longest, lab studies)	Y / CIR (2016)
IN-F6L99	204.03	2.2	125.3* (longest, lab studies)	Y / CIR (2016)
IN-F9N04	469.12	4.8	1453.6 (parent value)	Y / CIR (2016)
IN-GAZ70	451.11	4.4	5927 (longest, lab studies s)	Y / CIR (2016)

*This is derived from the FOMC DT_{90} in the Tama soil at 25°C which was divided by 3.32 and normalised to 20°C (Q_{10} 2.58). The FOMC DT_{90} is listed in the LoEP of the 2013 EFSA conclusion. In addition, the longest DT_{90} was observed in the Tama soil. The original SFO DT_{50} (159 d at 20°C, Q_{10} 2.2, Marietta soil (35°C) used in PEC soil calculations failed the t-test and had an unacceptably large confidence interval.

Table 8.7-3: PEC$_{soil}$ for chlorantraniliprole on cabbage at Tier 1

PEC$_{soil}$ (mg/kg)		Cabbage, 1 × 28 g a.s./ha, 25% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.028	-	-	-
Short term	24h	0.028	0.028	-	-
	2d	0.028	0.028	-	-
	4d	0.028	0.028	-	-
Long term	7d	0.028	0.028	-	-
	14d	0.028	0.028	-	-
	21d	0.028	0.028	-	-
	28d	0.028	0.028	-	-
	48d	0.027	0.028	-	-
	100d	0.027	0.027	-	-
Plateau concentration (20 cm tillage) after year 29		0.037	-	-	-
PEC$_{accumulation}$ (20 cm tillage)		0.065 ~~0.044~~	-	-	-

Table 8.7-4: PEC$_{soil}$ for chlorantraniliprole on cabbage at Tier 2

PEC$_{soil}$ (mg/kg)		Cabbage, 1 × 28 g a.s./ha, 25% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.028	-	-	-
Short term	24h	0.028	0.028	-	-
	2d	0.028	0.028	-	-
	4d	0.028	0.028	-	-
Long term	7d	0.028	0.028	-	-
	14d	0.028	0.028	-	-
	21d	0.027	0.028	-	-
	28d	0.027	0.028	-	-
	48d	0.027	0.027	-	-
	100d	0.025	0.027	-	-
Plateau concentration (20 cm tillage) after year 11		0.016	-	-	-
PEC$_{accumulation}$ (20 cm tillage)		0.044 ~~0.023~~	-	-	-

Table 8.7-5: PEC$_{soil}$ for chlorantraniliprole on vines at Tier 1

PEC$_{soil}$ (mg/kg)		Vines, 1 × 36 g a.s./ha, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.019	-	-	-
Short term	24h	0.019	0.019	-	-
	2d	0.019	0.019	-	-
	4d	0.019	0.019	-	-
Long term	7d	0.019	0.019	-	-
	14d	0.019	0.019	-	-
	21d	0.019	0.019	-	-
	28d	0.019	0.019	-	-
	48d	0.019	0.019	-	-
	100d	0.019	0.019	-	-
Plateau concentration (5 cm tillage) after year 32		0.101	-	-	-
PEC$_{accumulation}$ (5 cm tillage)		0.120	-	-	-

Table 8.7-6: PEC_{soil} for chlorantraniliprole on vines at Tier 2

PEC_{soil} (mg/kg)		Vines, 1 × 36 g a.s./ha, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.019	-	-	-
Short term	24h	0.019	0.019	-	-
	2d	0.019	0.019	-	-
	4d	0.019	0.019	-	-
Long term	7d	0.019	0.019	-	-
	14d	0.019	0.019	-	-
	21d	0.019	0.019	-	-
	28d	0.019	0.019	-	-
	48d	0.018	0.019	-	-
	100d	0.017	0.018	-	-
Plateau concentration (5 cm tillage) after year 14		0.044	-	-	-
$PEC_{accumulation}$ (5 cm tillage)		0.063	-	-	-

Table 8.7-7: PEC_{soil} for chlorantraniliprole on potatoes at Tier 1

PEC_{soil} (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.006	-	0.013	-
Short term	24h	0.006	0.006	0.013	0.013
	2d	0.006	0.006	0.013	0.013
	4d	0.006	0.006	0.013	0.013
Long term	7d	0.006	0.006	0.013	0.013
	14d	0.006	0.006	0.013	0.013
	21d	0.006	0.006	0.013	0.013
	28d	0.006	0.006	0.013	0.013
	48d	0.006	0.006	0.012	0.013
	100d	0.006	0.006	0.012	0.012
Plateau concentration (20 cm tillage) after year 24		-	-	0.017	-
$PEC_{accumulation}$ (20 cm tillage)		-	-	0.030 ~~0.020~~	-

Table 8.7-8: PEC_{soil} for chlorantraniliprole on potatoes at Tier 2

PEC_{soil} (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.006	-	0.013	-
Short term	24h	0.006	0.006	0.013	0.013
	2d	0.006	0.006	0.013	0.013
	4d	0.006	0.006	0.013	0.013
Long term	7d	0.006	0.006	0.013	0.013
	14d	0.006	0.006	0.013	0.013
	21d	0.006	0.006	0.012	0.013
	28d	0.006	0.006	0.012	0.013
	48d	0.006	0.006	0.012	0.012
	100d	0.006	0.006	0.012	0.012
Plateau concentration (20 cm tillage) after year 7		-	-	0.007	-
$PEC_{accumulation}$ (20 cm tillage)		-	-	0.020 ~~0.010~~	-

PEC_{soil} of metabolites

Table 8.7-9: PEC_{soil} for metabolite IN-EQW78 on cabbage

PEC_{soil} (mg/kg)		**Cabbage, 1 × 28 g a.s./ha, 25% crop interception**			
		Single application		**Multiple applications**	
		Actual	**TWA**	**Actual**	**TWA**
Initial		0.009	-	-	-
Short term	24h	0.009	0.009	-	-
	2d	0.009	0.009	-	-
	4d	0.009	0.009	-	-
Long term	7d	0.009	0.009	-	-
	14d	0.008	0.009	-	-
	21d	0.008	0.008	-	-
	28d	0.008	0.008	-	-
	48d	0.008	0.008	-	-
	100d	0.008	0.008	-	-
Plateau concentration (20 cm tillage) after year 24		0.010	-	-	-
$PEC_{accumulation}$ (20 cm tillage)		0.018 ~~0.012~~	-	-	-

Table 8.7-10: PEC_{soil} for metabolite IN-EQW78 on vines

PEC_{soil} (mg/kg)		**Vines, 1 × 36 g a.s./ha, 60% crop interception**			
		Single application		**Multiple applications**	
		Actual	**TWA**	**Actual**	**TWA**
Initial		0.006	-	-	-
Short term	24h	0.006	0.006	-	-
	2d	0.006	0.006	-	-
	4d	0.006	0.006	-	-
Long term	7d	0.006	0.006	-	-
	14d	0.006	0.006	-	-
	21d	0.006	0.006	-	-
	28d	0.006	0.006	-	-
	48d	0.006	0.006	-	-
	100d	0.006	0.006	-	-
Plateau concentration (5 cm tillage) after year 19		0.026	-	-	-
$PEC_{accumulation}$ (5 cm tillage)		0.032	-	-	-

Table 8.7-11: PEC$_{soil}$ for metabolite IN-EQW78 on potatoes

PEC$_{soil}$ (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.002	-	0.004	-
Short term	24h	0.002	0.002	0.004	0.004
	2d	0.002	0.002	0.004	0.004
	4d	0.002	0.002	0.004	0.004
Long term	7d	0.002	0.002	0.004	0.004
	14d	0.002	0.002	0.004	0.004
	21d	0.002	0.002	0.004	0.004
	28d	0.002	0.002	0.004	0.004
	48d	0.002	0.002	0.004	0.004
	100d	0.002	0.002	0.004	0.004
Plateau concentration (20 cm tillage) after year 10		-	-	0.004	-
PEC$_{accumulation}$ (20 cm tillage)		-	-	0.008 ~~0.005~~	-

Table 8.7-12: PEC$_{soil}$ for metabolite IN-ECD73 on cabbage

PEC$_{soil}$ (mg/kg)		Cabbage, 1 × 28 g a.s./ha, 25% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.002	-	-	-
Short term	24h	0.002	0.002	-	-
	2d	0.002	0.002	-	-
	4d	0.002	0.002	-	-
Long term	7d	0.002	0.002	-	-
	14d	0.002	0.002	-	-
	21d	0.002	0.002	-	-
	28d	0.002	0.002	-	-
	48d	0.002	0.002	-	-
	100d	0.002	0.002	-	-
Plateau concentration (20 cm tillage) after year >50		0.018	-	-	-
PEC$_{accumulation}$ (20 cm tillage)		0.018	-	-	-

Table 8.7-13: PEC$_{soil}$ for metabolite IN-ECD73 on vines

PEC$_{soil}$ (mg/kg)		Vines, 1 × 36 g a.s./ha, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.001		-	-
Short term	24h	0.001	0.001	-	-
	2d	0.001	0.001	-	-
	4d	0.001	0.001	-	-
Long term	7d	0.001	0.001	-	-
	14d	0.001	0.001	-	-
	21d	0.001	0.001	-	-
	28d	0.001	0.001	-	-
	48d	0.001	0.001	-	-
	100d	0.001	0.001	-	-
Plateau concentration (5 cm tillage) after year >50		0.048	-	-	-
PEC$_{accumulation}$ (5 cm tillage)		0.050	-	-	-

Table 8.7-14: PEC_{soil} for metabolite IN-ECD73 on potatoes

PEC_{soil} (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		< 0.001	-	0.001	-
Short term	24h	< 0.001	< 0.001	0.001	0.001
	2d	< 0.001	< 0.001	0.001	0.001
	4d	< 0.001	< 0.001	0.001	0.001
Long term	7d	< 0.001	< 0.001	0.001	0.001
	14d	< 0.001	< 0.001	0.001	0.001
	21d	< 0.001	< 0.001	0.001	0.001
	28d	< 0.001	< 0.001	0.001	0.001
	48d	< 0.001	< 0.001	0.001	0.001
	100d	< 0.001	< 0.001	0.001	0.001
Plateau concentration (20 cm tillage) after year >50		-	-	0.008	-
$PEC_{accumulation}$ (20 cm tillage)		-	-	0.008	-

Table 8.7-15: PEC_{soil} for metabolite IN-F6L99 on cabbage

PEC_{soil} (mg/kg)		Cabbage, 1 × 28 g a.s./ha, 25% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		<0.001	-	-	-
Short term	24h	<0.001	<0.001	-	-
	2d	<0.001	<0.001	-	-
	4d	<0.001	<0.001	-	-
Long term	7d	<0.001	<0.001	-	-
	14d	<0.001	<0.001	-	-
	21d	<0.001	<0.001	-	-
	28d	<0.001	<0.001	-	-
	48d	<0.001	<0.001	-	-
	100d	<0.001	<0.001	-	-
Plateau concentration (20 cm tillage)		<0.001	-	-	-
$PEC_{accumulation}$ (20 cm tillage)		<0.001	-	-	-

Table 8.7-16: PEC_{soil} for metabolite IN-F6L99 on vines

PEC_{soil} (mg/kg)		Vines, 1 × 36 g a.s./ha, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		<0.001	-	-	-
Short term	24h	<0.001	<0.001	-	-
	2d	<0.001	<0.001	-	-
	4d	<0.001	<0.001	-	-
Long term	7d	<0.001	<0.001	-	-
	14d	<0.001	<0.001	-	-
	21d	<0.001	<0.001	-	-
	28d	<0.001	<0.001	-	-
	48d	<0.001	<0.001	-	-
	100d	<0.001	<0.001	-	-
Plateau concentration (5 cm tillage)		<0.001	-	-	-
$PEC_{accumulation}$ (5 cm tillage)		<0.001	-	-	-

Table 8.7-17: PEC_{soil} for metabolite IN-F6L99 on potatoes

PEC_{soil} (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		<0.001	-	<0.001	-
Short term	24h	<0.001	<0.001	<0.001	<0.001
	2d	<0.001	<0.001	<0.001	<0.001
	4d	<0.001	<0.001	<0.001	<0.001
Long term	7d	<0.001	<0.001	<0.001	<0.001
	14d	<0.001	<0.001	<0.001	<0.001
	21d	<0.001	<0.001	<0.001	<0.001
	28d	<0.001	<0.001	<0.001	<0.001
	48d	<0.001	<0.001	<0.001	<0.001
	100d	<0.001	<0.001	<0.001	<0.001
Plateau concentration (20 cm tillage)		-	-	<0.001	-
$PEC_{accumulation}$ (20 cm tillage)		-	-	<0.001	-

Table 8.7-18: PEC_{soil} for metabolite IN-F9N04 on cabbage

PEC_{soil} (mg/kg)		Cabbage, 1 × 28 g a.s./ha, 25% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.001	-	-	-
Short term	24h	0.001	0.001	-	-
	2d	0.001	0.001	-	-
	4d	0.001	0.001	-	-
Long term	7d	0.001	0.001	-	-
	14d	0.001	0.001	-	-
	21d	0.001	0.001	-	-
	28d	0.001	0.001	-	-
	48d	0.001	0.001	-	-
	100d	0.001	0.001	-	-
Plateau concentration (20 cm tillage) after year 8		0.001	-	-	-
$PEC_{accumulation}$ (20 cm tillage)		0.002	-	-	-

Table 8.7-19: PEC_{soil} for metabolite IN-F9N04 on vines

PEC_{soil} (mg/kg)		Vines, 1 × 36 g a.s./ha, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.001	-	-	-
Short term	24h	0.001	0.001	-	-
	2d	0.001	0.001	-	-
	4d	0.001	0.001	-	-
Long term	7d	0.001	0.001	-	-
	14d	0.001	0.001	-	-
	21d	0.001	0.001	-	-
	28d	0.001	0.001	-	-
	48d	0.001	0.001	-	-
	100d	0.001	0.001	-	-
Plateau concentration (5 cm tillage) after year 24		0.005	-	-	-
$PEC_{accumulation}$ (5 cm tillage)		0.006	-	-	-

Table 8.7-20: PEC_{soil} for metabolite IN-F9N04 on potatoes

PEC_{soil} (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		< 0.001	-	0.001	-
Short term	24h	< 0.001	< 0.001	0.001	0.001
	2d	< 0.001	< 0.001	0.001	0.001
	4d	< 0.001	< 0.001	0.001	0.001
Long term	7d	< 0.001	< 0.001	0.001	0.001
	14d	< 0.001	< 0.001	0.001	0.001
	21d	< 0.001	< 0.001	0.001	0.001
	28d	< 0.001	< 0.001	0.001	0.001
	48d	< 0.001	< 0.001	0.001	0.001
	100d	< 0.001	< 0.001	0.001	0.001
Plateau concentration (20 cm tillage) after year 20		-	-	0.001	-
$PEC_{accumulation}$ (20 cm tillage)		-	-	0.001	-

Table 8.7-21: PEC_{soil} for metabolite IN-GAZ70 on cabbage

PEC_{soil} (mg/kg)		Cabbage, 1 × 28 g a.s./ha, 25% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.001	-	-	-
Short term	24h	0.001	0.001	-	-
	2d	0.001	0.001	-	-
	4d	0.001	0.001	-	-
Long term	7d	0.001	0.001	-	-
	14d	0.001	0.001	-	-
	21d	0.001	0.001	-	-
	28d	0.001	0.001	-	-
	48d	0.001	0.001	-	-
	100d	0.001	0.001	-	-
Plateau concentration (20 cm tillage) after year >50		0.006	-	-	-
$PEC_{accumulation}$ (20 cm tillage)		0.006	-	-	-

Table 8.7-22: PEC_{soil} for metabolite IN-GAZ70 on vines

PEC_{soil} (mg/kg)		Vines, 1 × 36 g a.s./ha, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		0.001	-	-	-
Short term	24h	0.001	0.001	-	-
	2d	0.001	0.001	-	-
	4d	0.001	0.001	-	-
Long term	7d	0.001	0.001	-	-
	14d	0.001	0.001	-	-
	21d	0.001	0.001	-	-
	28d	0.001	0.001	-	-
	48d	0.001	0.001	-	-
	100d	0.001	0.001	-	-
Plateau concentration (5 cm tillage) after year >50		0.016	-	-	-
$PEC_{accumulation}$ (5 cm tillage)		0.017	-	-	-

Table 8.7-23: PEC_{soil} for metabolite IN-GAZ70 on potatoes

PEC_{soil} (mg/kg)		Potatoes, 2 × 12 g a.s./ha, 7-d interval, 60% crop interception			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		< 0.001	-	0.001	-
Short term	24h	< 0.001	< 0.001	0.001	0.001
	2d	< 0.001	< 0.001	0.001	0.001
	4d	< 0.001	< 0.001	0.001	0.001
Long term	7d	< 0.001	< 0.001	0.001	0.001
	14d	< 0.001	< 0.001	0.001	0.001
	21d	< 0.001	< 0.001	0.001	0.001
	28d	< 0.001	< 0.001	0.001	0.001
	48d	< 0.001	< 0.001	0.001	0.001
	100d	< 0.001	< 0.001	0.001	0.001
Plateau concentration (20 cm tillage) after year >50		-	-	0.003	-
$PEC_{accumulation}$ (20 cm tillage)		-	-	0.003	-

zRMS comments:

The application pattern assumed in soil exposure assessment presented in Table 8.7-1 is in line with the critical Central Zone GAP and it is thus agreed by the zRMS. Relevant crop interceptions in line with FOCUS groundwater guidance (2014) have been selected.

Input parameters presented in Table 8.7-2 for Tier 1 and Tier 2 are in line with the EU agreed parameters reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016), respectively.

The soil exposure for chlorantraniliprole and its metabolite has been independently validated by the zRMS using FOCUS methods and EU agreed endpoints and the pseudo-application rates of metabolite derived with consideration of the parent rate, molar ratio and peak occurrence in soil.

The calculated PEC_{SOIL} values were in general in good agreement with these obtained by the Applicant with few exception of $PEC_{accumulation}$ which was considerably higher in zRMS calculations. Therefore, respective changes were introduced in tables above

8.7.2.1 PEC_{soil} of formulation

As the formulation only contains a single active substance, the evaluation of PECsoil for the formulation is covered by the soil risk assessment for the active substance (refer to section 8.7.2)

zRMS comments:

It is agreed by the zRMS that soil exposure for the formulated product ADM.00900.I.1.C is covered by the soil risk assessment calculated for the active substance.

8.8 Predicted Environmental Concentrations in groundwater (PEC_{gw}) (KCP 9.2.4)

8.8.1 Justification for new endpoints

EU-agreed endpoints were used for PEC_{GW} modelling of chlorantraniliprole and its metabolites (EFSA, 2013 and CIR, 2016).

8.8.2 Active substance(s) and relevant metabolite(s) (KCP 9.2.4.1)

PEC groundwater calculations are described below and reported in detail in the following modelling report.

Report	Worthington M. (2021a)
Title	Chlorantraniliprole – A leaching assessment for chlorantraniliprole and its metabolites IN-EQW78, IN-ECD73, IN-F6L99, IN-F9N04 and IN-GAZ70 using the FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4 groundwater models following spray application to various crops in Central Europe
Document No	S21-06597-06/003
Guidelines	FOCUS GW (2021)
GLP	Not applicable

Table 8.8-1: Input parameters related to application for PEC_{GW} calculations

Modelling Use No.	**1**	**2**	**3**	
FOCUS crop [-]	Cabbage	Maize	Vines	
Application rate [g a.s./ha]	28	28	36	
Number of applications [-] / interval [days]	1 / –	1 / -	1 / –	
Relative application date / BBCH growth stage [-]	– / BBCH 15	– / BBCH 20-87	– / BBCH 57	
Frequency of application [-]	Annual	Annual	Annual	
Crop interception [%]	25	50	60	
Application method [-]	Ground application	Ground application	Ground application	
Models used for calculation	FOCUS PEARL v5.5.5, PELMO v6.6.4, MACRO v5.5.4			
Modelling Use No.	**4**	**5**	**6**	**7**
FOCUS crop [-]	Apples (late)	Apples (late)	Potatoes	Potatoes
Application rate [g a.s./ha]	31	24	12	12
Number of applications [-] / interval [days]	1 / -	1 / -	1 / -	2 / 7
Relative application date / BBCH growth stage [-]	– / BBCH 70	– / BBCH 70	– / BBCH 31	– / BBCH 31
Frequency of application [-]	Annual + Biennial	Annual	Annual	Annual
Crop interception [%]	65	65	60	60
Application method [-]	Ground application	Ground application	Ground application	Ground application
Models used for calculation	FOCUS PEARL v5.5.5, PELMO v6.6.4, MACRO v5.5.4			

NOTE: Only scenarios/results relevant to the Central Zone are shown in the tables hereafter.

Table 8.8-2: Application dates used for groundwater risk assessment

Crop		Scenario*	Application dates (absolute)
Use No. 1 Cabbage, Single application BBCH 15	First season	Châteaudun	11-May
		Hamburg	11-May
		Kremsmünster	11-May
		Porto	08-April
	Second season	Châteaudun	19-August
		Hamburg	19-August
		Kremsmünster	19-August
		Porto	16-August
Use No. 2 Maize, Single application BBCH 20[A]		Châteaudun	6 June
		Hamburg	3 June
		Kremsmünster	3 June
		Okehampton	12 June
		Piacenza	10 June
		Porto	6 June
Use No. 3 Vines (late) Single application, BBCH 57		Châteaudun	9 June
		Hamburg	13 June
		Kremsmünster	13 June
		Piacenza	9 June
		Porto	2 June
Use No. 4,5[B] Apples (late) Single application, BBCH 70		Châteaudun	6 June
		Hamburg	7 July
		Kremsmünster	7 July
		Okehampton	20 June
		Piacenza	8 June
		Porto	6 July
Use No. 6 Potatoes, Single application, BBCH 31		Châteaudun	25 May
		Hamburg	17 June
		Kremsmünster	17 June
		Okehampton	9 June
		Piacenza	13 May
		Porto	24 April
Use No. 7 Potatoes, Double application, BBCH 31		Châteaudun	25 May / 1 June
		Hamburg	17 June / 24 June
		Kremsmünster	17 June / 24 June
		Okehampton	9 June / 16 June
		Piacenza	13 May / 20 May
		Porto	24 April / 1 May

[A] GAP use is BBCH 20-87. Since BBCH 20 is not relevant for maize, the next possible BBCH stage was modelled
[B] GAP use is BBCH 70-87. Since BBCH 70 is not relevant for apples, the next possible BBCH stage was modelled

Table 8.8-3: Input parameters of active substance chlorantraniliprole for PEC_{gw} calculations

Parameter	Chlorantraniliprole	Value in accordance to EU endpoint Y/N / Reference
Molar mass [g/mol]	483.15	Y / EFSA (2013)
Water solubility at 20°C [mg/L]	0.88	Y / EFSA (2013)
Saturated vapour pressure at 20°C/25°C [Pa]	6.3E-12 / 2.1E-11	Y / EFSA (2013)
DT_{50} in soil [days]	Tier 1 = 197.5 / Tier 2-3 = 133.4	Y / Ireland (2016)
K_{FOC} [mL/g]	301.4	Y / EFSA (2013)
K_{FOM} [mL/g]	174.8	Y / Calculated (K_{FOC} / 1.724)
1/n [-]	0.95	Y / EFSA (2013)
Plant uptake factor [-]	Tier 1-2 = 0 / *Tier 3 = 0.5	Y / FOCUS default

* FOCUS groundwater (2021), section 2.4.4, allows use of the equations produced by Briggs et.al (1982) to calculate a plant uptake factor, when a reliable measured octanol:water partition coefficient for neutral pH is available. A reliable logKow of 2.86 at pH 7 is available for chlorantraniliprole (refer to EFSA 2013). Using the equation $TSCF = 0.784 \exp\{(-\log(Kow)-1.78]^2 /2.44)\}$, a plant uptake factor of 0.486 is calculated and so, for the purpose of modelling, a rounded up value of 0.5 is considered acceptable.

Table 8.8-4: Input parameters related to metabolites of chlorantraniliprole for PEC_{gw} calculations

Parameter	IN-EQW78	IN-ECD73	IN-F6L99	IN-F9N04	IN-GAZ70	Value in accordance to EU endpoint Y/N / Reference
Molar mass [g/mol]	465.14	279.13	204.03	469.12	451.11	Y / EFSA (2013)
Water solubility at 20°C [mg/L]	0.0347	0.025	199	1.04	0.0098	Y / EFSA (2013)
Saturated vapour pressure at 20°C [Pa]	6.3E-12	6.3E-12	6.3E-12	6.3E-12	6.3E-12	Y / Parent value
DT_{50} in soil [days]	833.3	2958.5	28.3	T1: 197.5[A] T2: 133.4[A]	1431.6	Y / Ireland (2016)
K_{FOC} [mL/g]	10787	29849	151	301.4 [A]	23581	Y / EFSA (2013)
K_{FOM} [mL/g]	6257	17314	87.6	174.8 [A]	13678	Y / Calculated (K_{FOC} / 1.724)
1/n [-]	0.9203	0.88	0.8973	0.95 [A]	0.9779	Y / EFSA (2013)
Formation fraction [-]	0.67	0.33	0.6	0.28	1.0 / 1.0	Y / Ireland (2016)
Formed from [-]	Parent	Parent	Parent	Parent	IN-F9N04 / IN-EQW78	Y / Ireland (2016)
Maximum occurrence in soil [%]	31.7	11.3	2.2	4.8	4.4	Y / Ireland (2016)

[A] Parent value.

zRMS comments:

The application pattern assumed in groundwater modelling is in line with the critical Central Zone GAP as presented in Table 8.1-1.
Application dates presented in Table 8.8-2 were checked by the zRMS using AppDate ver. 3.06 tool and are considered acceptable. All assumed crop interception corresponded with BBCH stages at which ADM.00900.I.1.C is intended to be applied.

Input parameters presented in Table 8.8-3 and Table 8.8-4 and used in the modelling are in line with EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016).

In Tier 1 and Tier 2 simulations PUF value of 0 was assumed, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021). At Tier 3 refined PUF of 0.5 derived using Briggs equation was used. Although reliability of the equation has been challenged during the EU PUF workshop held in York in 2013, the equation has been included in the FOCUS Groundwater generic guidance for Tier 1 updated in 2014 and kept as recommendation in version of 2021. Taking this into account, consideration of the PUF refined with Briggs equation is considered acceptable for purposes of the zonal exposure assessment. Nevertheless it is noted that PUF of 0.486 was calculated by the Applicant and was then rounded to 0.5. The zRMS is of the opinion that the unrounded value should have been used in simulations, since in case of substances prone to leaching even small difference in assumed input parameters may lead to exceedance of the threshold concentration. Furthermore, the FOCUS models allow to use the unrounded value. It should be also noted that some countries (e.g. Poland) do not accept refinement of PUF with Briggs equation considering it as not reliable. Therefore, although Tier 3 simulations have been validated by the zRMS, their acceptability at the national level must be confirmed by each cMS at the product authorisation.

8.8.2.1 Use No. 1, Cabbage, 1 x 28 g/ha, BBCH 15

Table 8.8-5: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 28 g a.s./ha to cabbage at BBCH 15 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		**IN-EQW78**		**IN-ECD73**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
Cabbage, 1 × 28 g/ha, BBCH 15 Tier 1 Annual application	Châteaudun (1st)	**0.159**	**0.140**	0.004	0.004	< 0.001	< 0.001
	Hamburg (1st)	**0.282**	**0.265**	0.008	0.008	< 0.001	0.001
	Kremsmünster (1st)	**0.206**	**0.202**	0.005	0.004	< 0.001	< 0.001
	Porto (1st)	**0.148**	**0.184**	0.005	0.006	< 0.001	< 0.001
	Châteaudun (2nd)	**0.176**	**0.155**	0.005	0.004	< 0.001	< 0.001
	Hamburg (2nd)	**0.306**	**0.287**	0.008	0.009	< 0.001	0.001
	Kremsmünster (2nd)	**0.219**	**0.215**	0.005	0.004	< 0.001	< 0.001
	Porto (2nd)	**0.181**	**0.212**	0.006	0.007	< 0.001	< 0.001
		MACRO		**MACRO**		**MACRO**	
	Châteaudun (1st)	**0.163**		0.004		< 0.001	
	Châteaudun (2nd)	**0.222**		0.006		< 0.001	
		IN-F6L99		**IN-F9N04**		**IN-GAZ70**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
	Châteaudun (1st)	0.006	0.005	**0.123**	**0.113**	0.006	0.006
	Hamburg (1st)	0.011	0.011	**0.175**	**0.178**	0.008	0.010
	Kremsmünster (1st)	0.008	0.008	**0.133**	**0.133**	0.006	0.005
	Porto (1st)	0.006	0.007	0.098	**0.109**	0.007	0.008
	Châteaudun (2nd)	0.007	0.006	**0.131**	**0.121**	0.007	0.006
	Hamburg (2nd)	0.012	0.011	**0.183**	**0.186**	0.009	0.010
	Kremsmünster (2nd)	0.009	0.008	**0.137**	**0.138**	0.006	0.005
	Porto (2nd)	0.007	0.008	**0.110**	**0.118**	0.008	0.009
		MACRO		**MACRO**		**MACRO**	
	Châteaudun (1st)	0.006		**0.111**		0.006	
	Châteaudun (2nd)	0.009		**0.133**		0.008	

Table 8.8-6: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 28 g a.s./ha to cabbage at BBCH 15 at Tier 2

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		**IN-EQW78**		**IN-ECD73**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
Cabbage, 1 × 28 g/ha, BBCH 15 Tier 2 Annual application	Châteaudun (1st)	0.034	0.027	0.001	0.001	< 0.001	< 0.001
	Hamburg (1st)	0.088	0.073	0.003	0.003	< 0.001	0.001
	Kremsmünster (1st)	0.061	0.057	0.002	0.002	< 0.001	< 0.001
	Porto (1st)	0.042	0.059	0.002	0.003	< 0.001	< 0.001
	Châteaudun (2nd)	0.040	0.032	0.002	0.001	< 0.001	< 0.001
	Hamburg (2nd)	0.099	0.083	0.004	0.004	< 0.001	0.001
	Kremsmünster (2nd)	0.068	0.063	0.002	0.002	< 0.001	< 0.001
	Porto (2nd)	0.057	0.074	0.003	0.003	< 0.001	< 0.001
		MACRO		**MACRO**		**MACRO**	
	Châteaudun (1st)	0.045		0.002		< 0.001	
	Châteaudun (2nd)	0.073		0.003		< 0.001	
		IN-F6L99		**IN-F9N04**		**IN-GAZ70**	

		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun (1st)	0.002	0.002	0.037	0.031	0.003	0.002
	Hamburg (1st)	0.006	0.005	0.070	0.065	0.005	0.005
	Kremsmünster (1st)	0.004	0.004	0.052	0.050	0.003	0.003
	Porto (1st)	0.002	0.004	0.037	0.047	0.004	0.005
	Châteaudun (2nd)	0.002	0.002	0.041	0.035	0.003	0.002
	Hamburg (2nd)	0.006	0.005	0.077	0.072	0.005	0.006
	Kremsmünster (2nd)	0.004	0.004	0.056	0.054	0.003	0.003
	Porto (2nd)	0.003	0.005	0.046	0.054	0.005	0.006
		MACRO		MACRO		MACRO	
	Châteaudun (1st)	0.003		0.039		0.002	
	Châteaudun (2nd)	0.005		0.055		0.004	

For the intended uses on head cabbage, cauliflower and broccoli, the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 2 for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 using the EU agreed input parameters and application dates as suggested by AppDate 3.06.

Tier 1

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 1 groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results at Tier 1 were in good agreement with these derived by the Applicant and presented in Table 8.8-5.
Based on simulations performed for annual application of ADM.00900.I.1.C to head cabbage, cauliflower and broccoli no unacceptable leaching of chlorantraniliprole metabolites IN-EQW78, IN-ECD73, IN-F6L99 and IN-GAZ70 is expected whereas PEC_{GW} values for chlorantraniliprole and metabolite IN-F9N04 (structurally similar to the active substance) were above the threshold concentration of 0.1 µg/L and demonstrated potential leaching to groundwater in all scenarios. For this reason further assessment was deemed necessary.

Tier 2

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 2 groundwater modelling were in line with the EU agreed endpoints. The Applicants' calculations were independently validated by the zRMS using the same input parameters. The obtained PEC_{GW} values at Tier 2 were in good agreement with these reported by the Applicant in Table 8.8-6. The PEC_{GW} values for chlorantraniliprole and its metabolites at Tier 2 were far below the threshold concentration of 0.1 µg/L in all scenarios indicating acceptable groundwater exposure.

Overall, based on the results of the groundwater modelling performed by the Applicant no unacceptable leaching of chlorantraniliprole and its metabolites is expected following application of ADM.00900.I.1.C to cabbage, cauliflower and broccoli.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.8.2.2 Use No. 2, Maize, 1 x 28 g/ha, BBCH 20

Table 8.8-7: PEC$_{GW}$ for chlorantraniliprole and its metabolites following an annual application of 1 × 28 g a.s./ha to maize at BBCH 20 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC$_{GW}$ at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 2 Maize, 1 × 28 g/ha, BBCH 20 Tier 1 Annual	Châteaudun	**0.136**	**0.100**	0.004	0.003	< 0.001	< 0.001
	Hamburg	**0.237**	**0.187**	0.006	0.005	< 0.001	0.001
	Kremsmünster	**0.158**	**0.155**	0.004	0.003	< 0.001	< 0.001
	Okehampton	**0.206**	**0.193**	0.005	0.005	< 0.001	< 0.001
	Piacenza	**0.189**	**0.180**	0.007	0.007	< 0.001	0.001
	Porto	**0.101**	**0.105**	0.003	0.003	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.086		0.002		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.005	0.004	0.099	0.081	0.006	0.004
	Hamburg	0.009	0.007	**0.139**	**0.122**	0.007	0.006
	Kremsmünster	0.006	0.006	0.100	0.100	0.004	0.004
	Okehampton	0.008	0.007	**0.120**	**0.114**	0.006	0.006
	Piacenza	0.007	0.007	**0.110**	0.099	0.010	0.009
	Porto	0.004	0.004	0.066	0.068	0.005	0.005
		MACRO		MACRO		MACRO	
	Châteaudun	0.003		0.066		0.003	

Table 8.8-8: PEC$_{GW}$ for chlorantraniliprole and its metabolites following an annual application of 1 × 28 g a.s./ha to maize at BBCH 20 at Tier 2

Use	FOCUS Scenario	80th Percentile PEC$_{GW}$ at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 2 Maize, 1 × 28 g/ha, BBCH 20 Tier 2 Annual	Châteaudun	0.033	0.020	0.001	0.001	< 0.001	< 0.001
	Hamburg	0.072	0.054	0.003	0.002	< 0.001	< 0.001
	Kremsmünster	0.048	0.044	0.002	0.001	< 0.001	< 0.001
	Okehampton	0.069	0.062	0.003	0.002	< 0.001	< 0.001
	Piacenza	0.063	0.065	0.003	0.003	< 0.001	< 0.001
	Porto	0.029	0.031	0.001	0.001	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.020		< 0.001		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.002	0.001	0.032	0.022	0.003	0.002
	Hamburg	0.004	0.003	0.060	0.046	0.004	0.003
	Kremsmünster	0.003	0.003	0.040	0.038	0.003	0.002
	Okehampton	0.004	0.004	0.054	0.049	0.004	0.004
	Piacenza	0.004	0.004	0.048	0.046	0.006	0.006
	Porto	0.002	0.002	0.025	0.027	0.003	0.003
		MACRO		MACRO		MACRO	
	Châteaudun	0.001		0.020		0.001	

For the intended uses on corn (grain, silage), the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 2 ~~Tier 1~~ for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 using the EU agreed input parameters and application dates as suggested by AppDate 3.06.

<u>Tier 1</u>
All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 1 groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results at Tier 1 were in good agreement with these derived by the Applicant and presented in Table 8.8-7.
Based on simulations performed for annual application of ADM.00900.I.1.C to maize no unacceptable leaching of chlorantraniliprole metabolites IN-EQW78, IN-ECD73, IN-F6L99 and IN-GAZ70 is expected whereas PEC_{GW} values for chlorantraniliprole and metabolite IN-F9N04 (structurally similar to the active substance) were above the threshold concentration of 0.1 µg/L and demonstrated potential leaching to groundwater in almost all scenarios. For this reason further assessment was deemed necessary.

<u>Tier 2</u>
All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 2 groundwater modelling were in line with the EU agreed endpoints. The Applicants' calculations were independently validated by the zRMS using the same input parameters. The obtained PEC_{GW} values at Tier 2 were in good agreement with these reported by the Applicant in Table 8.8-8. The PEC_{GW} values for chlorantraniliprole and its metabolites at Tier 2 were far below the threshold concentration of 0.1 µg/L in all scenarios indicating acceptable groundwater exposure.

Overall, based on the results of the groundwater modelling performed by the Applicant no unacceptable leaching of chlorantraniliprole and its metabolites is expected following application of ADM.00900.I.1.C to maize.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.8.2.3 Use No. 3, Vines, 1 x 36 g/ha, BBCH 57

Table 8.8-9: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 36 g a.s./ha to vines (late) at BBCH 57 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 3 Vines, 1 × 36 g/ha, BBCH 57 <u>Tier 1</u> Annual	Châteaudun	**0.217**	**0.219**	0.007	0.006	< 0.001	< 0.001
	Hamburg	**0.208**	**0.241**	0.006	0.006	< 0.001	0.001
	Kremsmünster	**0.162**	**0.207**	0.003	0.004	< 0.001	< 0.001
	Piacenza	**0.198**	**0.205**	0.008	0.008	< 0.001	0.001
	Porto	**0.109**	**0.139**	0.004	0.004	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	**0.104**		0.003		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	

		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
	Châteaudun	0.008	0.009	**0.146**	**0.149**	0.009	0.008
	Hamburg	0.008	0.009	**0.123**	**0.151**	0.007	0.006
	Kremsmünster	0.006	0.008	0.094	**0.125**	0.004	0.005
	Piacenza	0.008	0.008	**0.118**	**0.109**	0.011	0.011
	Porto	0.004	0.005	0.069	0.084	0.005	0.006
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	0.004		0.081		0.005	

Table 8.8-10: PEC$_{GW}$ for chlorantraniliprole and its metabolites following an annual application of 1 × 36 g a.s./ha to vines (late) at BBCH 57 at Tier 2

Use	**FOCUS Scenario**	**80th Percentile PEC$_{GW}$ at 1-m Soil Depth [µg/L]**					
		Chlorantraniliprole		**IN-EQW78**		**IN-ECD73**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
Use No. 3 Vines, 1 × 36 g/ha, BBCH 57 Tier 2 Annual	Châteaudun	0.063	0.060	0.003	0.002	< 0.001	< 0.001
	Hamburg	0.068	0.075	0.003	0.003	< 0.001	< 0.001
	Kremsmünster	0.053	0.066	0.002	0.002	< 0.001	< 0.001
	Piacenza	0.068	0.075	0.003	0.004	< 0.001	< 0.001
	Porto	0.032	0.044	0.002	0.002	< 0.001	< 0.001
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	0.024		0.001		< 0.001	
		IN-F6L99		**IN-F9N04**		**IN-GAZ70**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
	Châteaudun	0.004	0.004	0.055	0.055	0.005	0.004
	Hamburg	0.004	0.005	0.053	0.060	0.004	0.004
	Kremsmünster	0.003	0.004	0.041	0.053	0.003	0.003
	Piacenza	0.004	0.005	0.051	0.053	0.006	0.007
	Porto	0.002	0.003	0.028	0.036	0.003	0.004
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	0.001		0.024		0.002	

For the intended uses on grapevines, the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 2 for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 using the EU agreed input parameters and application dates as suggested by AppDate 3.06.

Tier 1

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 1 groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results at Tier 1 were in good agreement with these derived by the Applicant and presented in Table 8.8-9.
Based on simulations performed for annual application of ADM.00900.I.1.C to vines no unacceptable leaching of chlorantraniliprole metabolites IN-EQW78, IN-ECD73, IN-F6L99 and IN-GAZ70 is expected whereas PEC$_{GW}$

values for chlorantraniliprole and metabolite IN-F9N04 (structurally similar to the active substance) were above the threshold concentration of 0.1 µg/L and demonstrated potential leaching to groundwater in all scenarios. For this reason further assessment was deemed necessary.

Tier 2
All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 2 groundwater modelling were in line with the EU agreed endpoints. The Applicants' calculations were independently validated by the zRMS using the same input parameters. The obtained PEC_{GW} values at Tier 2 were in good agreement with these reported by the Applicant in Table 8.8-10. The PEC_{GW} values for chlorantraniliprole and its metabolites at Tier 2 were far below the threshold concentration of 0.1 µg/L in all scenarios indicating acceptable groundwater exposure.

Overall, based on the results of the groundwater modelling performed by the Applicant no unacceptable leaching of chlorantraniliprole and its metabolites is expected following application of ADM.00900.I.1.C to vines.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.8.2.4 Use No. 4, Apples, 1 x 31 g/ha, BBCH 70

Table 8.8-11: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 31 g a.s./ha to apples (late) at BBCH 70 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		**IN-EQW78**		**IN-ECD73**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
Use No.4 Apples (late), 1 × 31 g/ha, BBCH 70 Tier 1 Annual	Châteaudun	**0.205**	**0.209**	0.007	0.006	< 0.001	< 0.001
	Hamburg	**0.333**	**0.207**	0.008	0.005	< 0.001	0.001
	Kremsmünster	**0.173**	**0.169**	0.004	0.003	< 0.001	< 0.001
	Okehampton	**0.171**	**0.205**	0.004	0.005	< 0.001	< 0.001
	Piacenza	**0.189**	**0.181**	0.008	0.008	< 0.001	0.001
	Porto	**0.105**	**0.117**	0.004	0.004	< 0.001	< 0.001
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	0.075		0.005		< 0.001	
		IN-F6L99		**IN-F9N04**		**IN-GAZ70**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
	Châteaudun	0.008	0.008	**0.141**	**0.142**	0.009	0.008
	Hamburg	0.013	0.008	**0.193**	**0.129**	0.008	0.005
	Kremsmünster	0.007	0.006	**0.105**	**0.108**	0.005	0.004
	Okehampton	0.007	0.008	0.100	**0.115**	0.005	0.005
	Piacenza	0.007	0.007	**0.128**	0.096	0.013	0.010
	Porto	0.004	0.004	0.063	0.066	0.005	0.005
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	0.003		0.064		0.007	

Table 8.8-12: PEC_{GW} for chlorantraniliprole and its metabolites following biennial application of 1 × 31 g a.s./ha to apples (late) at BBCH 70 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 4 Apples (late), 1 × 31 g/ha, BBCH 70 Tier 1 Biennial	Châteaudun	0.094	0.096	0.004	0.004	< 0.001	< 0.001
	Hamburg	**0.155**	0.095	0.006	0.003	< 0.001	< 0.001
	Kremsmünster	0.081	0.079	0.003	0.003	< 0.001	< 0.001
	Okehampton	0.080	0.096	0.003	0.003	< 0.001	< 0.001
	Piacenza	0.097	0.084	0.005	0.004	< 0.001	0.001
	Porto	0.048	0.054	0.002	0.002	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.027		0.002		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.003	0.004	0.066	0.066	0.007	0.007
	Hamburg	0.006	0.003	0.093	0.062	0.008	0.004
	Kremsmünster	0.003	0.003	0.051	0.051	0.004	0.004
	Okehampton	0.003	0.004	0.048	0.055	0.004	0.005
	Piacenza	0.004	0.003	0.073	0.046	0.010	0.008
	Porto	0.002	0.002	0.029	0.032	0.004	0.004
		MACRO		MACRO		MACRO	
	Châteaudun	< 0.001		0.026		0.003	

Table 8.8-13: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 31 g a.s./ha to apples (late) at BBCH 70 at Tier 2

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 4 Apples (late), 1 × 31 g/ha, BBCH 70 Tier 2 Annual	Châteaudun	0.057	0.058	0.003	0.002	< 0.001	< 0.001
	Hamburg	**0.103**	0.061	0.004	0.002	< 0.001	< 0.001
	Kremsmünster	0.054	0.050	0.002	0.001	< 0.001	< 0.001
	Okehampton	0.056	0.070	0.002	0.002	< 0.001	< 0.001
	Piacenza	0.061	0.069	0.003	0.004	< 0.001	< 0.001
	Porto	0.033	0.039	0.002	0.002	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.011		0.001		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.003	0.004	0.051	0.053	0.005	0.004
	Hamburg	0.006	0.004	0.083	0.052	0.005	0.003
	Kremsmünster	0.003	0.003	0.044	0.043	0.003	0.002
	Okehampton	0.003	0.004	0.044	0.053	0.003	0.004
	Piacenza	0.004	0.004	0.047	0.047	0.007	0.006
	Porto	0.002	0.002	0.027	0.030	0.003	0.003
		MACRO		MACRO		MACRO	
	Châteaudun	< 0.001		0.016		0.002	

Table 8.8-14: PEC$_{GW}$ for chlorantraniliprole and its metabolites following biennial application of 1 × 31 g a.s./ha to apples (late) at BBCH 70 at Tier 2

Use	FOCUS Scenario	80th Percentile PEC$_{GW}$ at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 4 Apples (late), 1 × 31 g/ha, BBCH 70 Tier 2 Biennial	Châteaudun	0.026	0.026	0.002	0.002	< 0.001	< 0.001
	Hamburg	0.046	0.029	0.003	0.001	< 0.001	< 0.001
	Kremsmünster	0.025	0.023	0.001	0.001	< 0.001	< 0.001
	Okehampton	0.025	0.032	0.001	0.002	< 0.001	< 0.001
	Piacenza	0.026	0.031	0.002	0.002	< 0.001	< 0.001
	Porto	0.015	0.018	< 0.001	0.001	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.004		< 0.001		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.001	0.002	0.024	0.024	0.004	0.004
	Hamburg	0.003	0.002	0.039	0.023	0.005	0.003
	Kremsmünster	0.001	0.001	0.021	0.020	0.002	0.002
	Okehampton	0.001	0.002	0.020	0.025	0.003	0.003
	Piacenza	0.002	0.002	0.023	0.022	0.005	0.005
	Porto	< 0.001	0.001	0.012	0.014	0.002	0.003
		MACRO		MACRO		MACRO	
	Châteaudun	< 0.001		0.005		< 0.001	

Table 8.8-15: PEC$_{GW}$ for chlorantraniliprole and its metabolites following annual application of 1 × 31 g a.s./ha to apples (late) at BBCH 70 at Tier 3 (to be confirmed by the cMS, see zRMS explanations in commenting boxes for more details)

Use	FOCUS Scenario	80th Percentile PEC$_{GW}$ at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No.4 Apples (late), 1 × 31 g/ha, BBCH 70 Tier 3 Annual	~~Châteaudun~~	~~0.038~~	~~0.037~~	~~0.002~~	~~0.002~~	~~< 0.001~~	~~< 0.001~~
	Hamburg	0.068	0.044	0.003	0.001	< 0.001	< 0.001
	~~Kremsmünster~~	~~0.039~~	~~0.034~~	~~0.001~~	~~0.001~~	~~< 0.001~~	~~< 0.001~~
	~~Okehampton~~	~~0.044~~	~~0.050~~	~~0.002~~	~~0.002~~	~~< 0.001~~	~~< 0.001~~
	~~Piacenza~~	~~0.041~~	~~0.050~~	~~0.002~~	~~0.003~~	~~< 0.001~~	~~< 0.001~~
	~~Porto~~	~~0.027~~	~~0.030~~	~~0.001~~	~~0.001~~	~~< 0.001~~	~~< 0.001~~
		~~MACRO~~		~~MACRO~~		~~MACRO~~	
	~~Châteaudun~~	~~0.007~~		~~< 0.001~~		~~< 0.001~~	
		~~IN-F6L99~~		~~IN-F9N04~~		~~IN-GAZ70~~	
		~~PEARL~~	~~PELMO~~	~~PEARL~~	~~PELMO~~	~~PEARL~~	~~PELMO~~
	~~Châteaudun~~	~~0.003~~	~~0.002~~	~~0.045~~	~~0.044~~	~~0.004~~	~~0.004~~
	Hamburg	0.005	0.003	0.077	0.045	0.005	0.003
	~~Kremsmünster~~	~~0.003~~	~~0.002~~	~~0.042~~	~~0.036~~	~~0.003~~	~~0.002~~
	~~Okehampton~~	~~0.003~~	~~0.003~~	~~0.041~~	~~0.046~~	~~0.003~~	~~0.003~~
	~~Piacenza~~	~~0.003~~	~~0.003~~	~~0.043~~	~~0.042~~	~~0.006~~	~~0.005~~
	~~Porto~~	~~0.002~~	~~0.002~~	~~0.025~~	~~0.026~~	~~0.003~~	~~0.003~~
		~~MACRO~~		~~MACRO~~		~~MACRO~~	
	~~Châteaudun~~	~~< 0.001~~		~~0.013~~		~~0.001~~	

For the intended uses on apples, pears and quince, the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 2 for biennial application or Tier 3 (to be confirmed by the cMS, see zRMS explanations below) for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 and using the EU agreed input parameters and application dates as suggested by AppDate 3.06.

<u>Tier 1</u>

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 1 groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results at Tier 1 were in good agreement with these derived by the Applicant and presented in Table 8.8-11.
Based on simulations performed for annual application of ADM.00900.I.1.C to apples (at application rate 31g a.s./ha) no unacceptable leaching of chlorantraniliprole metabolites IN-EQW78, IN-ECD73, IN-F6L99 and IN-GAZ70 is expected whereas PEC_{GW} values for chlorantraniliprole and metabolite IN-F9N04 (structurally similar to the active substance) were above the threshold concentration of 0.1 µg/L in all scenarios. For this reason additional calculations for biennial application were presented. Simulations performed with assumption of application of the product every second year using PELMO 6.6.4 resulted with parent PEC_{GW} below the threshold concentration of 0.1 µg/L. However, results of simulations performed with PEARL 5.5.5 still indicated potentially unacceptable leaching in Hamburg scenario (0.155 µg/L). Therefore, higher tier modelling was deemed necessary.

<u>Tier 2</u>

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 2 groundwater modelling were in line with the EU agreed endpoints. In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021). The Applicants' calculations were independently validated by the zRMS using the same input parameters. The obtained PEC_{GW} values at Tier 2 were in good agreement with these reported by the Applicant in Table 8.8-13. The PEC_{GW} values for chlorantraniliprole and its metabolites at Tier 2 were far below the threshold concentration of 0.1 µg/L in all scenarios with exception of scenario Hamburg modelled with PEARL (0.103 µg/L). For this reason additional calculations for biennial application were provided resulting with PEC_{GW} for the parent and its metabolites being below the threshold concentration of 0.1 µg/L in all scenarios. On this basis it may be concluded that no unacceptable leaching of chlorantraniliprole and its metabolites is expected in Hamburg scenario when ADM.00900.I.1.C is used in apples every second year, while for other scenarios annual application is possible. In order to remove the restriction regarding the frequency of application in Hamburg scenario, the Applicant performed simulations at Tier 3, which are discussed below.

<u>Tier 3</u>

For purposes of Tier 3 simulations the Applicant refined the PUF value using the Briggs equation obtaining value of 0.486, which was rounded to 0.5 and used in simulations. As discussed in the zRMS comment in point 8.8.2, refinement of the PUF value using Briggs equation is recommended by the FOCUS groundwater generic guidance (2021) and has been thus accepted for purposes of the zonal evaluation. However, validation of the Tier 3 groundwater modelling was performed by the zRMS with consideration of the exact PUF value calculated by the Applicant (i.e. 0.486) as in opinion of the zRMS in case of the substances prone to leaching even slight difference in input parameters may change the outcome of the groundwater modelling. Furthermore, the FOCUS models allow for use of the unrounded value as an input. In order to reduce the workload, only Hamburg scenario was included in zRMS simulations, since for other scenarios acceptable groundwater exposure for annual application to apples could be concluded already at Tier 2. The Tier 3 PEC_{GW} value of 0.069 µg/L for Hamburg scenario derived using unrounded PUF value was only marginally higher than value obtained by the Applicant for PUF of 0.5 (0.068 µg/L) and for this reason correction of the results in Table 8.8-15 were not necessary. Results for remaining scenarios were struck through and shaded as their validation was not necessary due to reasons described earlier. No unacceptable leaching of chlorantraniliprole and its metabolites is expected based on these assumptions for annual application to apples. It should be, however, noted that some countries (e.g. Poland) do not accept refinement of PUF using Briggs equation considering it as not reliable. Therefore, although Tier 3 simulations in Hamburg (the only scenario failing at Tier 2) have been validated by the zRMS, their acceptability at the national level must be confirmed by each cMS at the product authorisation.

Overall, when Tier 2 results are considered, the groundwater exposure following annual application of ADM.00900.I.1.C to apples is acceptable in all scenarios with exception of scenario Hamburg. In case this scenario is considered relevant for the cMS, the application frequency must be restricted to every second year. In case results of Tier 3 simulations are agreed by the cMS, no mitigation measures are necessary and acceptable exposure to groundwater may be concluded following the annual application of the product to apples. The concerned Member States must decide on the need for restriction in their countries at the product authorisation.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.8.2.5 Use No. 5, Apples, 1 x 24 g/ha, BBCH 70

Table 8.8-16: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 24 g a.s./ha to apples (late) at BBCH 70 at Tier 1

Use	FOCUS Scenario	80[th] Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 5 Apples (late), 1 × 24 g/ha, BBCH 70 Tier 1 Annual	Châteaudun	**0.153**	**0.156**	0.005	0.005	< 0.001	< 0.001
	Hamburg	**0.250**	**0.155**	0.006	0.003	< 0.001	0.001
	Kremsmünster	**0.130**	**0.126**	0.003	0.003	< 0.001	< 0.001
	Okehampton	**0.128**	**0.154**	0.003	0.004	< 0.001	< 0.001
	Piacenza	**0.141**	**0.137**	0.006	0.006	< 0.001	0.001
	Porto	0.079	0.088	0.003	0.003	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.055		0.003		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.006	0.006	**0.106**	**0.107**	0.007	0.006
	Hamburg	0.009	0.006	**0.146**	0.097	0.006	0.004
	Kremsmünster	0.005	0.005	0.079	0.081	0.003	0.003
	Okehampton	0.005	0.006	0.076	0.087	0.004	0.004
	Piacenza	0.005	0.005	0.096	0.073	0.010	0.008
	Porto	0.003	0.003	0.048	0.050	0.004	0.004
		MACRO		MACRO		MACRO	
	Châteaudun	0.002		0.047		0.005	

Table 8.8-17: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 24 g a.s./ha to apples (late) at BBCH 70 at Tier 2

Use	FOCUS Scenario	80[th] Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 6 Apples (late), 1 × 24 g/ha, BBCH 70 Tier 2 Annual	Châteaudun	0.042	0.043	0.002	0.002	< 0.001	< 0.001
	Hamburg	0.077	0.045	0.003	0.002	< 0.001	< 0.001
	Kremsmünster	0.040	0.037	0.001	0.001	< 0.001	< 0.001
	Okehampton	0.041	0.052	0.001	0.002	< 0.001	< 0.001
	Piacenza	0.045	0.051	0.002	0.003	< 0.001	< 0.001
	Porto	0.024	0.029	0.001	0.001	< 0.001	< 0.001

		MACRO		MACRO		MACRO	
	Châteaudun	0.008		< 0.001		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.003	0.003	0.038	0.039	0.004	0.003
	Hamburg	0.005	0.003	0.061	0.039	0.004	0.002
	Kremsmünster	0.002	0.002	0.033	0.032	0.002	0.002
	Okehampton	0.002	0.003	0.033	0.039	0.002	0.003
	Piacenza	0.003	0.003	0.035	0.035	0.005	0.005
	Porto	0.001	0.002	0.020	0.022	0.002	0.002
		MACRO		MACRO		MACRO	
	Châteaudun	< 0.001		0.011		0.001	

For the intended uses on apples, pears and quince, the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 2 for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 using the EU agreed input parameters and application dates as suggested by AppDate 3.06.

Tier 1

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 1 groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results at Tier 1 were in good agreement with these derived by the Applicant and presented in Table 8.8-16.
Based on simulations performed for annual application of ADM.00900.I.1.C (24 g a.s./ha) to apples no unacceptable leaching of chlorantraniliprole metabolites IN-EQW78, IN-ECD73, IN-F6L99 and IN-GAZ70 is expected whereas PEC_{GW} values for chlorantraniliprole and metabolite IN-F9N04 (structurally similar to the active substance) were above the threshold concentration of 0.1 µg/L and demonstrated potential leaching to groundwater. For this reason further assessment was deemed necessary.

Tier 2

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 2 groundwater modelling were in line with the EU agreed endpoints. The Applicants' calculations were independently validated by the zRMS using the same input parameters. The obtained PEC_{GW} values at Tier 2 were in good agreement with these reported by the Applicant in Table 8.8-17. The PEC_{GW} values for chlorantraniliprole and its metabolites at Tier 2 were far below the threshold concentration of 0.1 µg/L in all scenarios indicating acceptable groundwater exposure.

Overall, based on the results of the groundwater modelling performed by the Applicant no unacceptable leaching of chlorantraniliprole and its metabolites is expected following application of ADM.00900.I.1.C to apples at application rate of 24 g a.s./ha.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.8.2.6 Use No. 6, Potatoes, 1 x 12 g/ha, BBCH 31

Table 8.8-18: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 1 × 12 g a.s./ha to potatoes at BBCH 31-60 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		**IN-EQW78**		**IN-ECD73**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
Use No. 6 Potatoes, 1 × 12 g/ha, BBCH 31 Tier 1 Annual	Châteaudun	0.029	0.022	< 0.001	0.001	< 0.001	< 0.001
	Hamburg	0.052	0.046	0.001	0.001	< 0.001	< 0.001
	Kremsmünster	0.041	0.039	< 0.001	0.001	< 0.001	< 0.001
	Okehampton	0.051	0.052	0.001	0.001	< 0.001	< 0.001
	Piacenza	0.043	0.042	0.001	0.001	< 0.001	< 0.001
	Porto	0.022	0.032	< 0.001	0.001	< 0.001	< 0.001
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	0.023		< 0.001		< 0.001	
		IN-F6L99		**IN-F9N04**		**IN-GAZ70**	
		PEARL	**PELMO**	**PEARL**	**PELMO**	**PEARL**	**PELMO**
	Châteaudun	0.001	0.001	0.025	0.020	0.001	0.001
	Hamburg	0.002	0.002	0.034	0.033	0.002	0.002
	Kremsmünster	0.001	0.001	0.027	0.027	0.001	0.001
	Okehampton	0.002	0.002	0.032	0.033	0.001	0.002
	Piacenza	0.002	0.001	0.027	0.026	0.002	0.002
	Porto	< 0.001	0.001	0.016	0.022	0.001	0.002
		MACRO		**MACRO**		**MACRO**	
	Châteaudun	< 0.001		0.019		< 0.001	

For the intended uses on potato, the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 1 for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 using the EU agreed input parameters and application dates as suggested by AppDate 3.06.
All input parameters for chlorantraniliprole and its metabolites considered by the Applicant for groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results were in good agreement with these derived by the Applicant and presented in Table 8.8-18.
No unacceptable leaching of chlorantraniliprole and its metabolites is expected following single application of ADM.00900.I.1.C to potatoes.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.8.2.7 Use No. 7, Potatoes, 2 x 12 g/ha, [7-days interval], BBCH 31

Table 8.8-19: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 2 × 12 g a.s./ha at 7-day interval to potatoes at BBCH 31-60 at Tier 1

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No.7 Potatoes, 2 × 12 g/ha, [7-d interval] BBCH 31 Tier 1 Annual	Châteaudun	0.066	0.052	0.002	0.001	< 0.001	< 0.001
	Hamburg	**0.114**	**0.101**	0.003	0.003	< 0.001	< 0.001
	Kremsmünster	0.089	0.086	0.002	0.002	< 0.001	< 0.001
	Okehampton	**0.112**	**0.113**	0.003	0.003	< 0.001	< 0.001
	Piacenza	0.093	0.091	0.003	0.003	< 0.001	< 0.001
	Porto	0.049	0.070	0.002	0.002	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.052		0.001		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	0.002	0.002	0.055	0.045	0.003	0.002
	Hamburg	0.004	0.004	0.072	0.071	0.003	0.004
	Kremsmünster	0.003	0.003	0.058	0.058	0.003	0.002
	Okehampton	0.004	0.004	0.069	0.069	0.003	0.003
	Piacenza	0.003	0.003	0.058	0.056	0.005	0.005
	Porto	0.002	0.003	0.035	0.046	0.003	0.003
		MACRO		MACRO		MACRO	
	Châteaudun	0.002		0.040		0.002	

Table 8.8-20: PEC_{GW} for chlorantraniliprole and its metabolites following an annual application of 2 × 12 g a.s./ha at 7-day interval to potatoes at BBCH 31-60 at Tier 2

Use	FOCUS Scenario	80th Percentile PEC_{GW} at 1-m Soil Depth [µg/L]					
		Chlorantraniliprole		IN-EQW78		IN-ECD73	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Use No. 7 Potatoes, 2 × 12 g/ha, [7-d interval] BBCH 31 Tier 2 Annual	Châteaudun	0.014	0.010	< 0.001	< 0.001	< 0.001	< 0.001
	Hamburg	0.035	0.027	0.001	0.001	< 0.001	< 0.001
	Kremsmünster	0.026	0.023	< 0.001	0.001	< 0.001	< 0.001
	Okehampton	0.035	0.035	0.001	0.001	< 0.001	< 0.001
	Piacenza	0.029	0.028	0.001	0.001	< 0.001	< 0.001
	Porto	0.012	0.020	< 0.001	0.001	< 0.001	< 0.001
		MACRO		MACRO		MACRO	
	Châteaudun	0.012		< 0.001		< 0.001	
		IN-F6L99		IN-F9N04		IN-GAZ70	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
	Châteaudun	< 0.001	0.001	0.015	0.011	0.001	0.001
	Hamburg	0.002	0.002	0.029	0.025	0.002	0.002
	Kremsmünster	0.001	0.001	0.022	0.021	0.001	0.001
	Okehampton	0.002	0.002	0.028	0.028	0.002	0.002
	Piacenza	0.002	0.002	0.023	0.023	0.003	0.003
	Porto	< 0.001	0.001	0.012	0.018	0.001	0.002
		MACRO		MACRO		MACRO	
	Châteaudun	< 0.001		0.012		< 0.001	

For the intended uses on potato, the PECgw for Chlorantraniliprole and its metabolites do not exceed 0.1 µg/L at Tier 2 for an annual application. No unacceptable risk of groundwater contamination by Chlorantraniliprole and its metabolites is expected when the product ADM.00900.I.1.C is used in accordance with the GAP.

zRMS comments:

The groundwater modelling was independently validated by the zRMS in additional modelling with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4 using the EU agreed input parameters and application dates as suggested by AppDate 3.06.

Tier 1

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 1 groundwater modelling were in line with the EU agreed endpoints reported in EFSA Journal 2013;11(6):3143 and in Addendum with confirmatory data for chlorantraniliprole (Vol. 3 Section 5, April 2016). In simulations PUF value of 0 was assumed for all compounds, which is in line with recommendations of the most recent version of the FOCUS Groundwater Guidance (2021).
The Applicants' calculations were independently validated by the zRMS using the same input parameters. Obtained results at Tier 1 were in good agreement with these derived by the Applicant and presented in Table 8.8-19.
Based on simulations performed for annual application of ADM.00900.I.1.C to potatoes no unacceptable leaching of chlorantraniliprole metabolites IN-EQW78, IN-ECD73, IN-F6L99, N-GAZ70 and IN-F9N04 is expected whereas PEC_{GW} values for chlorantraniliprole were above the threshold concentration of 0.1 µg/L and demonstrated potential leaching to groundwater in Hamburg and Okehampton scenarios. For this reason further assessment was deemed necessary.

Tier 2

All input parameters for chlorantraniliprole and its metabolites considered by the Applicant at the Tier 2 groundwater modelling were in line with the EU agreed endpoints. The Applicants' calculations were independently validated by the zRMS using the same input parameters. The obtained PEC_{GW} values at Tier 2 were in good agreement with these reported by the Applicant in Table 8.8-20. The PEC_{GW} values for chlorantraniliprole and its metabolites at Tier 2 were far below the threshold concentration of 0.1 µg/L in all scenarios indicating acceptable groundwater exposure.

Overall, based on the results of the groundwater modelling performed by the Applicant no unacceptable leaching of chlorantraniliprole and its metabolites is expected following application of ADM.00900.I.1.C to potatoes.

Please note that additional groundwater modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.9 Predicted Environmental Concentrations in surface water (PEC_{SW}) (KCP 9.2.5)

8.9.1 Justification for new endpoints

EU-agreed endpoints were used for $PEC_{SW/SED}$ modelling of chlorantraniliprole and its metabolites (EFSA, 2013 and CIR, 2016).

8.9.2 Active substance(s), relevant metabolite(s) and the formulation (KCP 9.2.5)

PEC surface water calculations at Steps 1 to 4 are described in this document and are documented in detail in the following modelling report.

Report	Worthington M. (2021b)
Title	Chlorantraniliprole – A European Environmental Fate Assessment for Chlorantraniliprole and its metabolites IN-EQW78, IN-ECD73, IN-F6L99, IN-F9N04, IN-GAZ70, IN-LBA22, IN-LBA23 and IN-LBA24 Using the FOCUS Surface Water Models at Steps 1 to 4 Following Spray Application to Various Crops in Central Europe
Document No	S21-06597-06/002
Guidelines	FOCUS (2003 and 2015)
GLP	Not applicable

Table 8.9-1: Input parameters related to application for $PEC_{SW/SED}$ calculations

Use No. [A]	**1**	**2**	**3**
FOCUS Crop	Leafy vegetables	Maize	Vines (late)
Application rate [g a.s./ha]	28	28	36
Number of applications / interval [d]	1 / -	1 / -	1 / -
Application date/BBCH growth stage	BBCH 15 – 49	BBCH 20 – 87	BBCH 57 – 83
Steps 1-2:			
Region / Season	N-EU / Oct-Feb + Mar-May + Jun-Sep S-EU / Oct-Feb + Mar-May + Jun-Sep	N-EU / Mar-May + Jun-Sep S-EU / Mar-May + Jun-Sep	N-EU / Mar-May + Jun-Sep + Oct-Feb S-EU / Mar-May + Jun-Sep + Oct-Feb
Interception	40% Minimal- 25%	50% Average	Full – 60%
Models used for calculation	STEPS 1+2 in FOCUS v3.2		
Steps 3-4:			
Application method	Ground spray	Ground spray	Air-blast
CAM (Chemical Application Meth-od)	2 (foliar linear)	2 (foliar linear)	2 (foliar linear)
Soil depth [cm]	4 (default)	4 (default)	4 (default)
Models used for calculation	FOCUS SWASH v5.3 (MACRO v5.5.4, PRZM v4.3.1, TOXSWA v5.5.3), ECPA SWAN v5.0		

Use No. [A]	**4**	**5**	**6**	**7**
FOCUS Crop	Pomefruits	Pomefruits	Potatoes	Potatoes
Application rate [g a.s./ha]	31	24	12	12
Number of applications / interval [d]	1 / -	1 / -	1 /-	2 / 7
Application date/BBCH growth stage	BBCH 70 – 87	BBCH 70 – 87	BBCH 31 – 60	BBCH 31 – 60
Steps 1-2:				
Region / Season	N-EU / Jun-Sep +Oct-Feb		N-EU / Mar-May + Jun-Sep + Oct-Feb	

	S-EU / Jun-Sep + Oct-Feb		S-EU / Mar-May + Jun-Sep + Oct-Feb	
Interception	Full – 65%		Average – 50 %	
Models used for calculation	STEPS 1+2 in FOCUS v3.2			
Steps 3-4:				
Application method	Air-blast	Air-blast	Ground spray	Ground spray
CAM (Chemical Application Method)	2 (foliar linear)	2 (foliar linear)	2 (foliar linear)	2 (foliar linear)
Soil depth [cm]	4 (default)	4 (default)	4 (default)	4 (default)
Models used for calculation	FOCUS SWASH v5.3 (MACRO v5.5.4, PRZM v4.3.1, TOXSWA v5.5.3), ECPA SWAN v5.0			

[A] Use No.[...]w represents modelling done assigning the FOCUS default to the water compartment and Use No. [...]s represents modelling done assigning the FOCUS default to the sediment compartment, in each case the DT50,sys value is assigned to the opposite .

The application timing parameters for FOCUS Steps 3-4 calculations are shown in the table below.

NOTE: Only scenarios/results relevant to the Central Zone are shown in the tables hereafter.

Table 8.9-2: FOCUS Step 3 Scenario related input parameters for $PEC_{sw/sed}$ calculations for the application of ADM.00900.I.1.C

Use	Scenario	Application window	Julian days	Application date
Use No. 1: Leafy vegetables BBCH 15 – 49	D3 (1st season)	16-May – 15-Jun	136 – 166	15-May-1992
	D3 (2nd season)	24-Aug – 23-Sep	236 – 266	17-Sep-1992
	D4	15-Jun – 15-Jul	136 – 166	19-Jun-1985
	D6	08-Sep – 08-Oct	251 – 281	15-Sep-1986
	R1 (1st season)	11-May – 10-Jun	131 – 161	15-May-1984
	R1 (2nd season)	19-Aug – 18-Sep	231 – 261	20-Aug-1978
	R2 (1st season)	08-Apr – 08-May	98 – 128	22-Apr-1977
	R2 (2nd season)	16-Aug – 15-Sep	228 – 258	14-Sep-1989
	R3 (1st season)	01-Apr – 01-May	91 – 121	04-Apr-1980
	R3 (2nd season)	16-Jul – 15-Aug	197 – 227	18-Jul-1975
	R4 (1st season)	01-Apr – 01-May	91 – 121	03-Apr-1984
	R4 (2nd season)	16-Jul – 15-Aug	197 – 227	24-Jul-1985
Use No. 2: Maize BBCH 20	D3	07-Jun – 07-Jul	158 – 188	21-Jun-1992
	D4	13-Jun – 13-Jul	164 – 194	04-Jul-1985
	D5	02-Jun – 02-Jul	153 – 183	09-Jun-1978
	D6	09-May – 08-Jun	129 – 159	14-May-1986
	R1	05-Jun – 05-Jul	156 – 186	09-Jun-1978
	R2	06-Jun – 06-Jul	157 – 187	17-Jun-1989
	R3	30-May – 29-Jun	150 – 180	22-Jun-1980
	R4	03-May – 02-Jun	123 – 153	09-May-1984
Use No. 2: Maize BBCH <87	D3	17-Aug -16-Sep	229-259	18-Aug-92
	D4	11-Aug -10-Sep	223-253	27-Aug-85
	D5	10-Aug -09-Sep	222-252	27-Aug-78
	D6	07-Aug -06-Sep	219-249	10-Aug-86
	R1	21-Aug -20-Sep	233-263	21-Aug-78
	R2	27-Aug -26-Sep	239-269	24-Sep-89
	R3	25-Aug -24-Sep	237-267	28-Aug-75
	R4	24-Jul - 23-Aug	205-235	07-Aug-85

Use	Scenario	Application window	Julian days	Application date
Use No. 3: Vines (late) BBCH 57	D6	24-Mar – 23-Apr	83 – 113	09-Apr-1986
	R1	29-May – 28-Jun	149 – 179	13-Jun-1984
	R2	02-Jun – 02-Jul	153 – 183	04-Jun-1989
	R3	09-Jun – 09-Jul	160 – 190	23-Jun-1975
	R4	24-May – 23-Jun	144 – 174	27-May-1984
Use No. 3: Vines (late) BBCH <83	D6	04-Aug - 03-Sep	216- 246	04-Aug-86
	R1	19-Aug - 18-Sep	231 -261	20-Aug-78
	R2	10-Aug - 09-Sep	222 -252	20-Aug-78
	R3	30-Aug - 29-Sep	242 -272	10-Aug-89
	R4	30-Jul - 29-Aug	211 -241	23-Sep-75
Use No. 4-5: Pomefruits BBCH 70	D3	07-Jul – 06-Aug	188 – 218	08-Jul-1992
	D4	11-Jul – 10-Aug	192 – 222	11-Jul-1985
	D5	07-Jun – 07-Jul	158 – 188	09-Jun-1978
	R1	07-Jul – 06-Aug	188 – 218	11-Jul-1978
	R2	03-Aug – 02-Sep	215 – 245	05-Aug-1989
	R3	07-Jun – 07-Jul	158 – 188	23-Jun-1975
	R4	07-Jun – 07-Jul	158 – 188	08-Jun-1985
Use No. 4-5: Pomefruits BBCH <87	D3	12-Sep- 12-Oct	255- 285	26-Sep-92
	D4	12-Sep- 12-Oct	255 -285	12-Sep-85
	D5	21-Aug- 20-Sep	233 -263	27-Aug-78
	R1	12-Sep- 12-Oct	255 -285	17-Sep-78
	R2	22-Aug- 21-Sep	234 -264	19-Sep-89
	R3	25-Aug -24-Sep	237 -267	28-Aug-75
	R4	25-Aug- 24-Sep	237 -267	15-Sep-85
Use No. 6: Potatoes BBCH 31 - 60 1 x 12 g a.s./ha	D3	17-Jun – 17-Jul	168 – 198	26-Jun-92
	D4	09-Jul – 08-Aug	190 – 220	18-Jul-85
	D6 (1st season)	07-May – 06-Jun	127 – 157	07-May-86
	D6 (2nd season)	04-Sep – 04-Oct	247 – 277	04-Sep-86
	R1	01-Jun-01-Jul	152-182	01-Jun-78
	R2	24-Apr– 24-May	114 – 144	24-Apr-77
	R3	07-May – 06-Jun	127 – 157	18-May-80
Use No.7: Potatoes 2 × 12 g a.s./ha [7-day interval] BBCH 31	D3	17-Jun – 24-Jul	168 – 205	26-Jun-1992 / 08-Jul-1992
	D4	09-Jul – 15-Aug	190 – 227	18-Jul-1985 / 25-Jul-1985
	D6 (1st season)	07-May – 13-Jun	127 – 164	07-May-1986 / 17-May-1986
	D6 (2nd season)	04-Sep – 11-Oct	247 – 284	04-Sep-1986 / 13-Sep-1986
	R1	01-Jun – 08-Jul	152 – 189	01-Jun-1978 / 09-Jun-1978
	R2	24-Apr – 31-May	114 – 151	24-Apr-1977 / 07-May-1977
	R3	07-May – 13-Jun	127 – 164	18-May-1980 / 01-Jun-1980

Table 8.9-3: Summary of modelling input parameters used for $PEC_{SW/SED}$ calculations of active substance chlorantraniliprole at FOCUS Steps 1 to 4

Parameter	Chlorantraniliprole	Value in accordance to EU endpoint Y/N/Reference
Molar mass [g/mol]	483.15	Y / EFSA (2013)
Water solubility at 20°C [mg/L]	0.88	Y / EFSA (2013)
Saturated vapour pressure at 20°C [Pa]	6.30×10^{-12}	Y / EFSA (2013)
DT_{50} in soil [days]	133.4	Y / Ireland (2016)
K_{FOC} / K_{FOM} [mL/g]	301.4 /174.8	Y / EFSA (2013)
1/n [-]	0.95	Y / EFSA (2013)
Steps 1-2		
DT_{50} in water [days]	267 / 1000 [A]	Y / Ireland (2016)
DT_{50} in sediment [days]	1000 / 267 [A]	Y / Ireland (2016)
DT_{50} in whole system [days]	267	Y / Ireland (2016)
Steps 3-4		
DT_{50} in water [days]	267 / 1000 [A]	Y / Ireland (2016)
DT_{50} in sediment [days]	1000 / 267 [A]	Y / Ireland (2016)
Plant uptake factor [-]	0	Y / EFSA (2013)

[A] According to FOCUS SW (2015) guidance document, when the K_{FOC} value is between 100 mL/g and 2000 mL/g, the modelling should be done assigning the FOCUS default value to the water compartment and the $DT_{50, sys}$ value to the sediment compartment, and once vice-versa. The results shown below represent the highest PEC value of each modelling.

Table 8.9-4: Summary of modelling input parameters used for $PEC_{SW/SED}$ calculations of metabolites at FOCUS Steps 1-2

Parameter	IN-EQW78	IN-ECD73	IN-F6L99	IN-F9N04	Value in accordance to EU endpoint Y/N/Reference
Molar mass [g/mol]	465.14	279.13	204.03	469.12	Y / EFSA (2013)
Water solubility at 20°C [mg/L]	0.0347	0.025	199	1.04	Y / EFSA (2013)
DT_{50} in soil [days]	833.3	2958.5 [C]	28.3	133.4 [A]	Y / Ireland (2016)
K_{FOC} [mL/g]	10787	29849	151	301.4 [A]	Y / EFSA (2013)
DT_{50} in water [days]	1000 [B]	1000 [B]	1000 [B]	267 [A] /1000 [B]	Y / Ireland (2016)
DT_{50} in sediment [days]	1000 [B]	1000 [B]	1000 [B]	1000 [B] /267[A]	Y / Ireland (2016)
DT_{50} in whole system [days]	1000 [B]	1000 [B]	1000 [B]	267 [A]	Y / Ireland (2016)
Max occurrence in soil [%]	31.7	11.3	2.2	4.8	Y / Ireland (2016)
Max occurrence in water/sed [%]	41.0	4.7	4.2	2.7	Y / Ireland (2016)
Parameter	**IN-GAZ70**	**IN-LBA22**	**IN-LBA23**	**IN-LBA24**	**Value in accordance to EU endpoint Y/N/Reference**
Molar mass [g/mol]	451.11	446.69	446.69	353.61	Y / EFSA (2013)
Water solubility at 20°C [mg/L]	0.0098	0.88 [A]	0.88 [A]	0.88 [A]	Y / EFSA (2013)
DT_{50} in soil [days]	1431.6	0.1	0.1	0.1	Y / Ireland (2016)
K_{FOC} [mL/g]	23581	38800	112000	1760	Y / EFSA (2013)
DT_{50} in water [days]	1000 [B]	1.44	2.41	1000 [B]	Y / Ireland (2016)
DT_{50} in sediment [days]	1000 [B]	1.44	2.41	1000 [B]	Y / Ireland (2016)
DT_{50} in whole system [days]	1000 [B]	1.44	2.41	1000 [B]	Y / Ireland (2016)
Max occurrence in soil [%]	4.4	0	0	0	Y / Ireland (2016)
Max occurrence in water/sed [%]	3.1	52.8	51.4	94.4	Y / Ireland (2016)

[A] Parent value. [B] FOCUS default

[C] Due to a numerical issues in the STEPS12 in FOCUS v3.2 model, a DT_{50} value of 2100 days was used in the modelling

PECsw/sed – Use No. 1 – Leafy vegetables, 1 × 28 g a.s./ha, BBCH 15 – 49

FOCUS Step 1 and 2

Table 8.9-5: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for active substance chlorantraniliprole

Use	Step	Region	Season	Chlorantraniliprole		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	6.92	6.66	20.6
	2	N-EU	Oct-Feb	2.65	2.6	7.91
			Mar-May	1.18	1.15	3.49
			Jun-Sep	1.18	1.15	3.49
		S-EU	Oct-Feb	2.16	2.11	6.44
			Mar-May	2.16	2.11	6.44
			Jun-Sep	1.67	1.63	4.97

Table 8.9-6: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.526	0.430	46.5
	2	N-EU	Oct-Feb	0.168	0.163	17.7
			Mar-May	0.102	0.063	7.49
			Jun-Sep	0.102	0.063	7.49
		S-EU	Oct-Feb	0.136	0.132	14.3
			Mar-May	0.136	0.132	14.3
			Jun-Sep	0.105	0.100	10.9

Table 8.9-7: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.028	0.021	6.36
	2	N-EU	Oct-Feb	0.008	0.008	2.40
			Mar-May	0.007	0.003	0.991
			Jun-Sep	0.007	0.003	0.991
		S-EU	Oct-Feb	0.007	0.006	1.93
			Mar-May	0.007	0.006	1.93
			Jun-Sep	0.007	0.004	1.46

Table 8.9-8: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.215	0.212	0.323
	2	N-EU	Oct-Feb	0.079	0.078	0.119
			Mar-May	0.034	0.034	0.051
			Jun-Sep	0.034	0.034	0.051
		S-EU	Oct-Feb	0.064	0.064	0.096
			Mar-May	0.064	0.064	0.096
			Jun-Sep	0.049	0.049	0.074

Table 8.9-9: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.492	0.477	1.47
	2	N-EU	Oct-Feb	0.183	0.181	0.551
			Mar-May	0.077	0.075	0.229
			Jun-Sep	0.077	0.075	0.229
		S-EU	Oct-Feb	0.148	0.145	0.443
			Mar-May	0.148	0.145	0.443
			Jun-Sep	0.112	0.11	0.336

Table 8.9-10: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.028	0.020	4.80
	2	N-EU	Oct-Feb	0.008	0.008	1.82
			Mar-May	0.008	0.003	0.759
			Jun-Sep	0.008	0.003	0.759
		S-EU	Oct-Feb	0.008	0.006	1.46
			Mar-May	0.008	0.006	1.46
			Jun-Sep	0.008	0.004	1.11

Table 8.9-11: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.212	0.012	33.5
	2	N-EU	Oct-Feb	0.126	0.009	12.4
			Mar-May	0.126	0.006	5.06
			Jun-Sep	0.126	0.006	5.06
		S-EU	Oct-Feb	0.126	0.008	9.98
			Mar-May	0.126	0.008	9.98
			Jun-Sep	0.126	0.007	7.52

Table 8.9-12: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	0.152	0.008	33.0
	2	N-EU	Oct-Feb	0.122	0.007	12.4
			Mar-May	0.122	0.006	5.14
			Jun-Sep	0.122	0.006	5.14
		S-EU	Oct-Feb	0.122	0.007	9.99
			Mar-May	0.122	0.007	9.99
			Jun-Sep	0.122	0.006	7.57

Table 8.9-13: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha Minimum crop cover	1	-	-	2.10	1.97	34.8
	2	N-EU	Oct-Feb	0.777	0.756	13.4
			Mar-May	0.353	0.334	5.91
			Jun-Sep	0.353	0.334	5.91
		S-EU	Oct-Feb	0.636	0.615	10.9
			Mar-May	0.636	0.615	10.9
			Jun-Sep	0.494	0.475	8.40

FOCUS Step 3

Table 8.9-14: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 28 g a.s./ha to leafy vegetables at BBCH 15-49

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha BBCH 15 – 49	D3 Ditch (1st)	15-May-92	0.178	0.066	Drift	0.03	0.01	0.008
	D3 Ditch (2nd)	17-Sep-92	0.177	0.051	Drift	0.019	0.007	0.005
	D4 Pond	25-Dec-85	0.183	0.8	Drainage	0.183	0.179	0.177
	D4 Stream	09-Dec-85	0.171	0.294	Drainage	0.142	0.11	0.095
	R1 Pond (1st)	30-May-84	0.046	0.163	Run-off	0.044	0.041	0.041
	R1 Pond (2nd)	17-Sep-78	0.022	0.096	Run-off	0.021	0.02	0.02
	R1 Stream (1st)	20-May-84	0.504	0.169	Run-off	0.061	0.029	0.022
	R1 Stream (2nd)	17-Sep-78	0.281	0.104	Run-off	0.032	0.013	0.01
	R3 Stream (1st)	20-Apr-80	0.426	0.187	Run-off	0.061	0.023	0.021
	R3 Stream (2nd)	23-Jul-75	0.51	0.247	Run-off	0.075	0.048	0.036
	R4 Stream (1st)	12-Apr-84	0.629	0.238	Run-off	0.071	0.043	0.033
	R4 Stream (2nd)	30-Jul-85	0.616	0.234	Run-off	0.099	0.044	0.034

FOCUS Step 4

Table 8.9-15: FOCUS Step 4 global maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 28 g a.s./ha to leafy cabbage at BBCH 15-49

Mitigation options									
No-spray buffer strip (m)		**10**		**20**		~~2~~		**5**	
Vegetated buffer strip (m)		**10**		**20**		~~2 (VFSmod)~~		**5 (VFSmod)**	
Drift reduction nozzle (%)		**-**		**90**		~~-~~		**-**	
Use	**Scenario**	**Global max PEC_{SW} [µg/L]**	**Global max PEC_{SED} [µg/kg]**	**Global max PEC_{SW} [µg/L]**	**Global max PEC_{SED} [µg/kg]**	~~Global max PEC_{SW} [µg/L]~~	~~Global max PEC_{SED} [µg/kg]~~	**Global max PEC_{SW} [µg/L]**	**Global max PEC_{SED} [µg/kg]**
Use No. 1: Leafy vegetables 1 × 28 g a.s./ha BBCH 15-49	D3 Ditch (1st)	0.026	0.012	0.002	0.009	~~0.106~~	~~0.041~~	0.049	0.020
	D3 Ditch (2nd)	0.026	0.009	0.002	0.005	~~0.105~~	~~0.031~~	0.048	0.016
	D4 Pond	0.183	0.796	0.182	0.79	~~0.183~~	~~0.802~~	0.183	0.799
	D4 Stream	0.171	0.293	0.171	0.293	~~0.171~~	~~0.294~~	0.171	0.293
	R1 Pond (1st)	0.628	0.504	0.628	0.504	~~0.628~~	~~0.505~~	0.628	0.504
	R1 Pond (2nd)	0.019	0.073	0.008	0.033	~~0.015~~	~~0.057~~	0.007	0.026
	R1 Stream (1st)	0.228	0.068	0.12	0.035	~~0.12~~	~~0.042~~	0.042	0.022
	R1 Stream (2nd)	0.228	0.068	0.12	0.035	~~0.12~~	~~0.042~~	0.043	0.011
	R3 Stream (1st)	0.194	0.08	0.102	0.042	~~0.231~~	~~0.104~~	0.162	0.072
	R3 Stream (2nd)	0.232	0.095	0.122	0.048	~~0.201~~	~~0.1~~	0.095	0.047
	R4 Stream (1st)	0.286	0.105	0.15	0.055	~~0.149~~	~~0.059~~	0.058	0.005
	R4 Stream (2nd)	0.28	0.102	0.147	0.053	~~0.231~~	~~0.104~~	0.162	0.072

PECsw/sed – Use No. 2 – Maize, 1 × 28 g a.s./ha, BBCH 20 – 87

FOCUS Step 1 and 2

Table 8.9-16: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for active substance chlorantraniliprole (Use No. 2)

Use	Step	Region	Season	Chlorantraniliprole		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	6.92	6.66	20.6
	2	N-EU	Mar-May	0.854	0.825	2.51
			Jun-Sep	0.854	0.825	2.51
		S-EU	Mar-May	1.51	1.47	4.48
			Jun-Sep	1.18	1.15	3.49

Table 8.9-17: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.526	0.430	46.5
	2	N-EU	Mar-May	0.102	0.046	5.23
			Jun-Sep	0.102	0.046	5.23
		S-EU	Mar-May	0.102	0.081	9.75
			Jun-Sep	0.102	0.063	7.49

Table 8.9-18: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.028	0.021	6.36
	2	N-EU	Mar-May	0.007	0.002	0.677
			Jun-Sep	0.007	0.002	0.677
		S-EU	Mar-May	0.007	0.004	1.30
			Jun-Sep	0.007	0.003	0.991

Table 8.9-19: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.215	0.212	0.323
	2	N-EU	Mar-May	0.024	0.024	0.036
			Jun-Sep	0.024	0.024	0.036
		S-EU	Mar-May	0.044	0.044	0.066
			Jun-Sep	0.034	0.034	0.051

Table 8.9-20: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.492	0.477	1.47
	2	N-EU	Mar-May	0.053	0.052	0.157
			Jun-Sep	0.053	0.052	0.157
		S-EU	Mar-May	0.100	0.099	0.300
			Jun-Sep	0.077	0.075	0.229

Table 8.9-21: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.028	0.020	4.80
	2	N-EU	Mar-May	0.008	0.002	0.524
			Jun-Sep	0.008	0.002	0.524
		S-EU	Mar-May	0.008	0.004	0.994
			Jun-Sep	0.008	0.003	0.759

Table 8.9-22: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.212	0.012	33.5
	2	N-EU	Mar-May	0.126	0.006	3.42
			Jun-Sep	0.126	0.006	3.42
		S-EU	Mar-May	0.126	0.007	6.70
			Jun-Sep	0.126	0.006	5.06

Table 8.9-23: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	0.152	0.008	33.0
	2	N-EU	Mar-May	0.122	0.006	3.52
			Jun-Sep	0.122	0.006	3.52
		S-EU	Mar-May	0.122	0.006	6.76
			Jun-Sep	0.122	0.006	5.14

Table 8.9-24: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 2: Maize 1 × 28 g a.s./ha Average crop cover	1	-	-	2.10	1.97	34.8
	2	N-EU	Mar-May	0.258	0.240	4.25
			Jun-Sep	0.258	0.240	4.25
		S-EU	Mar-May	0.447	0.428	7.57
			Jun-Sep	0.353	0.334	5.91

FOCUS Step 3

Table 8.9-25: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 28 g a.s./ha to maize at BBCH 20-87

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 2: Maize 1 × 28 g a.s./ha BBCH 20	D3 Ditch	21-Jun-92	0.147	0.049	Drift	0.021	0.007	0.005
	D4 Pond	24-Dec-85	0.200	0.775	Drainage	0.199	0.195	0.192
	D4 Stream	09-Dec-85	0.205	0.285	Drainage	0.165	0.127	0.107
	D5 Pond	16-Feb-79	0.149	0.798	Drainage	0.148	0.144	0.142
	D5 Stream	09-Jun-78	0.147	0.187	Drift	0.079	0.051	0.043
	R1 Pond	09-Jul-78	0.063	0.215	Run-off	0.061	0.058	0.057

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
	R1 Stream	17-Jun-78	0.453	0.239	Run-off	0.054	0.028	0.023
	R3 Stream	22-Jun-80	0.414	0.176	Run-off	0.054	0.027	0.026
	R4 Stream	09-May-84	0.717	0.264	Run-off	0.108	0.051	0.038
Use No. 2: Maize 1 × 28 g a.s./ha BBCH <87	D3 Ditch	18-Aug-92	0.147	0.057	Drift	0.027	0.009	0.007
	D4 Pond	24-Dec-85	0.127	0.515	Drainage	0.127	0.124	0.122
	D4 Stream	09-Dec-85	0.125	0.189	Drainage	0.099	0.080	0.068
	D5 Pond	15-Feb-79	0.087	0.509	Drainage	0.087	0.085	0.084
	D5 Stream	27-Aug-78	0.144	0.105	Drift	0.070	0.039	0.033
	R1 Pond	16-Dec-78	0.013	0.063	Run-off	0.013	0.012	0.012
	R1 Stream	29-Sep-78	0.211	0.054	Run-off	0.025	0.009	0.008
	R3 Stream	02-Sep-75	0.436	0.253	Run-off	0.057	0.023	0.017
	R4 Stream	14-Aug-85	0.500	0.192	Run-off	0.062	0.040	0.030

FOCUS Step 4

Table 8.9-26: FOCUS Step 4 global maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 28 g a.s./ha to maize at BBCH 20 - 87

VFSmod (m)		~~Yes~~			**Yes**			**No**			**No**		
No-spray buffer strip (m)		~~2~~			**5**			**10**			**20**		
Vegetated buffer strip (m)		~~2~~			**5**			**10**			**20**		
Drift reduction nozzle (%)		~~-~~			**-**			**-**			**90**		
Use	**Scenario**	~~Max PEC_{sw} [µg/L]~~	~~Max PEC_{sed} [µg/kg]~~	~~Main entry route~~	**Max PEC_{sw} [µg/L]**	**Max PEC_{sed} [µg/kg]**	**Main entry route**	**Max PEC_{sw} [µg/L]**	**Max PEC_{sed} [µg/kg]**	**Main entry route**	**Max PEC_{sw} [µg/L]**	**Max PEC_{sed} [µg/kg]**	**Main entry route**
Use No. 2: Maize 1 × 28 g a.s./ha BBCH 20	D3 Ditch	~~0.105~~	~~0.036~~	~~Drift~~	0.048	0.017	Drift	0.026	0.010	Drift	0.002	0.005	Drift
	D4 Pond	~~0.200~~	~~0.778~~	~~Drain~~	0.200	0.773	Drain	0.200	0.770	Drain	0.199	0.762	Drain
	D4 Stream	~~0.205~~	~~0.285~~	~~Drain~~	0.205	0.285	Drain	0.205	0.285	Drain	0.205	0.285	Drain
	D5 Pond	~~0.149~~	~~0.802~~	~~Drain~~	0.149	0.796	Drain	0.149	0.792	Drain	0.148	0.783	Drain
	D5 Stream	~~0.136~~	~~0.187~~	~~Drift~~	0.114	0.187	Drain	0.114	0.187	Drain	0.114	0.187	Drain
	R1 Pond	~~0.024~~	~~0.084~~	~~Run~~	0.015	0.050	Run	0.027	0.094	Run	0.013	0.044	Run
	R1 Stream	~~0.151~~	~~0.081~~	~~Run~~	0.081	0.043	Run	0.206	0.088	Run	0.108	0.044	Run
	R3 Stream	~~0.162~~	~~0.071~~	~~Run~~	0.077	0.034	Run	0.189	0.074	Run	0.099	0.038	Run
	R4 Stream	~~0.167~~	~~0.063~~	~~Run~~	0.042	0.022	Drift	0.325	0.115	Run	0.170	0.060	Run
Use No. 2: Maize 1 × 28 g a.s./ha BBCH <87	D3 Ditch	~~0.105~~	~~0.041~~	~~Drift~~	0.048	0.019	Drift	0.026	0.011	Drift	0.001	0.001	Drift
	D4 Pond	~~0.128~~	~~0.518~~	~~Drain~~	0.127	0.513	Drain	0.127	0.510	Drain	0.126	0.502	Drain
	D4 Stream	~~0.125~~	~~0.189~~	~~Drain~~	0.125	0.189	Drain	0.125	0.189	Drain	0.125	0.189	Drain
	D5 Pond	~~0.087~~	~~0.513~~	~~Drain~~	0.087	0.507	Drain	0.087	0.503	Drain	0.087	0.493	Drain
	D5 Stream	~~0.132~~	~~0.105~~	~~Drift~~	0.112	0.105	Drain	0.112	0.105	Drain	0.112	0.105	Drain
	R1 Pond	~~0.007~~	~~0.032~~	~~Drift~~	0.005	0.021	Drift	0.006	0.031	Run	0.002	0.011	Run
	R1 Stream	~~0.094~~	~~0.012~~	~~Drift~~	0.043	0.005	Drift	0.095	0.024	Run	0.049	0.012	Run
	R3 Stream	~~0.219~~	~~0.128~~	~~Run~~	0.143	0.081	Run	0.199	0.083	Run	0.105	0.041	Run
	R4 Stream	~~0.130~~	~~0.056~~	~~Run~~	0.043	0.019	Drift	0.227	0.084	Run	0.119	0.044	Run

PECsw/sed – Use No. 3 – Vines (late), 1 × 36 g a.s./ha, BBCH 57 – 83

FOCUS Step 1 and 2

Table 8.9-27: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for active substance chlorantraniliprole

Use	Step	Region	Season	Chlorantraniliprole		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	9.52	9.01	27.8
	2	N-EU	Oct-Feb	2.43	2.33	7.10
			Mar-May	1.43	1.34	4.07
			Jun-Sep	1.43	1.34	4.07
		S-EU	Oct-Feb	2.10	2.00	6.09
			Mar-May	2.10	2.00	6.09
			Jun-Sep	1.76	1.67	5.08

Table 8.9-28: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.926	0.575	61.5
	2	N-EU	Oct-Feb	0.380	0.132	14.3
			Mar-May	0.380	0.078	7.30
			Jun-Sep	0.380	0.078	7.30
		S-EU	Oct-Feb	0.380	0.114	12.0
			Mar-May	0.380	0.114	12.0
			Jun-Sep	0.380	0.096	9.63

Table 8.9-29: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.053	0.028	8.30
	2	N-EU	Oct-Feb	0.026	0.006	1.80
			Mar-May	0.026	0.004	0.835
			Jun-Sep	0.026	0.004	0.835
		S-EU	Oct-Feb	0.026	0.006	1.48
			Mar-May	0.026	0.006	1.48
			Jun-Sep	0.026	0.005	1.16

Table 8.9-30: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.287	0.282	0.429
	2	N-EU	Oct-Feb	0.067	0.065	0.099
			Mar-May	0.036	0.035	0.053
			Jun-Sep	0.036	0.035	0.053
		S-EU	Oct-Feb	0.056	0.055	0.084
			Mar-May	0.056	0.055	0.084
			Jun-Sep	0.046	0.045	0.068

Table 8.9-31: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.649	0.624	1.93
	2	N-EU	Oct-Feb	0.142	0.138	0.422
			Mar-May	0.069	0.066	0.201
			Jun-Sep	0.069	0.066	0.201
		S-EU	Oct-Feb	0.118	0.114	0.348
			Mar-May	0.118	0.114	0.348
			Jun-Sep	0.093	0.090	0.275

Table 8.9-32: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.054	0.027	6.31
	2	N-EU	Oct-Feb	0.028	0.006	1.41
			Mar-May	0.028	0.004	0.686
			Jun-Sep	0.028	0.004	0.686
		S-EU	Oct-Feb	0.028	0.006	1.17
			Mar-May	0.028	0.006	1.17
			Jun-Sep	0.028	0.005	0.927

Table 8.9-33: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.581	0.023	43.1
	2	N-EU	Oct-Feb	0.470	0.020	8.94
			Mar-May	0.470	0.019	3.87
			Jun-Sep	0.470	0.019	3.87
		S-EU	Oct-Feb	0.470	0.020	7.25
			Mar-May	0.470	0.020	7.25
			Jun-Sep	0.470	0.019	5.56

Table 8.9-34: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	0.496	0.018	42.5
	2	N-EU	Oct-Feb	0.458	0.020	9.39
			Mar-May	0.458	0.019	4.39
			Jun-Sep	0.458	0.019	4.39
		S-EU	Oct-Feb	0.458	0.020	7.72
			Mar-May	0.458	0.020	7.72
			Jun-Sep	0.458	0.019	6.06

Table 8.9-35: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 3: Vines (late) 1 × 36 g a.s./ha Full crop cover	1	-	-	3.14	2.67	47.1
	2	N-EU	Oct-Feb	0.745	0.680	12.0
			Mar-May	0.666	0.387	6.90
			Jun-Sep	0.666	0.387	6.90
		S-EU	Oct-Feb	0.666	0.548	10.3
			Mar-May	0.666	0.548	10.3
			Jun-Sep	0.666	0.467	8.61

FOCUS Step 3

Although Vines is not parameterised for any relevant D scenario for the CEU, it is considered to be covered by the results of the D scenarios for Pomefruit, a surrogate crop justified by being the only non-arable crop which covers the range of D scenarios required. It is not considered necessary to do more Pomefruit D scenario modelling at the slightly higher application rate for Vines (36 g/ha), since it clearly will not change the risk conclusions for D3/4/5, which indicate the need for the same label restriction that would be required for Pomefruit.

Table 8.9-36: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 36 g a.s./ha to vines at BBCH 57-83

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 3: Vines (late) 1 × 36 g a.s./ha BBCH 57	R1 Pond	21-Jun-84	0.025	0.076	Run-off	0.024	0.022	0.022
	R1 Stream	13-Jun-84	0.452	0.164	Drift	0.047	0.020	0.015
	R3 Stream	23-Jun-75	0.636	0.106	Drift	0.036	0.014	0.011
	R4 Stream	27-May-84	0.444	0.078	Drift	0.027	0.009	0.007
Use No. 3: Vines (late) 1 × 36 g a.s./ha BBCH <83	R1 Pond	20-Aug-78	0.022	0.065	Drift	0.021	0.019	0.019
	R1 Stream	20-Aug-78	0.453	0.056	Drift	0.014	0.005	0.003
	R3 Stream	23-Sep-75	0.639	0.130	Drift	0.059	0.033	0.025
	R4 Stream	31-Jul-85	0.453	0.138	Drift	0.044	0.015	0.014

FOCUS Step 4

Table 8.9-37: FOCUS Step 4 global maximum PEC_{SW} for chlorantraniliprole following application of 1 × 36 g a.s./ha to vines at BBCH 57-83

No-spray buffer strip (m)		-			5		
Vegetated buffer strip (m)		-			-		
Drift reduction nozzle (%)		50			-		
Use	Scenario	Global max PEC_{SW} [µg/L]	Global max PEC_{SED} [µg/kg]	Main entry route	Global max PEC_{SW} [µg/L]	Global max PEC_{SED} [µg/kg]	Main entry route
Use No. 3: Vines (late) 1 × 36 g a.s./ha BBCH 57	R1 Pond	0.015	0.046	Runoff	0.028	0.086	Runoff
	R1 Stream	0.409	0.160	Runoff	0.409	0.162	Runoff
	R3 Stream	0.318	0.084	Drift	0.463	0.085	Drift
	R4 Stream	0.222	0.077	Drift	0.324	0.077	Drift
Use No. 3: Vines (late) 1 × 36 g a.s./ha BBCH <83	R1 Pond	0.011	0.033	Drift	0.026	0.075	Drift
	R1 Stream	0.227	0.028	Drift	0.330	0.041	Drift
	R3 Stream	0.319	0.123	Drift	0.465	0.126	Drift
	R4 Stream	0.322	0.135	Runoff	0.330	0.136	Drift

PECsw/sed – Use No. 4 – Pomefruits, 1 × 31 g a.s./ha, BBCH 70 – 87

FOCUS Step 1 and 2

Table 8.9-38: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for active substance chlorantraniliprole

Use	Step	Region	Season	Chlorantraniliprole		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	9.00	8.31	25.6
	2	N-EU	Jun-Sep	1.78	1.64	4.99
			Oct-Feb	2.54	2.39	7.27
		S-EU	Jun-Sep	2.03	1.89	5.75
			Oct-Feb	2.29	2.14	6.51

Table 8.9-39: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	1.11	0.522	55.2
	2	N-EU	Jun-Sep	0.641	0.099	7.98
			Oct-Feb	0.641	0.139	13.2
		S-EU	Jun-Sep	0.641	0.112	9.73
			Oct-Feb	0.641	0.126	11.5

Table 8.9-40: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	0.068	0.0253	7.31
	2	N-EU	Jun-Sep	0.044	0.005	0.807
			Oct-Feb	0.044	0.007	1.54
		S-EU	Jun-Sep	0.044	0.005	1.05
			Oct-Feb	0.044	0.006	1.29

Table 8.9-41: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	0.261	0.255	0.387
	2	N-EU	Jun-Sep	0.041	0.039	0.060
			Oct-Feb	0.064	0.062	0.095
		S-EU	Jun-Sep	0.049	0.047	0.071
			Oct-Feb	0.056	0.055	0.083

Table 8.9-42: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4w: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	0.579	0.552	1.710
	2	N-EU	Jun-Sep	0.070	0.066	0.202
			Oct-Feb	0.126	0.121	0.368
		S-EU	Jun-Sep	0.089	0.085	0.257
			Oct-Feb	0.107	0.103	0.312

Table 8.9-43: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	0.069	0.025	5.60
	2	N-EU	Jun-Sep	0.047	0.005	0.705
			Oct-Feb	0.047	0.007	1.25
		S-EU	Jun-Sep	0.047	0.006	0.887
			Oct-Feb	0.047	0.006	1.07

Table 8.9-44: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	0.889	0.030	37.1
	2	N-EU	Jun-Sep	0.793	0.031	3.38
			Oct-Feb	0.793	0.032	7.19
		S-EU	Jun-Sep	0.793	0.031	4.65
			Oct-Feb	0.793	0.031	5.92

Table 8.9-45: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	0.805	0.025	36.6
	2	N-EU	Jun-Sep	0.772	0.032	4.30
			Oct-Feb	0.772	0.032	8.06
		S-EU	Jun-Sep	0.772	0.032	5.56
			Oct-Feb	0.772	0.032	6.81

Table 8.9-46: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 4: Pomes 1 × 31 g a.s./ha Full crop cover	1	-	-	3.26	2.47	43.4
	2	N-EU	Jun-Sep	1.12	0.502	8.46
			Oct-Feb	1.12	0.684	12.3
		S-EU	Jun-Sep	1.12	0.563	9.74
			Oct-Feb	1.12	0.624	11.0

FOCUS Step 3

Table 8.9-47: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 31 g a.s./ha to pomefruits at BBCH 70-87

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 4: Pomefruits 1 × 31 g a.s./ha BBCH 70	D3 Ditch	08-Jul-92	1.140	0.518	Drift	0.326	0.110	0.083
	D4 Pond	24-Dec-85	0.209	0.825	Drainage	0.208	0.203	0.199
	D4 Stream	11-Jul-85	1.140	0.279	Drift	0.171	0.129	0.108
	D5 Pond	15-Feb-79	0.138	0.878	Drainage	0.137	0.134	0.132
	D5 Stream	09-Jun-78	1.230	0.316	Drift	0.070	0.046	0.041
	R1 Pond	11-Jul-78	0.051	0.144	Drift	0.048	0.045	0.044
	R1 Stream	11-Jul-78	0.857	0.070	Drift	0.022	0.009	0.007
	R3 Stream	23-Jun-75	1.230	0.226	Drift	0.066	0.022	0.017
	R4 Stream	08-Jun-85	0.875	0.195	Drift	0.079	0.036	0.030

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 4: Pomefruits 1 × 31 g a.s./ha BBCH <87	D3 Ditch	26-Sep-92	1.140	0.519	Drift	0.326	0.110	0.083
	D4 Pond	24-Dec-85	0.313	1.160	Drainage	0.312	0.303	0.298
	D4 Stream	12-Sep-85	1.110	0.420	Drift	0.249	0.196	0.163
	D5 Pond	15-Feb-79	0.142	0.907	Drainage	0.141	0.137	0.135
	D5 Stream	27-Aug-78	1.230	0.284	Drift	0.097	0.056	0.048
	R1 Pond	17-Sep-78	0.051	0.148	Drift	0.048	0.045	0.044
	R1 Stream	17-Sep-78	0.875	0.108	Drift	0.026	0.009	0.007
	R3 Stream	28-Aug-75	1.230	0.226	Drift	0.123	0.041	0.031
	R4 Stream	15-Sep-85	0.875	0.115	Drift	0.046	0.029	0.022

FOCUS Step 4

Table 8.9-48: FOCUS Step 4 global maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 31 g a.s./ha to pomefruits at BBCH 70

No-spray buffer strip (m)		-			-			5			10		
Vegetated buffer strip (m)		-			-			-			10		
Drift reduction nozzle (%)		50			75			50			-		
Use	Scenario	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]	Main entry route	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]	Main entry route	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]	Main entry route	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]	Main entry route
Use No. 4: Pomefruits 1 × 31 g a.s./ha BBCH 70	D3 Ditch	0.570	0.263	Drift	0.285	0.134	Drift	0.385	0.179	Drift	0.344	0.161	Drift
	D4 Pond	0.202	0.765	Drain	0.198	0.735	Drain	0.203	0.774	Drain	0.204	0.781	Drain
	D4 Stream	0.572	0.275	Drift	0.286	0.274	Drift	0.446	0.275	Drift	0.399	0.274	Drift
	D5 Pond	0.133	0.812	Drain	0.131	0.778	Drain	0.134	0.821	Drain	0.134	0.830	Drain
	D5 Stream	0.617	0.202	Drift	0.308	0.171	Drift	0.481	0.176	Drift	0.430	0.172	Drift
	R1 Pond	0.026	0.074	Drift	0.013	0.039	Drift	0.029	0.085	Drift	0.032	0.092	Drift
	R1 Stream	0.429	0.049	Drift	0.214	0.046	Drift	0.335	0.047	Drift	0.299	0.025	Drift
	R3 Stream	0.616	0.114	Drift	0.308	0.059	Drift	0.481	0.089	Drift	0.430	0.080	Drift
	R4 Stream	0.486	0.183	Runoff	0.486	0.177	Runoff	0.486	0.181	Runoff	0.305	0.084	Drift

No-spray buffer strip (m)		20		
Vegetated buffer strip (m)		20		
Drift reduction nozzle (%)		90		
Use	Scenario	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]	Main entry route
Use No. 4: Pomefruits 1 × 31 g a.s./ha BBCH 70	D3 Ditch	0.011	0.005	Drift
	D4 Pond	0.195	0.709	Drain
	D4 Stream	0.214	0.272	Drain
	D5 Pond	0.128	0.748	Drain
	D5 Stream	0.105	0.170	Drain
	R1 Pond	0.001	0.005	Run
	R1 Stream	0.036	0.009	Run
	R3 Stream	0.027	0.013	Run
	R4 Stream	0.110	0.040	Run

Table 8.9-49: FOCUS Step 4 global maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 31 g a.s./ha to pomefruits at BBCH <87

No-spray buffer strip (m)		-			-			5			10		
Vegetated buffer strip (m)		-			-			-			10		
Drift reduction nozzle (%)		50			75			50			-		
Use	**Scenario**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 4: Pomefruits 1 × 31 g a.s./ha BBCH < 87	D3 Ditch	0.570	0.263	Drift	0.285	0.134	Drift	0.385	0.179	Drift	0.344	0.161	Drift
	D4 Pond	0.303	1.100	Drain	0.299	1.070	Drain	0.305	1.11	Drain	0.306	1.120	Drain
	D4 Stream	0.552	0.418	Drift	0.320	0.417	Drain	0.431	0.418	Drift	0.386	0.418	Drift
	D5 Pond	0.136	0.838	Drain	0.132	0.804	Drain	0.136	0.848	Drain	0.137	0.857	Drain
	D5 Stream	0.617	0.170	Drift	0.308	0.164	Drift	0.481	0.165	Drift	0.430	0.165	Drift
	R1 Pond	0.026	0.075	Drift	0.013	0.038	Drift	0.029	0.086	Drift	0.032	0.095	Drift
	R1 Stream	0.437	0.054	Drift	0.219	0.027	Drift	0.341	0.042	Drift	0.305	0.038	Drift
	R3 Stream	0.616	0.199	Drift	0.465	0.186	Run	0.481	0.193	Drift	0.430	0.096	Drift
	R4 Stream	0.437	0.110	Drift	0.241	0.107	Run	0.341	0.108	Drift	0.305	0.051	Drift

No-spray buffer strip (m)		20		
Vegetated buffer strip (m)		20		
Drift reduction nozzle (%)		90		
Use	**Scenario**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 4: Pomefruits 1 × 31 g a.s./ha BBCH < 87	D3 Ditch	0.011	0.005	Drift
	D4 Pond	0.294	1.050	Drain
	D4 Stream	0.320	0.417	Drain
	D5 Pond	0.129	0.774	Drain
	D5 Stream	0.154	0.162	Drain
	R1 Pond	0.001	0.005	Drift
	R1 Stream	0.009	0.001	Drift
	R3 Stream	0.110	0.041	Run
	R4 Stream	0.056	0.025	Run

PECsw/sed – Use No. 5 – Pomefruits, 1 × 24 g a.s./ha, BBCH 70 – 87

FOCUS Step 1 and 2

Table 8.9-50: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for active substance chlorantraniliprole

Use	Step	Region	Season	Chlorantraniliprole		
				Maximum PEC_{SW} [µg/L]	**21-d TWA PEC_{SW} [µg/L]**	**Maximum PEC_{SED} [µg/kg]**
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	6.96	6.44	19.9
	2	N-EU	Jun-Sep	1.38	1.27	3.86
			Oct-Feb	1.97	1.85	5.63
		S-EU	Jun-Sep	1.58	1.46	4.45
			Oct-Feb	1.77	1.66	5.04

Table 8.9-51: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.861	0.405	42.7
	2	N-EU	Jun-Sep	0.497	0.076	6.18
			Oct-Feb	0.497	0.108	10.2
		S-EU	Jun-Sep	0.497	0.087	7.54
			Oct-Feb	0.497	0.097	8.89

Table 8.9-52: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.052	0.0196	5.66
	2	N-EU	Jun-Sep	0.034	0.004	0.625
			Oct-Feb	0.034	0.005	1.19
		S-EU	Jun-Sep	0.034	0.004	0.813
			Oct-Feb	0.034	0.005	1.00

Table 8.9-53: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.202	0.197	0.300
	2	N-EU	Jun-Sep	0.032	0.030	0.046
			Oct-Feb	0.050	0.048	0.073
		S-EU	Jun-Sep	0.038	0.036	0.055
			Oct-Feb	0.044	0.042	0.064

Table 8.9-54: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.449	0.428	1.32
	2	N-EU	Jun-Sep	0.054	0.051	0.156
			Oct-Feb	0.097	0.094	0.285
		S-EU	Jun-Sep	0.069	0.065	0.199
			Oct-Feb	0.083	0.080	0.242

Table 8.9-55: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.054	0.019	4.33
	2	N-EU	Jun-Sep	0.036	0.004	0.546
			Oct-Feb	0.036	0.005	0.969
		S-EU	Jun-Sep	0.036	0.004	0.687
			Oct-Feb	0.036	0.005	0.828

Table 8.9-56: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.688	0.023	28.7
	2	N-EU	Jun-Sep	0.614	0.024	2.62
			Oct-Feb	0.614	0.025	5.57
		S-EU	Jun-Sep	0.614	0.024	3.60
			Oct-Feb	0.614	0.024	4.59

Table 8.9-57: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	0.623	0.019	28.3
	2	N-EU	Jun-Sep	0.598	0.025	3.33
			Oct-Feb	0.598	0.025	6.24
		S-EU	Jun-Sep	0.598	0.025	4.30
			Oct-Feb	0.598	0.025	5.27

Table 8.9-58: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 5: Pomes 1 × 24 g a.s./ha Full crop cover	1	-	-	2.52	1.91	33.6
	2	N-EU	Jun-Sep	0.869	0.389	6.55
			Oct-Feb	0.869	0.530	9.53
		S-EU	Jun-Sep	0.869	0.436	7.54
			Oct-Feb	0.869	0.483	8.54

FOCUS Step 3

Table 8.9-59: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 24 g a.s./ha to pomefruits at BBCH 70-87

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 5: Pomefruits 1 × 24 g a.s./ha BBCH 70	D3 Ditch	08-Jul-92	0.882	0.404	Drift	0.252	0.085	0.064
	D4 Pond	24-Dec-85	0.162	0.641	Drainage	0.161	0.157	0.154
	D4 Stream	11-Jul-85	0.885	0.217	Drift	0.131	0.100	0.083
	D5 Pond	15-Feb-79	0.105	0.676	Drainage	0.105	0.102	0.101
	D5 Stream	09-Jun-78	0.955	0.244	Drift	0.054	0.035	0.031
	R1 Pond	11-Jul-78	0.040	0.112	Drift	0.037	0.035	0.034
	R1 Stream	11-Jul-78	0.664	0.054	Drift	0.017	0.007	0.005
	R3 Stream	23-Jun-75	0.955	0.176	Drift	0.051	0.017	0.013
	R4 Stream	08-Jun-85	0.677	0.151	Drift	0.061	0.028	0.023
Use No. 5: Pomefruits 1 × 24 g a.s./ha BBCH < 87	D3 Ditch	26-Sep-92	0.882	0.404	Drift	0.252	0.085	0.064
	D4 Pond	24-Dec-85	0.241	0.901	Drainage	0.240	0.234	0.230
	D4 Stream	12-Sep-85	0.855	0.326	Drift	0.190	0.152	0.126
	D5 Pond	15-Feb-79	0.109	0.703	Drainage	0.108	0.105	0.104
	D5 Stream	27-Aug-78	0.955	0.221	Drift	0.076	0.044	0.037
	R1 Pond	17-Sep-78	0.040	0.115	Drift	0.037	0.035	0.034
	R1 Stream	17-Sep-78	0.677	0.084	Drift	0.020	0.007	0.005
	R3 Stream	28-Aug-75	0.955	0.176	Drift	0.095	0.032	0.024
	R4 Stream	15-Sep-85	0.677	0.090	Drift	0.036	0.023	0.017

FOCUS Step 4

In the table below, maximum mitigation is shown only to demonstrate that drainage PEC values at step 3 do no reduce significantly.

Table 8.9-60: FOCUS Step 4 global maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 24 g a.s./ha to pomefruits at BBCH 70

No-spray buffer strip (m)		**-**			**-**			**5**			**10**		
Vegetated buffer strip (m)		**-**			**-**			**-**			**10**		
Drift reduction nozzle (%)		**50**			**75**			**50**			**-**		
Use	**Scenario**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 5: Pomefruits 1 × 24 g a.s./ha BBCH 70	D3 Ditch	0.441	0.205	Drift	0.221	0.104	Drift	0.298	0.140	Drift	0.266	0.125	Drift
	D4 Pond	0.156	0.595	Drain	0.153	0.571	Drain	0.157	0.601	Drain	0.158	0.607	Drain
	D4 Stream	0.443	0.214	Drift	0.221	0.213	Drift	0.346	0.214	Drift	0.309	0.214	Drift
	D5 Pond	0.102	0.624	Drain	0.100	0.598	Drain	0.102	0.632	Drain	0.103	0.638	Drain
	D5 Stream	0.478	0.155	Drift	0.239	0.131	Drift	0.373	0.136	Drift	0.333	0.132	Drift
	R1 Pond	0.020	0.058	Drift	0.010	0.030	Drift	0.023	0.066	Drift	0.025	0.072	Drift
	R1 Stream	0.332	0.037	Drift	0.166	0.035	Drift	0.259	0.037	Drift	0.232	0.019	Drift
	R3 Stream	0.477	0.089	Drift	0.239	0.046	Drift	0.373	0.069	Drift	0.333	0.062	Drift
	R4 Stream	0.374	0.142	Run	0.374	0.137	Run	0.374	0.140	Run	0.236	0.065	Drift

No-spray buffer strip (m)		**20**		
Vegetated buffer strip (m)		**20**		
Drift reduction nozzle (%)		**90**		
Use	**Scenario**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 5: Pomefruits 1 × 24 g a.s./ha BBCH 70	D3 Ditch	0.008	0.004	Drift
	D4 Pond	0.151	0.550	Drain
	D4 Stream	0.165	0.212	Drain
	D5 Pond	0.098	0.575	Drain
	D5 Stream	0.081	0.130	Drain
	R1 Pond	0.001	0.004	Run
	R1 Stream	0.027	0.007	Run
	R3 Stream	0.020	0.010	Run
	R4 Stream	0.084	0.031	Run

Table 8.9-61: FOCUS Step 4 global maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 24 g a.s./ha to pomefruits at BBCH <87

No-spray buffer strip (m)		-			-			5			10		
Vegetated buffer strip (m)		-			-			-			10		
Drift reduction nozzle (%)		50			75			50			-		
Use	**Scenario**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 5: Pomefruits 1 × 24 g a.s./ha BBCH < 87	D3 Ditch	0.441	0.205	Drift	0.221	0.104	Drift	0.298	0.140	Drift	0.266	0.125	Drift
	D4 Pond	0.234	0.855	Drain	0.230	0.832	Drain	0.235	0.862	Drain	0.236	0.867	Drain
	D4 Stream	0.428	0.325	Drift	0.245	0.324	Drain	0.334	0.325	Drift	0.298	0.325	Drift
	D5 Pond	0.104	0.650	Drain	0.101	0.623	Drain	0.105	0.658	Drain	0.105	0.664	Drain
	D5 Stream	0.478	0.132	Drift	0.239	0.127	Drift	0.373	0.128	Drift	0.333	0.127	Drift
	R1 Pond	0.020	0.059	Drift	0.010	0.030	Drift	0.023	0.067	Drift	0.025	0.074	Drift
	R1 Stream	0.339	0.042	Drift	0.169	0.021	Drift	0.264	0.033	Drift	0.236	0.030	Drift
	R3 Stream	0.477	0.154	Drift	0.357	0.144	Run	0.373	0.150	Drift	0.333	0.074	Drift
	R4 Stream	0.339	0.086	Drift	0.186	0.083	Run	0.264	0.085	Drift	0.236	0.040	Drift

No-spray buffer strip (m)		20		
Vegetated buffer strip (m)		20		
Drift reduction nozzle (%)		90		
Use	**Scenario**	**Max PEC_{SW} [µg/L]**	**Max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 5: Pomefruits 1 × 24 g a.s./ha BBCH < 87	D3 Ditch	0.008	0.004	Drift
	D4 Pond	0.227	0.812	Drain
	D4 Stream	0.245	0.324	Drain
	D5 Pond	0.099	0.600	Drain
	D5 Stream	0.120	0.125	Drain
	R1 Pond	0.001	0.004	Drift
	R1 Stream	0.007	0.001	Drift
	R3 Stream	0.084	0.032	Run
	R4 Stream	0.043	0.020	Run

PECsw/sed – Use No. 6 – Potatoes, 1 × 12 g a.s./ha, BBCH 31 – 60

FOCUS Step 1 and 2

Table 8.9-62: FOCUS Steps 1 and 2 PECSW and PECSED for active substance chlorantraniliprole (Use No. 6 ~~7~~)

Use	Step	Region	Season	Chlorantraniliprole		
				*Maximum PEC_{SW} [µg/L]	*21-d TWA PEC_{SW} [µg/L]	*Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	2.96	2.85	8.81
	2	N-EU	Oct-Feb	0.785	0.768	2.34
			Mar-May	0.366	0.354	1.08
			Jun-Sep	0.366	0.354	1.08
		S-EU	Oct-Feb	0.646	0.630	1.92
			Mar-May	0.646	0.630	1.92
			Jun-Sep	0.506	0.492	1.50

* values in brackets are for single applications

Table 8.9-63: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.451	0.369	39.8
	2	N-EU	Oct-Feb	0.049	0.047	5.15
			Mar-May	0.044	0.020	2.24
			Jun-Sep	0.044	0.020	2.24
		S-EU	Oct-Feb	0.044	0.035	4.18
			Mar-May	0.044	0.035	4.18
			Jun-Sep	0.044	0.027	3.21

Table 8.9-64: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.024	0.018	5.45
	2	N-EU	Oct-Feb	0.003	0.002	0.693
			Mar-May	0.003	0.001	0.290
			Jun-Sep	0.003	0.001	0.290
		S-EU	Oct-Feb	0.003	0.002	0.559
			Mar-May	0.003	0.002	0.559
			Jun-Sep	0.003	0.001	0.425

Table 8.9-65: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.184	0.182	0.277
	2	N-EU	Oct-Feb	0.023	0.023	0.035
			Mar-May	0.010	0.010	0.015
			Jun-Sep	0.010	0.010	0.015
		S-EU	Oct-Feb	0.019	0.019	0.028
			Mar-May	0.019	0.019	0.028
			Jun-Sep	0.015	0.014	0.022

Table 8.9-66: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6w: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.421	0.409	1.26
	2	N-EU	Oct-Feb	0.053	0.052	0.159
			Mar-May	0.023	0.022	0.067
			Jun-Sep	0.023	0.022	0.067
		S-EU	Oct-Feb	0.043	0.042	0.129
			Mar-May	0.043	0.042	0.129
			Jun-Sep	0.033	0.032	0.098

Table 8.9-67: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.024	0.018	4.12
	2	N-EU	Oct-Feb	0.003	0.002	0.527
			Mar-May	0.003	0.001	0.225
			Jun-Sep	0.003	0.001	0.225
		S-EU	Oct-Feb	0.003	0.002	0.426
			Mar-May	0.003	0.002	0.426
			Jun-Sep	0.003	0.001	0.325

Table 8.9-68: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.091	0.005	14.4
	2	N-EU	Oct-Feb	0.054	0.003	3.57
			Mar-May	0.054	0.003	1.46
			Jun-Sep	0.054	0.003	1.46
		S-EU	Oct-Feb	0.054	0.003	2.87
			Mar-May	0.054	0.003	2.87
			Jun-Sep	0.054	0.003	2.17

Table 8.9-69: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	0.130	0.007	28.3
	2	N-EU	Oct-Feb	0.052	0.003	3.59
			Mar-May	0.052	0.002	1.51
			Jun-Sep	0.052	0.002	1.51
		S-EU	Oct-Feb	0.052	0.003	2.90
			Mar-May	0.052	0.003	2.90
			Jun-Sep	0.052	0.003	2.20

Table 8.9-70: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 6: Potatoes 1 × 12 g a.s./ha Average crop cover	1	-	-	1.80	1.69	29.8
	2	N-EU	Oct-Feb	0.232	0.224	3.96
			Mar-May	0.111	0.103	1.82
			Jun-Sep	0.111	0.103	1.82
		S-EU	Oct-Feb	0.192	0.183	3.24
			Mar-May	0.192	0.183	3.24
			Jun-Sep	0.151	0.143	2.53

FOCUS Step 3

Table 8.9-71: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 1 × 12 g a.s./ha to potatoes and BBCH 31-60

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 6: Potatoes 1 × 12 g a.s./ha BBCH 31	D3 Ditch	26-Jun-92	0.063	0.023	Drift	0.010	0.003	0.002
	D4 Pond	24-Dec-85	0.105	0.450	Drainage	0.105	0.103	0.101
	D4 Stream	09-Dec-85	0.100	0.166	Drainage	0.083	0.064	0.055
	R1 Pond	09-Jul-78	0.021	0.075	Run-off	0.021	0.020	0.019
	R1 Stream	17-Jun-78	0.152	0.072	Run-off	0.018	0.009	0.008
	R3 Stream	23-May-80	0.224	0.069	Run-off	0.031	0.011	0.011

FOCUS Step 4

Not required

PECsw/sed – Use No. 7 – Potatoes, 2 × 12 g a.s./ha [7-d interval], BBCH 31 – 60

FOCUS Step 1 and 2

Table 8.9-72: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for active substance chlorantraniliprole

Use	Step	Region	Season	Chlorantraniliprole		
				*Maximum PEC_{SW} [µg/L]	*21-d TWA PEC_{SW} [µg/L]	*Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	5.93	5.71	17.6
	2	N-EU	Oct-Feb	1.53 (0.785)	1.49 (0.768)	4.54 (2.34)
			Mar-May	0.702 (0.366)	0.679 (0.354)	2.07 (1.08)
			Jun-Sep	0.702 (0.366)	0.679 (0.354)	2.07 (1.08)
		S-EU	Oct-Feb	1.25 (0.646)	1.22 (0.630)	3.72 (1.92)
			Mar-May	1.25 (0.646)	1.22 (0.630)	3.72 (1.92)
			Jun-Sep	0.976 (0.506)	0.950 (0.492)	2.89 (1.50)

* values in brackets are for single applications

Table 8.9-73: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-EQW78

Use	Step	Region	Season	Metabolite IN-EQW78		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.451	0.369	39.8
	2	N-EU	Oct-Feb	0.096 (0.049)	0.093 (0.047)	10.1 (5.15)
			Mar-May	0.043 (0.044)	0.040 (0.020)	4.37 (2.24)
			Jun-Sep	0.043 (0.044)	0.040 (0.020)	4.37 (2.24)
		S-EU	Oct-Feb	0.079 (0.044)	0.076 (0.035)	8.19 (4.18)
			Mar-May	0.079 (0.044)	0.076 (0.035)	8.19 (4.18)
			Jun-Sep	0.061 (0.044)	0.058 (0.027)	6.28 (3.21)

Table 8.9-74: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-ECD73

Use	Step	Region	Season	Metabolite IN-ECD73		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.024	0.018	5.45
	2	N-EU	Oct-Feb	0.005 (0.003)	0.005 (0.002)	1.37 (0.693)
			Mar-May	0.003 (0.003)	0.002 (0.001)	0.572 (0.290)
			Jun-Sep	0.003 (0.003)	0.002 (0.001)	0.572 (0.290)
		S-EU	Oct-Feb	0.004 (0.003)	0.004 (0.002)	1.11 (0.559)
			Mar-May	0.004 (0.003)	0.004 (0.002)	1.11 (0.559)
			Jun-Sep	0.003 (0.003)	0.003 (0.001)	0.839 (0.425)

Table 8.9-75: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F6L99

Use	Step	Region	Season	Metabolite IN-F6L99		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.184	0.182	0.277
	2	N-EU	Oct-Feb	0.044 (0.023)	0.049 (0.023)	0.067 (0.035)
			Mar-May	0.020 (0.010)	0.019 (0.010)	0.029 (0.015)
			Jun-Sep	0.020 (0.010)	0.019 (0.010)	0.029 (0.015)
		S-EU	Oct-Feb	0.036 (0.019)	0.036 (0.019)	0.054 (0.028)
			Mar-May	0.036 (0.019)	0.036 (0.019)	0.054 (0.028)
			Jun-Sep	0.028 (0.015)	0.028 (0.014)	0.042 (0.022)

Table 8.9-76: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-F9N04

Use	Step	Region	Season	Metabolite IN-F9N04		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.421	0.409	1.26
	2	N-EU	Oct-Feb	0.104 (0.053)	0.102 (0.052)	0.312 (0.159)
			Mar-May	0.044 (0.023)	0.043 (0.022)	0.131 (0.068)
			Jun-Sep	0.044 (0.023)	0.043 (0.022)	0.131 (0.068)
		S-EU	Oct-Feb	0.084 (0.043)	0.083 (0.042)	0.252 (0.129)
			Mar-May	0.084 (0.043)	0.083 (0.042)	0.252 (0.129)
			Jun-Sep	0.064 (0.033)	0.063 (0.032)	0.191 (0.098)

Table 8.9-77: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-GAZ70

Use	Step	Region	Season	Metabolite IN-GAZ70		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.024	0.018	4.12
	2	N-EU	Oct-Feb	0.005 (0.003)	0.004 (0.002)	1.04 (0.527)
			Mar-May	0.003 (0.003)	0.002 (0.001)	0.441 (0.225)
			Jun-Sep	0.003 (0.003)	0.002 (0.001)	0.441 (0.225)
		S-EU	Oct-Feb	0.004 (0.003)	0.004 (0.002)	0.840 (0.426)
			Mar-May	0.004 (0.003)	0.004 (0.002)	0.840 (0.426)
			Jun-Sep	0.003 (0.003)	0.002 (0.001)	0.640 (0.325)

Table 8.9-78: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA22

Use	Step	Region	Season	Metabolite IN-LBA22		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.091	0.005	14.4
	2	N-EU	Oct-Feb	0.048 (0.054)	0.004 (0.003)	6.96 (3.57)
			Mar-May	0.048 (0.054)	0.003 (0.003)	2.82 (1.46)
			Jun-Sep	0.048 (0.054)	0.003 (0.003)	2.82 (1.46)
		S-EU	Oct-Feb	0.048 (0.054)	0.004 (0.003)	5.58 (2.87)
			Mar-May	0.048 (0.054)	0.004 (0.003)	5.58 (2.87)
			Jun-Sep	0.048 (0.054)	0.003 (0.003)	4.20 (2.17)

Table 8.9-79: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA23

Use	Step	Region	Season	Metabolite IN-LBA23		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	0.130	0.007	28.3
	2	N-EU	Oct-Feb	0.046 (0.052)	0.003 (0.003)	6.93 (3.59)
			Mar-May	0.046 (0.052)	0.002 (0.002)	2.85 (1.51)
			Jun-Sep	0.046 (0.052)	0.002 (0.002)	2.85 (1.51)
		S-EU	Oct-Feb	0.046 (0.052)	0.003 (0.003)	5.57 (2.90)
			Mar-May	0.046 (0.052)	0.003 (0.003)	5.57 (2.90)
			Jun-Sep	0.046 (0.052)	0.003 (0.003)	4.21 (2.20)

Table 8.9-80: FOCUS Steps 1 and 2 PEC_{SW} and PEC_{SED} for metabolite IN-LBA24

Use	Step	Region	Season	Metabolite IN-LBA24		
				Maximum PEC_{SW} [µg/L]	21-d TWA PEC_{SW} [µg/L]	Maximum PEC_{SED} [µg/kg]
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] Average crop cover	1	-	-	1.80	1.69	29.8
	2	N-EU	Oct-Feb	0.450 (0.232)	0.434 (0.224)	7.69 (3.96)
			Mar-May	0.211 (0.111)	0.198 (0.103)	3.50 (1.82)
			Jun-Sep	0.211 (0.111)	0.198 (0.103)	3.50 (1.82)
		S-EU	Oct-Feb	0.370 (0.192)	0.356 (0.183)	6.29 (3.24)
			Mar-May	0.370 (0.192)	0.356 (0.183)	6.29 (3.24)
			Jun-Sep	0.291 (0.151)	0.277 (0.143)	4.90 (2.53)

FOCUS Step 3

Please refer to use no. 6 for single application results for potatoes.

Table 8.9-81: FOCUS Step 3 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 2 × 12 g a.s./ha to potatoes at a 7-day interval and BBCH 31-60

Use	Scenario	Date of maximum PEC_{SW}	Global maximum		Main Entry Route	$PEC_{SW,TWA}$ [µg/L]		
			PEC_{SW} [µg/L]	PEC_{SED} [µg/kg]		7-d	21-d	28-d
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] BBCH 31	D3 Ditch	08-Jul-92	0.055	0.025	Drift	0.009	0.006	0.004
	D4 Pond	24-Dec-85	0.215	0.904	Drainage	0.215	0.210	0.207
	D4 Stream	09-Dec-85	0.205	0.333	Drainage	0.172	0.130	0.111
	R1 Pond	09-Jul-78	0.046	0.157	Run-off	0.044	0.042	0.041
	R1 Stream	17-Jun-78	0.330	0.169	Run-off	0.039	0.020	0.017
	R3 Stream	16-Jun-80	0.239	0.115	Run-off	0.031	0.020	0.016

FOCUS Step 4

Step 4 simulations were not required for 1 application as these passes at step 3 (refer to use no.6). In the table below, only one set of mitigation is modelled, to demonstrate that high runoff and spray reduction mitigation measures cannot significantly reduce the PECsed obtained for the scenario D4 Pond at step3, via drainage as main route of emission.

Table 8.9-82: FOCUS Step 4 Global Maximum PEC_{SW} and PEC_{SED} for chlorantraniliprole following application of 2 × 12 g a.s./ha to potatoes at a 7-day interval and BBCH 31-60

No-spray buffer strip (m)		**20**		
Vegetated buffer strip (m)		**20**		
Drift reduction nozzle (%)		**90**		
Use	**Scenario**	**Global max PEC_{SW} [µg/L]**	**Global max PEC_{SED} [µg/kg]**	**Main entry route**
Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval] BBCH 31	D3 Ditch	0.001	0.005	Drift
	D4 Pond	0.215	0.897	Drainage
	D4 Stream	0.205	0.333	Drainage
	R1 Pond	0.009	0.032	Runoff
	R1 Stream	0.079	0.032	Runoff
	R3 Stream	0.057	0.025	Runoff

zRMS comments:

The application pattern presented in Table 8.9-1 assumed in simulations is in general in line with Central Zone GAP as presented in Table 8.1-1 with some minor corrections introduced by the zRMS for clarity.
It is noted that the Applicant performed additional simulations at Step 1-2 for period October-February for uses in leafy vegetable and vines, however this time of application does not cover the intended BBCH stages of these crops. Nevertheless, results obtained for this application timing represent worst case and may be thus used in the risk assessment.

The application windows presented in Table 8.9-2 are confirmed to be in line with AppDate 3.06. It is, however, noted that only early applications of ADM.00900.I.1.C to potatoes were considered although the product is intended to be used at BBCH 30-60 and it cannot be excluded that later applications would result with higher surface water exposure, which in turn may have impact on the outcome of the aquatic risk assessment. Therefore, additional modelling was performed by the zRMS with consideration of application of ADM.00900.I.1.C at the latest intended BBCH stages of potatoes. The application periods were selected using the AppDate tool version 3.01 because the most recent version of AppDate does not provide possibility for determination of the last possible application date. The application windows are presented in table below.

Application windows assumed in additional zRMS simulations for latest intended BBCH stage

Crop	Scenario	Application window up to BBCH 60
Use No. 6: Potatoes 1 x 12 g a.s./ha	D3	6-Jul – 5-Aug (187-217)
	D4	07-Aug – 06-Sep (219-249)
	R1	11-Jun-11-Jul (162-192)
	R3	16-May – 15-Jun (136-166)
Use No.7: Potatoes 2 × 12 g a.s./ha [7-day interval]	D3	29-Jun – 5-Aug (180-217)
	D4	31-Jul – 6-Sep (212-249)
	R1	04-Jun – 11-Jul (155-192)
	R3	09-May – 15-Jun (129-166)

Input parameters used for surface water modelling for chlorantraniliprole and its metabolites and presented in Tables 8.9-3 to 8.9-5 are in line with EU agreed endpoints reported in in EFSA Journal 2013;11(6):3143 and Addendum with confirmatory data for chlorantraniliprole (Vol. 3, Section 5 of April 2016).

Correct PUF of 0 was assumed at Step 3 for chlorantraniliprole in line with current recommendations.

Step 4 simulations were performed according to recommendations of the FOCUS work group on landscape and mitigation factors and were validated by the zRMS for convenience of the concerned Member States that consider FOCUS simulations at the national level.

The calculations performed at Steps 1-4 were independently validated by the zRMS in additional modelling using the same EU agreed input parameters. Discussion on obtained results is presented below, separately for each crop.

Leafy vegetable & maize

PEC_{SW} and PEC_{SED} calculated by the zRMS at Step 1-3 for chlorantraniliprole and its metabolites were in good agreement with values obtained by the Applicant and the surface water exposure reported in Tables 8.9-5 to 8.9-15 for leafy vegetable and in Tables 8.9-16 to 8.9-26 for maize may be used in the aquatic risk assessment
It is noted that for leafy vegetable scenario D5 relevant for the Central Zone is not defined. The Applicant has not proposed a surrogate crop, however none of the crops indicated by FOCUS seems to be a suitable crop for leafy vegetables due to leaves structure. Potentially sugar beets could be considered due to dense leaves, but scenario D5 is also not defined for this crop. As this issue is not harmonised at the Central Zone level and none of the crops with defined D5 scenario reflects the leafy vegetables structure, zRMS is of the opinion that the available modeling should be considered sufficient.

In order to mitigate the risk, Step 4 simulations were performed with assumption of 10 and 20 m spray drift buffer and 10 m and 20 m vegetative filter strips (for run-off scenarios) or 90% nozzle reduction. The assumed run-off reduction was in line with FOCUS Landscape and Mitigation recommendations (FOCUS, 2007). It is noted that additional simulations were performed using VFSmod for 2 and 5 m vegetated filter strip. This tool is acceptable in e.g. Poland but with a minimal vegetated filter strip of 5 m. PEC_{SW} and PEC_{SED} results calculated for 2 m vegetated filter strip presented in Table 8.9-15 were thus struck through as not relevant. Results for 5 m vegetated filter strip derived with VFSmod were retained as being potentially relevant for some cMS. Nevertheless, according to indications of the *Working document of the Central Zone in the authorization of plant protection products, Section 8, Environmental fate and behaviour* (Version 1 rev. 1, June 2018) VSFmod tool is not recommended for the Core Assessment and for this reason the concerned Member States must decide whether such approach will be acceptable for national authorisations.

Vines

PEC_{SW} and PEC_{SED} calculated by the zRMS at Step 1-3 for chlorantraniliprole and its metabolites were in good agreement with values obtained by the Applicant and the surface water exposure reported in Tables 8.9-27 to 8.9-37 and in Tables 8.9-47 to 8.9-49 (Step 3 and Step 4 only for D scenarios) may be used in the aquatic risk assessment.

It is noted that D scenarios relevant for the Central Zone (D3, D4 and D5) are not defined for vines. Since the formulation is intended to be applied to pome fruits, the Applicant decided to cover surface water exposure in D scenarios with results obtained for pome fruits, which are considered to be the relevant surrogate crop for vines. Although the application rate in pome fruits is slightly lower than in vines (31 vs. 36 g a.s./ha, respectively) and there is only partial overlap of the application timing (BBCH 70-87 in pome fruits and BBCH 57-83 in vines), the analysis of results in R scenarios demonstrated considerably higher PEC_{SW} derived for pome fruits due to much higher spray drift relevant for this crop (15.7% vs. 8% in pome fruits and vines, respectively). Taking this into account, in opinion of the zRMS, higher PEC_{SW} values following application to pome fruits may be also expected in D scenarios and the approach proposed by the Applicant is considered acceptable.

In order to mitigate the risk, Step 4 simulations were performed with assumption of 5 m spray drift buffer or 50% nozzle reduction in simulations performed specifically for vines and with assumption of 5, 10 and 20 m spray drift buffer and 50%, 75%, 90% nozzle reduction for pome fruits as a surrogate crop.

Pomefruits

PEC_{SW} and PEC_{SED} calculated by the zRMS at Step 1-3 for chlorantraniliprole and its metabolites were in good agreement with values obtained by the Applicant and the surface water exposure reported in Tables 8.9-38 to 8.9-49 following application of 31 g a.s./ha to pome fruits and in Tables 8.9-50 to 8.9-61 following application of 24 g a.s./ha to pome fruits may be used in the aquatic risk assessment.

In order to mitigate the risk, Step 4 simulations were performed with assumption of 5, 10 and 20 m spray drift buffer and 10 m and 20 m vegetative filter strips (for run-off scenarios) or 50%, 75%, 90% nozzle reduction. The assumed run-off reduction was in line with FOCUS Landscape and Mitigation recommendations (FOCUS, 2007).

Potato

PEC_{SW} and PEC_{SED} calculated by the zRMS at Step 1-3 for chlorantraniliprole and its metabolites were in good agreement with values obtained by the Applicant and the surface water exposure reported in Tables 8.9-62 to 8.9-82 for single and double application to potatoes may be used in the aquatic risk assessment.

In order to mitigate the risk for double application to potatoes, Step 4 simulations were performed with assumption of 20 m spray drift buffer, 20 m vegetative filter strips (for run-off scenarios) and 90% nozzle reduction. The assumed run-off reduction was in line with FOCUS Landscape and Mitigation recommendations (FOCUS, 2007).
As indicated above, the application windows assumed by the Applicant for Step 3 & 4 simulations do not cover surface water exposure for the later BBCH stages. Therefore additional modelling was performed by the zRMS for the last possible dates of application to potatoes with consideration of the application windows provided in the introductory part of this comment. The input parameters in additional modelling for chlorantraniliprole were the same as indicated in Table 8.9-3.
PEC_{SW} values derived for BBCH 60 are presented in tables below and are in general the same or slightly lower than surface water exposure calculated for the earlier BBCH stages.

FOCUS STEP 3 Max PEC_{SW} (µg/L) for <u>chlorantraniliprole</u> at later BBCH stages

Scenario FOCUS	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]	Max PEC_{SW} [µg/L]	Max PEC_{SED} [µg/kg]
STEP 3 BBCH up to 60	**Use No. 6: Potatoes 1 × 12 g a.s./ha**		**Use No. 7: Potatoes 2 × 12 g a.s./ha [7-day interval]**	
D3 Ditch	0.063	0.023	0.055	0.025
D4 Pond	0.085	0.369	0.194	0.817
D4 Stream	0.079	0.135	0.182	0.300
R1 Pond	0.026	0.091	0.056	0.183
R1 Stream	0.182	0.106	0.236	0.143
R3 Stream	0.224	0.068	0.239	0.114

Since Step 3 PEC_{SW} for single application to potatoes are all below the RAC of 0.5 µg/L, further calculation at Step 4 were not necessary. For double application the calculation at Step 4 was only required for D4 pond scenario.

FOCUS STEP 4 Max PEC_{SW} (µg/L) for <u>chlorantraniliprole</u> at later BBCH stages considering application of 2x 12 g a.s./ha

No-spray buffer strip (m)		**20 m**
Drift reduction nozzle (%)		**90**
STEP 4	**Global max PEC_{SW} [µg/L]**	**Global max PEC_{SED} [µg/kg]**
D4 Pond	0.192	0.808

Please note that additional surface water modelling may be required by the concerned Member States that do not accept simulations performed according to FOCUS recommendations.

8.9.2.1 PEC$_{sw/sed}$ of formulation

Surface water PEC values were calculated for the formulation based on a product density of 1090 g/L for the FOCUS waterbodies using the FOCUS drift calculator and are presented in the table below.

Table 8.9-83: PEC surface water for the formulated product ADM.00900.I.1.C (drift only)

Use	PEC$_{sw,drift}$ [µg/L]				
	Default distance (no buffer)	**3 m**	**5 m**	**10 m**	**20 m**
Use No. 1: Leafy vegetables, 1 × 152.6 g f.p./ha	1.40	0.479	0.291	0.148	0.075
Use No. 2: Maize, 1 × 152.6 g f.p./ha	1.09	0.470	0.291	0.148	0.075
Use No. 3: Vines (late), 1 × 196.2 g f.p./ha	4.13	0.605	0.374	0.190	0.096
Use No. 4: Pomefruits, 1 × 168.95 g f.p./ha	7.33	0.521	0.322	0.164	0.083
Use No. 5: Pomefruits, 1 × 130.8 g f.p./ha	5.68	0.403	0.249	0.127	0.064
Use No. 6: Potatoes, 1 × 65.4 g f.p./ha	0.465	0.202	0.125	0.063	0.032
Use No. 7: Potatoes, 2 × 65.4 g f.p./ha, [7-day interval]	0.408 (0.465)	0.175 (0.202)	0.105 (0.125)	0.052 (0.063)	0.026 (0.032)

* Values in brackets represent the PEC values following a single application.

zRMS comments:

The surface water exposure to formulation was validated by the zRMS using Spray Drift Calculator. Obtained results were in agreement with these reported in Tables 8.9-83.

8.10 Fate and behaviour in air (KCP 9.3, KCP 9.3.1)

The vapour pressure at 20 °C of the active substance chlorantraniliprole is < 10^{-5} Pa. Hence the active substance chlorantraniliprole is regarded as non-volatile. Therefore, exposure of adjacent surface waters and terrestrial ecosystems by the active substance chlorantraniliprole due to volatilization with subsequent deposition do not need to be considered. Furthermore, photochemical oxidative degradation in air was estimated to be 23 hours and therefore, significant long-range transport and accumulation in the stratosphere is unlikely (see FOCUS working group report: Pesticides in Air: Considerations for exposure assessment, SANCO/10553/2006, June 2008).

Table 8.10-1: Summary of atmospheric degradation and behaviour

Compound	Chlorantraniliprole
Direct photolysis in air	Not required since chlorantraniliprole is not volatile
Quantum yield of direct phototransformation	Not required since chlorantraniliprole is not volatile
Photochemical oxidative degradation in air	DT_{50} (h): 23 hours derived by the Atkinson model OH (24h) concentration = 0.5×10^6 hydroxyl radicals / cm^3
Volatilisation	Vapour pressure (Pa): At 20°C: 6.3×10^{-12} At 25°C : 2.1×10^{-11} Henry's Law Constant ($Pa.m^3/mol$): 3.2×10^{-9}

zRMS comments:

Information regarding fate and behaviour of chlorantraniliprole in the air presented in Table 8.10-1 is in line with EU agreed data reported in EFSA Journal 2013; 11(6):3143.

Taking into account the low vapour pressure (<10^{-5} Pa) and DT_{50} in air <2 days chlorantraniliprole is not expected to be subject to volatilisation and the long- or short-range transport and contamination of the atmosphere with chlorantraniliprole and its metabolites from the intended uses of ADM.00900.I.1.C is thus considered to be negligible.

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on

Data point	Author(s)	Year	**Title** **Company Report No.** **Source (where different from company)** **GLP or GEP status** **Published or not**	Vertebrate study Y/N	Owner*
KCP 9.2.4	Worthington, M.	2021a	Chlorantraniliprole – A leaching assessment for chlorantraniliprole and its metabolites IN-EQW78, IN-ECD73, IN-F6L99, IN-F9N04 and IN-GAZ70 using the FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4 groundwater models following spray application to various crops in Central Europe S21-06597-06/003 Eurofins Agroscience Services Regulatory GmbH non GLP Unpublished	N	ADM
KCP 9.2.5	Worthington, M.	2021b	Chlorantraniliprole – A European Environmental Fate Assessment for Chlorantraniliprole and its metabolites IN-EQW78, IN-ECD73, IN-F6L99, IN-F9N04, IN-GAZ70, IN-LBA22, IN-LBA23 and IN-LBA24 Using the FOCUS Surface Water Models at Steps 1 to 4 Following Spray Application to Various Crops in Central Europe S21-06597-06/002 Eurofins Agroscience Services Regulatory GmbH non GLP Unpublished	N	ADM

* ADM = proprietary of ADAMA Agricultural Solutions and all affiliates.

List of data submitted or referred to by the applicant and relied on, but already evaluated at EU peer review

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
As most of endpoints for flufenacet and its relevant metabolites was taken from the EU review, for the list of respective studies please refer to Volume 2 of the monograph.					

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
There were no data submitted by the Applicant and not relied on.					

List of data relied on not submitted by the applicant but necessary for evaluation

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
There were no data relied on and not submitted by the Applicant.					

Appendix 2 Detailed evaluation of the new Annex II studies

None.

Appendix 3 Additional information provided by the applicant (e.g. detailed modelling data)

None.