REGISTRATION REPORT

Part B

Section 8

Environmental Fate

Detailed summary of the risk assessment

Product code: F7B-39-30

Product name: Rinpode

Chemical active substance: Florpyrauxifen-benzyl 25 g/L

Central Zone

Zonal Rapporteur Member State: Poland/zRMS

CORE ASSESSMENT

Applicant: Corteva Agriscience

Submission date: March 2023

zRMS Assessment date: 27/11/2023

Following commenting round: 11/04/2024

References correction: 31/07/2024

Version history

When	What
March 2023	Submission to zRMS and concerned Member States
November 2023	zRMS assessment
April 2024	Following commenting round
July 2024	References correction

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8 Fate and behaviour in the environment (KCP 9)

This application was submitted by Corteva Agriscience in March 2023.
The application is for the first approval of the formulation F7B-39-30 (trademark: Rinpode) as new post-emergence herbicide developed by Corteva Agriscience. The formulation is an EC (emulsion concentrate) containing 25 g/L of florpyrauxifen-benzyl (19.870 g a.e./L) for use as an herbicide in sugar beets.
F7B-39-30 is submitted to Southern and Central zones with France and Poland acting as zRMS respectively. Concerned Member States are Spain, Italy, Portugal, Greece, Croatia in Southern zone and Belgium, The Netherlands, Luxembourg, Hungary, Germany, Austria, Romania, Czech Republic, Romania, Slovakia in Central zone.

Florpyrauxifen-benzyl (trademark: Rinskor® active) is a New Active Substance (NAS), developed by Corteva Agrisciences, approved in accordance with Regulation (EC) No 1107/2009 on July 3rd, 2019. Details of the approval Regulation, Commission Review Report and EFSA R.O. are provided in the below table:

Active Substance	*Approval Regulation*	*SANCO/SANTE Review Report*	*EFSA Scientific Report*
Florpyrauxifen-benzyl (trademark: Rinskor® active)	Commission Implementing Regulation (EU) 2019/1138 of 3 July 2019	SANTE/10658/2019 rev2 of 21 May 2019	EFSA Journal 2018;16(8):5378. doi: 10.2903/j.efsa.2018.5378.

The Regulation (EU) 2019/1138 for Florpyrauxifen-benzyl (trademark: Rinskor® active) provides specific provisions under Part B which need to be considered by the applicant in the preparation of their submission and by the MS prior to granting an authorisation: "*For the implementation of the uniform principles as referred to in Article 29(6) of Regulation (EC) No 1107/2009, the conclusions of the review report on 21 March 2019, and in particular Appendices I and II thereof, shall be taken into account. In this overall assessment Member States shall pay particular attention to: — the protection of aquatic and terrestrial non-target plants. Conditions of use shall include risk mitigation measures such as buffer zones and/or drift reduction nozzles, where appropriate*."
These concerns have been addressed within the current submission, where not otherwise stated.

Florpyrauxifen-benzyl (trademark: Rinskor® active) is a foliar post-emergence herbicide effective to control the most import weeds present in rice paddies; it is not yet authorized for sugar beets. Florpyrauxifen-benzyl is a member of the arylpicolinate family of chemistry, a new structural class of synthetic auxin herbicides, Group O (according to HRAC MOA classification). F7B-39-30 is active at low use rates in post-emergence applications against broadleaf weeds in sugar-beet.

F7B-39-30 is very similar to GF-3206 (trademark Loyant 25 Neo EC), with the addition of a food-grade dye, included in the composition at 0.0005% w/w. F7B-39-30 and GF-3206 are the same formulation type (emulsion concentrate) and contain equal amounts of active ingredient, antifoam, emulsifiers, solvents and adjuvant. The minimal difference in composition between F7B-39-30 and GF-3206 lead to toxicological and ecotoxicological properties that can be considered equivalent and in comparable performance on crop safety or efficacy. Based on comparability of both formulations, data generated with GF-3206 are used in support of the claim for F7B-39-30. GF-3206, which is authorized formulation since 2019 in all Southern Europe rice countries, is the representative formulation considered for the florpyrauxifen-benzyl (trademark: Rinskor® active) approval, so it was fully evaluated in the active substance European process.

Information on the detailed composition of F7B-39-30 or of the GF-3206 formulation used as read-across can be found in the CONFIDENTIAL dossier of this submission (draft Registration Report - Part C).

F7B-39-30 Rinpode critical and Country GAP within the Central Zone is given in Part B, Section 0.

General comment zRMS
The following data and information were provided by the applicant Corteva Agriscience and have been submitted as a dRR. This document provides the results of the assessment of the zRMS. All comments of the zRMS there are in the “greyboxes”.

8.1 Critical GAP and overall conclusions

Table 8.1-1: Critical use pattern of the formulated product F7B-39-30 concerning environmental fate

PPP (product name/code):	F7B-39-30	Formulation type:	EC [a, b]
Active substance 1:	Florpyrauxifen-benzyl (Rinskor® Active)	Conc. of as 1:	25.05 gai/L [c]
Safener:	No	Conc. of safener:	N/A
Synergist:	Not Applicable	Conc. of synergist:	N/A [c]
Applicant:	Corteva Agriscience	Professional use:	Yes
Zone(s):	Central	Non professional use:	No
Verified by MS:	No		
Field of use:	Herbicide		

1	2	3	4	5	6	7	8	9	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. g safener/synergist per ha** [f]	**Conclusion**
					Method / Kind	**Timing / Growth stage of crop & season**	**Max. number a) per use b) per crop/ season**	**Min. interval between applications (days)**	**g product / ha a) max. rate per appl. b) max. total rate per crop/season**	**g ai/ha a) max. rate per appl. b) max. total rate per crop/season**	**Water L/ha** **min / max**			Groundwater
Zonal uses (field or outdoor uses, certain types of protected crops)														
1	<u>Central Zone</u>: Poland, Belgium, Luxemburg, The Netherlands, Hungary, Germany, Austria, Czech Republic, Slovakia, Romania	<u>Sugar beet:</u> *Beta vulgaris* (BEAVA). Fodder beet (BEAVC)	F	*Chenopodium album* (CHEAL) *Aethusa cynapium (AETCY) Galium aparine (GALAP), Galisonga parviflora (GASPA) Abutilon teophrasti (ABUTH)* and other species	Overall, foliar spray	BBCH 10 to 19	a) 1 b) 1	-	a) 0.08 L pr/ha b) 0.08 L pr/ha	a) 2.0 b) 2.0	100-300	N/A	A maximum of 1 application at a dose range of 2.0 g ai/ha and per season.	A
2	<u>Central Zone</u>: Poland, Belgium, Luxemburg, The Netherlands, Hungary, Germany, Austria, Czech Republic, Slovakia, Romania	<u>Sugar beet:</u> *Beta vulgaris* (BEAVA). Fodder beet (BEAVC)	F	*Chenopodium album* (CHEAL) *Aethusa cynapium (AETCY) Galium aparine (GALAP), Galisonga parviflora (GASPA) Abutilon teophrasti (ABUTH)* and other species	Overall, foliar spray	BBCH 10 to 19	a) 2 b) 2	5-7 days	a) 0.04 L pr/ha b) 0.08 L pr/ha	a) 1.0 b) 2.0	100-300	N/A	A maximum of 2 applications at a dose of 1.0 gai/ha per application, with a total maximum dose of ~~0.~~ 2 g ai per ha and per season.	A
3	<u>Central Zone</u>: Poland, Belgium, Luxemburg, The Netherlands, Hungary, Germany, Austria, Czech Republic, Slovakia, Romania	<u>Sugar beet:</u> *Beta vulgaris* (BEAVA). Fodder beet (BEAVC)	F	*Chenopodium album* (CHEAL) *Aethusa cynapium (AETCY) Galium aparine (GALAP), Galisonga parviflora (GASPA) Abutilon teophrasti (ABUTH_* and other species	Overall, foliar spray	BBCH 10 to 19	a) 3 b) 3	5-7 days	a) 0.026 L pr/ha b) 0.08 L pr/ha	a) 0.66 b) 2.0	100-300	N/A	A maximum of 3 applications at a dose of 0.66 g ai/ha per application, with a total maximum dose of 2.0 g ai per ha and per season.	A

4	Central Zone: Poland, Belgium, Luxemburg, The Netherlands, Hungary, Germany, Austria, Czech Republic, Slovakia, Romania	Sugar beet: *Beta vulgaris* (BEAVA). Fodder beet (BEAVC)	F	*Chenopodium album* (CHEAL) *Aethusa cynapium (AETCY)* *Galium aparine (GALAP),* *Galisonga parviflora (GASPA)* *Abutilon teophrasti (ABUTH)* and other species	Overall, foliar spray	BBCH 10 to 19	a) 4 b) 4	5-7 days	a) 0.02 L pr/ha b) 0.08 L pr/ha	a) 0.5 b) 2.0	100-300	N/A	A maximum of 4 applications at a dose of 0.5 g ai/ha per application, with a total maximum dose of 2.0 g ai per ha and per season.	A
5	Central Zone: Poland, Belgium, Luxemburg, The Netherlands, Hungary, Germany, Austria, Czech Republic, Slovakia, Romania	Sugar beet: *Beta vulgaris* (BEAVA). Fodder beet (BEAVC)		*Chenopodium album* (CHEAL) *Aethusa cynapium (AETCY)* *Galium aparine (GALAP),* *Galisonga parviflora (GASPA)* *Abutilon teophrasti (ABUTH)* and other species	Overall, foliar spray	BBCH 10 to 19	a) 1 - 4 b) 1 - 4	5-7 days	a) 0.02 – 0.08 L pr/ha b) 0.02 - 0.08 L pr/ha	a) 0.5 – 2.0 b) 0.5 – 2.0	100-300	N/A	A maximum of 4 applications at a dose of 0.5 – 2.0 g ai/ha per application, with a total maximum dose of 2.0 g ai per ha and per season.	**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

Remarks table heading:

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

Remarks columns:

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

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 florpyrauxifen-benzyl (Rinskor® Active) concerning environmental fate

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Crop and/or situation (crop destination /purpose of crop)	**Member state(s)**	**Product name**	**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:**
					Method/kind	Timing/growth stage of crop & season	Max. number a) per use b) per crop/season	Min. interval between appn. (days)	L product/ha min-max	kg a.s./ha min-max	Water L/ha min/max		
Rice	Greece, Italy, Portugal, Spain	GF-3206	F	*Ammania coccinea* (AMMCO), *Heterantera reniformis* (HETRE)	Overall, Broadcast foliar spray	BBCH 12 to 45 (May 1 - July 31)	1	n/a	0.4 - 0.6	0.01 - 0.015	150 - 400	60	Dose that allows broadleaf control of AMMCO and HETRE only (Not intended for labelling purposes).
Rice	Greece, Italy, Portugal, Spain	GF-3206	F	*Ammania coccinea* (AMMCO), *Heterantera reniformis* (HETRE), *Cyperus difformis* (CYPDI), *Echinochloa crus-galli* (ECHCG), *Echinochloa* spp. (ECHSS)	Overall, Broadcast foliar spray	BBCH 12 to 45 (May 1 - July 31)	2	8-10	1.2	0.030	150 - 400	60	Minimum Effective Dose for Echinochloa spp/Sedges present within the paddy. In the weeding programs, the double applications could be with GF-3206 and other products containing XDE-848. Only if the GF-3206 is applied twice (straight or in programs with other products containing XDE-848) after the first application the water must to be kept at least 7 days in the paddy.

* 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

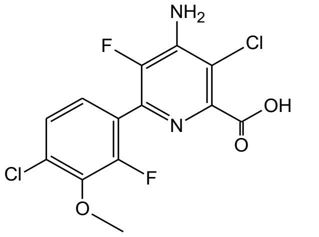
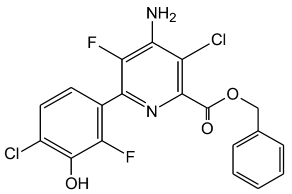
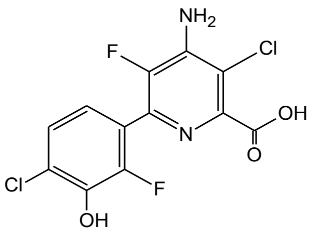
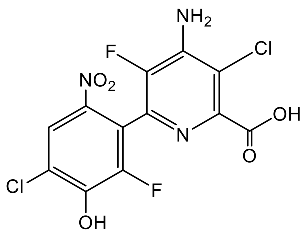
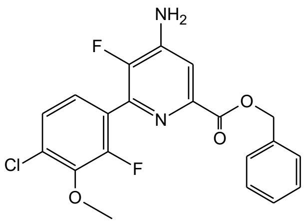
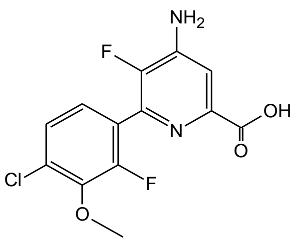
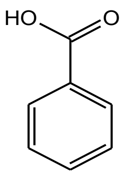
General comment zRMS

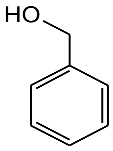
Rinpode (product code: F7B-39-30) is an emulsion concentrate (EC) containing 25 g/L of florpyrauxifen-benzyl for use as an herbicide on sugar beet.

Florpyrauxifen-benzyl (benzyl 4-amino-3- chloro-6-(4-chloro-2- fluoro-3- methoxyphenyl)-5- fluoropyridine-2- carboxylate); CAS No 1390661-72-9) is recognised as approved for use in plant protection products under Regulation (EC) No 1107/2009 in Annex of Commission Implementing Regulation (EU) No 540/2011 of 25 May 2011 with the expiration of approval on 24 July 2029.

8.2 Metabolites considered in the assessment

Table 8.2-1: Metabolites of florpyrauxifen-benzyl triggered for exposure assessment

Metabolite	Molar mass (g/mol)	Chemical structure	Maximum observed occurrence (% AR) in compartments	Exposure assessment required due to
X11438848	349.1		Aerobic soil: 62% Water/sediment: 45%	PECgw/soil/sw/sed: GAP not covered by EU assessment
X12300837	425.2		Water/sediment: 23%	PECsw/sed: GAP not covered by EU assessment
X11966341	335.1		Aerobic soil: 8% Water/sediment: 78%	PECgw/soil/sw/sed: GAP not covered by EU assessment
X12483137	380.1		Aerobic soil: 11%	PECsoil: GAP not covered by EU assessment
X12131932	404.8		Aqueous photolysis (sterile buffer): 30.8%	PECsw/sed: GAP not covered by EU assessment
X12393505	314.7		Aqueous photolysis (sterile buffer): 10.4%	PECsw/sed: GAP not covered by EU assessment
X194973	122.1		Water/sediment system: 21.3%	PECsw/sed: GAP not covered by EU assessment

Metabolite	Molar mass (g/mol)	Chemical structure	Maximum observed occurrence (% AR) in compartments	Exposure assessment required due to
X195023	108.1		Aqueous photolysis (natural water): 81.5%	PECsw/sed: GAP not covered by EU assessment

8.3 Rate of degradation in soil (KCP 9.1.1)

Studies on the laboratory degradation rate in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. A summary of the data is given in the subsections below.

Evaluation by zRMS	Rate of degradation in soil (KCP 9.1.1)
Comments	No new data. Information in Section 8.3 is available in dossier of active substance florpyrauxifen-benzyl and can be extrapolated to formulation. Therefore no studies have been conducted. EU agreed data were correctly reported.

8.3.1 Aerobic degradation in soil (KCP 9.1.1.1)

8.3.1.1 Florpyrauxifen-benzyl and its metabolites

Tables in this section show both triggering (DT_{50} and DT_{90} given by kinetic model described in the table) and modelling (DT_{50} either SFO or "SFO-like" from FOMC DT_{90}/3.32 or DFOP k2) endpoints. Kinetic fitting details were included in the EFSA DAR Section B.8 Appendix 1.

Note on modelling of the metabolic pathway in soil.

The FOCUS models for PECgw and PECsed do not currently implement bi-phasic kinetics in their representations of soil degradation pathways (i.e., only SFO kinetics are supported). As can be seen below, the parent florpyrauxifen-benzyl exhibits a biphasic degradation pattern and per FOCUS kinetics guidance, the slow phase DFOP (or FOMC DT_{90}/3.32 in one soil) are chosen to conservatively represent the degradation for the parent alone in the models. However, if these slower rates are selected to represent the first degradation step in the pathway, the production of the downstream metabolites will be drastically underestimated. Thus, the overall biphasic (geomean of trigger endpoints i.e. 10.3 days) was chosen when the metabolites were modelled, which more realistically (and conservatively) represented the formation of the metabolites. For these pathway models, the PEC results for the parent are not used – for the parent itself the kinetics from the biphasic slow phase are used.

Triggering and modelling endpoints

Table 8.3-1: Summary of aerobic degradation rates for florpyrauxifen-benzyl - laboratory studies

Soil name	USDA Texture Class	pH[a]	T (°C)/ MWHC (%)	Triggering (20°C/pF2)				Evaluated at EU level y/n/ Reference	Modelling (20°C/pF2)[b]		
				DT_{50} (d)	DT_{90} (d)	Chi^2 (%)	Kinetic model		DT_{50} (d)	Chi^2 (%)	Kinetic model
Yolo	Loam	7.2	20 / 50% MHC	33.8	791	1.27	DFOP	EFSA, 2018 Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, Degradation of XR-848 Benzyl Ester in Four Soils under Aerobic Conditions, DAS Study ID 121106	348	1.27	DFOP (slow phase)
RefSol 03-G	Loam	6.2	20 / 50% MHC	12	249	1.83	DFOP		129	1.83	DFOP (slow phase)
Site E1	Silt loam	5.9	20 / 50% MHC	11	148	1.83	DFOP		116	1.43	DFOP (slow phase)
Site I2	Loamy sand	7.4	20 / 50% MHC	2.5	30	1.43	DFOP		8.9	7.08	FOMC (DT90/3.32)
Geometric mean (n=4)				10.3	Geometric mean (n=4)				82.5		
pH-dependency: y/n				no							

[a] Measured in 1:1 soil:water ratio

[b] Normalisation not necessary since soils were incubated at 20 °C and Walker equation coefficient of 1 (soils were at moisture level >pF2)

Table 8.3-2: Summary of aerobic degradation rates for metabolite X11438848 - laboratory studies

Soil name	USDA Texture Class	pH[a]	T (°C)/ MWHC (%)	Triggering (20°C/pF2)				f.f. k_f/k_{dp}	Evaluated at EU level y/n/ Reference	Modelling (20°C/pF2)[b]		
				DT_{50} (d)	DT_{90} (d)	Chi^2 (%)	Kinetic model			DT_{50} (d)	Chi^2 (%)	Kinetic model
Yolo	Loam	7.2	20 / 50% MHC	47	156	9.43	Linked DFOP-SFO	1.0	EFSA, 2018 Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, Degradation of XR-848 Benzyl Ester in Four Soils under Aerobic Conditions, DAS Study ID 121106	47	9.43	Linked DFOP-SFO
RefSol 03-G	Loam	6.2	20 / 50% MHC	27.7	92	8.97	Linked DFOP-SFO	0.76		28	8.97	Linked DFOP-SFO
Site E1	Silt loam	5.9	20 / 50% MHC	53.6	178	13.9	Linked DFOP-SFO	0.63		54	13.9	Linked DFOP-SFO
Site I2	Loamy sand	7.4	20 / 50% MHC	29.7	99	11.9	Linked FOMC-SFO	0.95		30	11.9	Linked FOMC-SFO

Soil name	**USDA Texture Class**	**pH[a]**	**T (°C)/ MWHC (%)**	**Triggering (20°C/pF2)**				**f.f. k_f/k_{dp}**	**Evaluated at EU level y/n/ Reference**	**Modelling (20°C/pF2)[b]**		
				DT_{50} (d)	**DT_{90} (d)**	**Chi^2 (%)**	**Kinetic model**			**DT_{50} (d)**	**Chi^2 (%)**	**Kinetic model**
							Arithmetic mean (n=4)	0.835	Geometric mean (n=4)	38.2		
			pH-dependency: y/n	no								

[a] Measured in 1:1 soil:water ratio

[b] Normalisation not necessary since soils were incubated at 20 °C and Walker equation coefficient of 1 (soils were at moisture level >pF2)

Table 8.3-3: Summary of aerobic degradation rates for metabolite X11966341 - laboratory studies

Soil name	USDA Texture Class	pH[a]	T (°C)/ MWHC (%)	Triggering (20°C/pF2)				f.f. k_f/k_{dp}	Evaluated at EU level y/n/ Reference	Modelling (20°C/pF2/10kPa)[b]		
				DT_{50} (d)	DT_{90} (d)	Chi^2 (%)	Kinetic model			DT_{50} (d)	Chi^2 (%)	Kinetic model
Yolo	Loam	7.2	20 / 50% MHC	NA[c]	-			-	EFSA, 2018 Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, Degradation of XR-848 Benzyl Ester in Four Soils under Aerobic Conditions, DAS Study ID 121106	-	-	-
RefSol 03-G	Loam	6.2	20 / 50% MHC	6.5	22	20	Linked DFOP-SFO-SFO	1.0		6.5	20	Linked DFOP-SFO-SFO
Site E1	Silt loam	5.9	20 / 50% MHC	6.6	22	22.5	Linked DFOP-SFO-SFO	1.0		6.6	22.5	Linked DFOP-SFO-SFO
Site I2	Loamy sand	7.4	20 / 50% MHC	8	26.7	6.2	Linked FOMC-SFO-SFO	0.34		8	6.2	Linked FOMC-SFO-SFO
arithmetic mean (n=3)								0.78	Geometric mean (n=3)	7.0		
pH-dependency: y/n				no								

a Measured in 1:1 soil:water ratio

b Normalisation not necessary since soils were incubated at 20 °C and Walker equation coefficient of 1 (soils were at moisture level >pF2)

c Insufficient rise and decline data to calculate a degradation rate

Table 8.3-4: Summary of aerobic degradation rates for metabolite X12483137 - laboratory studies

Soil name	USDA Texture Class	pH[a]	T (°C)/ MWHC (%)	Triggering (20°C/pF2)				f.f. k_f/k_{dp}	Evaluated at EU level y/n/ Reference	Modelling (20°C/pF2/10kPa)[b]		
				DT_{50} (d)	DT_{90} (d)	Chi^2 (%)	Kinetic model			DT_{50} (d)	Chi^2 (%)	Kinetic model
Site E1	Silt loam	5.6	20 / 50% MHC	413	1370	3.31	SFO (top-down)	-	EFSA, 2018 Wang, H., 2016, Degradation of XDE-848 Benzyl Ester Metabolite, X12483137, in Four Soils under Aerobic Conditions, DAS Study	413	3.31	SFO (top-down)
Site I2	Sandy loam	7.9	20 / 50% MHC	275	913	5.30	SFO (top-down)	-		275	5.30	SFO (top-down)
RefSol 03-G	Loam	6.1	20 / 50% MHC	478	1590	5.26	SFO (top-down)	-		478	5.26	SFO (top-down)
Hanford	Loam	7.0	20 / 50% MHC	146	484	6.88	SFO (top-down)	-		146	6.88	SFO (top-down)

Soil name	USDA Texture Class	pH[a]	T (°C)/ MWHC (%)	Triggering (20°C/pF2)				f.f. k_f/k_{dp}	Evaluated at EU level y/n/ Reference	Modelling (20°C/pF2/10kPa)[b]		
				DT_{50} (d)	DT_{90} (d)	Chi^2 (%)	Kinetic model			DT_{50} (d)	Chi^2 (%)	Kinetic model
									ID 150781			
Geometric mean (n=4)								1 assumed		298.4		
pH-dependency: y/n				no								

[a] Measured in 1:1 soil:water ratio

[b] Normalisation not necessary since soils were incubated at 20 °C and Walker equation coefficient of 1 (soils were at moisture level >pF2)

8.3.2 Anaerobic degradation in soil (KCP 9.1.1.1)

Degradation rates in anaerobic soil have been calculated for florpyrauxifen-benzyl and its metabolites, where appropriate. However, these are not required for the risk assessment and no further information is provided here.

8.3.3 Field studies (KCP 9.1.1.2)

A terrestrial field dissipation study was executed for florpyrauxifen-benzyl on five EU terrestrial field sites. The study has not yet been evaluated at EU level, so the results are not used in the risk assessment

8.3.4 Soil accumulation testing (KCP 9.1.1.2.2)

No data is supplied.

8.4 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. A summary of the data is given in the subsections below.

Evaluation by zRMS	Mobility in soil (KCP 9.1.2)
Comments	No new data. Information in Section 8.4 is available in dossier of active substance florpyrauxifen-benzyl and can be extrapolated to formulation. Therefore no studies have been conducted. EU agreed data were correctly reported.

8.4.1 Florpyrauxifen-benzyl and its metabolites

Table 8.4-1: Summary of soil adsorption for florpyrauxifen-benzyl

Soil name	Soil type[a]	pH[b]	OC (%)	Kf (mL/g)	Kfoc (mL/g)	1/n	Evaluated at EU level Reference
Yolo	Clay loam	7.3	0.8	130	16312	0.90	y, EFSA, 2018 Wang, H., 2015, Batch Equilibrium Adsorption/Desorption of XDE-848 Benzyl Ester, DAS study ID 130638
RefSol 03-G	Loam	6.1	4.9	855	17446	0.95	
Site E1 – Brierlow	Silt loam	5.6	4.4	1474	33500	1.01	
Site I2 – Longwoods Quarry	Sandy loam	7.4	2.2	337	15305	0.95	
Casalino	Sandy loam	4.2	1.3	378	29064	0.94	
Arithmetic mean (n=5)						0.95	
Geometric mean (n=5)					21158.6		
pH-dependency y/n					No		

[a] USDA Texture Class
[b] Measured in 0.01M calcium chloride solution

Table 8.4-2: Summary of soil adsorption for X11438848

Soil name	Soil type[a]	pH[b]	OC (%)	Kf (mL/g)	Kfoc (mL/g)	1/n	Evaluated on EU level Reference
Yolo	Clay loam	7.3	0.8	0.493	61.6	0.82	y, EFSA, 2018 Ding, Y., 2015, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolites, X11438848, X11966341 and X12300837, DAS study ID 130567
RefSol 03-G	Loam	6.1	4.9	1.484	30.3	0.88	
Site E1	Silt loam	5.6	4.4	1.728	39.3	0.87	
RefSol 01-A	Loamy sand	4.6	1.1	0.831	75.6	0.86	
Site K	Loam	7.2	3.3	1.831	55.5	0.89	
San Pietro paddy soil	Loam	4.9	1.6	2.375	148.4	0.85	
Casalino	Sandy loam	4.2	1.3	2.541	195.5	0.85	
Site I2	Sandy loam	7.4	2.2	0.673	30.6	0.89	
Centerville paddy soil	Clay loam	7.5	0.5	0.260	51.9	0.88	
Bernard-Edna paddy soil	Sandy clay loam	6.7	0.4	0.452	113.1	0.86	
Site Fr3 paddy soil	Sandy loam	7.3	1.9	0.986	51.9	0.86	
Site Sp4 paddy soil	Silty clay	7.2	3.5	2.508	71.7	0.86	
Arithmetic mean (n=12)						0.86	
Geometric mean (n=12)					65.3		
pH-dependency y/n					Yes, increased sorption in acidic soil		

[a] USDA Texture Class

[b] Measured in 0.01M calcium chloride solution

Table 8.4-3: Summary of soil adsorption for X12300837

Soil name	Soil type[a]	pH[b]	OC (%)	Kf (mL/g)	Kfoc (mL/g)	1/n	Evaluated on EU level Reference
Yolo	Clay loam	7.3	0.8	10.51	1314	0.84	EFSA, 2018 Ding, Y., 2015, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolites, X11438848, X11966341 and X12300837, DAS study ID 130567
RefSol 03-G	Loam	6.1	4.9	286.16	5840	0.90	
Site E1	Silt loam	5.6	4.4	226.54	5149	0.87	
RefSol 01-A	Loamy sand	4.6	1.1	67.89	6172	0.86	
Site K	Loam	7.2	3.3	25.70	779	0.90	
San Pietro paddy soil	Loam	4.9	1.6	272.80	17050	0.84	
Casalino	Sandy loam	4.2	1.3	160.58	12353	0.87	
Site I2	Sandy loam	7.4	2.2	30.02	1365	0.90	
Centerville paddy soil	Clay loam	7.5	0.5	4.23	845	0.78	
Bernard-Edna paddy soil	Sandy clay loam	6.7	0.4	10.21	2553	0.74	
Site Fr3 paddy soil	Sandy loam	7.3	1.9	19.41	1022	0.88	
Site Sp4 paddy soil	Silty clay	7.2	3.5	49.17	1405	0.86	
Arithmetic mean (n=12)						0.85	
Geometric mean (n=12)					2727.1		
pH-dependency y/n					Yes, increased sorption in acidic soil		

[a] USDA Texture Class
[b] Measured in 0.01M calcium chloride solution

Table 8.4-4: Summary of soil adsorption for X11966341

Soil name	Soil type[a]	pH[b]	OC (%)	Kf (mL/g)	Kfoc (mL/g)	1/n	Evaluated on EU level Reference
Yolo	Clay loam	7.3	0.8	0.202	25.3	0.76	EFSA, 2018 Ding, Y., 2015, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolites, X11438848, X11966341 and X12300837, DAS study ID 130567
RefSol 03-G	Loam	6.1	4.9	1.400	28.6	0.90	
Site E1	Silt loam	5.6	4.4	2.102	47.8	0.89	
RefSol 01-A	Loamy sand	4.6	1.1	1.197	108.8	0.88	
Site K	Loam	7.2	3.3	0.502	15.2	0.91	
San Pietro paddy soil	Loam	4.9	1.6	3.625	226.5	0.86	
Casalino	Sandy loam	4.2	1.3	3.205	246.5	0.87	
Site I2	Sandy loam	7.4	2.2	0.472	21.5	0.92	
Centerville paddy soil	Clay loam	7.5	0.5	0.153	30.6	0.87	
Bernard-Edna paddy soil	Sandy clay loam	6.7	0.4	0.485	121.4	0.87	
Site Fr3 paddy soil	Sandy loam	7.3	1.9	2.959	155.7	0.77	
Site Sp4 paddy soil	Silty clay	7.2	3.5	2.434	69.5	0.86	
Arithmetic mean (n=12)						0.86	
Geometric mean (n=12)					61.2		
pH-dependency y/n					Yes, increased sorption in acidic soil		

[a] USDA Texture Class
[b] Measured in 0.01M calcium chloride solution

Table 8.4-5: Summary of soil adsorption for X12483137

Soil name	Soil type[a]	pH[b]	OC (%)	Kf (mL/g)	Kfoc (mL/g)	1/n	Evaluated on EU level Reference
Site EI	Silt loam	5.6	4.4	0.650	14.8	0.859	EFSA, 2018 Lynn, K., 2016, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolite, X12483137, DAS study ID 151038
RefSol 01-A	Loam	6.0	3.8	0.328	8.62	0.825	
Site I2	Loamy sand	7.4	1.9	0.175	9.20	0.859	
Hanford	Loam	6.5	0.7	0.105	15.0	0.778	
Arithmetic mean (n=4)						0.82	
Geometric mean (n=4)					11.5		
pH-dependency y/n					No		

[a] USDA Texture Class
[b] Measured in 0.01M calcium chloride solution

8.4.2 Column leaching (KCP 9.1.2.1)

Column leaching studies are not relevant since reliable sorption data are available.

8.4.3 Lysimeter studies (KCP 9.1.2.2)

Lysimeter studies have not been carried out.

8.4.4 Field leaching studies (KCP 9.1.2.3)

Field leaching studies have not been carried out.

8.5 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. A summary of the data is given in the subsections below.

Evaluation by zRMS	Degradation in the water/sediment systems (KCP 9.2)
Comments	No new data. Information in Section 8.5 is available in dossier of active substance florpyrauxifen-benzyl and can be extrapolated to the formulation. Therefore no studies have been conducted.

8.5.1 Florpyrauxifen-benzyl and its metabolites

A one compartment model was followed for the kinetic analysis. As such, the tables in this section show the whole system DT_{50} and DT_{90} values. Tables in this section also show both triggering (DT_{50} and DT_{90} given by kinetic model described in the table) and modelling (DT_{50} either SFO or "SFO-like" from FOMC DT_{90}/3.32 or DFOP k2) endpoints.

Triggering and modelling endpoints

Table 8.5-1: Summary of water/sediment degradation rates for florpyrauxifen-benzyl

Water/ sediment system (USDA Texture)	pH water phase	pH sed [a]	T (°C)	DT_{50} /DT_{90} whole sys. (d)	Chi^2 (%)	DT_{50} /DT_{90} water (d)	Chi^2 (%)	DT_{50} /DT_{90} sed (d)	Chi^2 (%)	Kinetic model	Evaluated at EU level
French Loam	7.8	7.1	20	4.0 / 13	6.6	2.7 / 9	10.8	8.7 / 29	18.4	System: SFO Water: SFO Sediment: Top-down SFO	EFSA, 2018 Guenthenspberger, K. A., Balcer, J. L., 2015, Aerobic Aquatic Degradation of XR-848 Benzyl Ester in 2 Sediment and Pond Water Systems, DAS Study ID 121001
English Loamy sand	6.6	6.2	20	6.1 / 20.4	7.0	4.1 / 13.7	7.2	4.0 / 13.3	29.4	System: SFO Water: SFO Sediment: Top-down SFO	
Geometric mean at 20 °C[b]				4.9		3.3		5.9			

[a] Measured in 1:1 soil:water ratio
[b] Normalisation not necessary since test systems were incubated at 20 °C.

Table 8.5-2: Summary of water/sediment degradation rates for metabolite florpyrauxifen (X11438848)

Water/ sediment system (USDA Texture)	pH water phase	pH sed [a]	T (°C)	DT_{50} /DT_{90} whole sys. (d)	Chi^2 (%)	DT_{50} /DT_{90} water (d)	Chi^2 (%)	DT_{50} /DT_{90} sed (d)	Chi^2 (%)	Kinetic model	Evaluated at EU level
French Loam	7.8	7.1	20	4.1 / 13.7	13.5	4.3 / 14.1	9.9	NA	-	System: Top-down SFO Water: Top-down SFO Sediment: NA	EFSA, 2018 Guenthenspberger, K. A., Balcer, J. L., 2015, Aerobic Aquatic Degradation of XR-848 Benzyl Ester in 2 Sediment and Pond Water Systems, DAS Study ID 121001
English Loamy sand	6.6	6.2	20	8.2 / 27.3	13.0	6.8 / 22.6	12.5	NA	-	System: Top-down SFO Water: Top-down SFO Sediment: NA	
Geometric mean at 20 °C[b]				5.8		5.4		NA			

[a] Measured in 1:1 soil:water ratio
[b] Normalisation not necessary since test systems were incubated at 20 °C.

Table 8.5-3: Summary of water/sediment degradation rates for metabolite X12300837

Water/ sediment system (USDA Texture)	pH water phase	pH sed [a]	T (°C)	DT_{50} /DT_{90} whole sys. (d)	Chi^2 (%)	DT_{50} /DT_{90} water (d)	Chi^2 (%)	DT_{50} /DT_{90} sed (d)	Chi^2 (%)	Kinetic model	Evaluated at EU level
French Loam	7.8	7.1	20	5.6 / 18.7	2.3	5.1 / 16.8	4.7	5.7 / 19.1	3.7	System: Top-down SFO Water: Top-down SFO Sediment: Top-down SFO	EFSA, 2018 Guenthenspberger, K. A., Balcer, J. L., 2015, Aerobic Aquatic Degradation of XR-848 Benzyl Ester in 2 Sediment and Pond Water Systems, DAS Study ID 121001
English Loamy sand	6.6	6.2	20	13.9 / 46.2	14.1	NA	-	13.0 / 43.5	8.4	System: Top-down SFO Water: NA Sediment: Top-down SFO	
Geometric mean at 20 °C[b]				8.8		5.1		8.6			

[a] Measured in 1:1 soil:water ratio
[b] Normalisation not necessary since test systems were incubated at 20 °C.

Table 8.5-4: Summary of water/sediment degradation rates for metabolite X11966341

Water/ sediment system (USDA Texture)	pH water phase	pH sed [a]	T (°C)	DT_{50} /DT_{90} whole sys. (d)	Chi^2 (%)	DT_{50} /DT_{90} water (d)	Chi^2 (%)	DT_{50} /DT_{90} sed (d)	Chi^2 (%)	Kinetic model	Evaluated at EU level
French Loam	7.8	7.1	20	121 / 403	2.1	88.2 / 293	3.5	83.9 / 279	1.8	System: Top-down SFO Water: Top-down SFO Sediment: Top-down SFO	EFSA, 2018 Guenthenspberger , K. A., Balcer, J. L., 2015, Aerobic Aquatic Degradation of XR-848 Benzyl Ester in 2 Sediment and Pond Water Systems, DAS Study ID 121001
English Loamy sand	6.6	6.2	20	52.5 / 174	16.8	37.3 / 124	20.6	36.5 / 121	11.4	System: Top-down SFO Water: Top-down SFO Sediment: Top-down SFO	
Geometric mean at 20 °C[b]				79.7		57.4		55.3			

[a] Measured in 1:1 soil:water ratio
[b] Normalisation not necessary since test systems were incubated at 20 °C.

Table 8.5-5: Summary of water/sediment degradation rates for metabolite X194973

Water/ sediment system (USDA Texture)	pH water phase	pH sed [a]	T (°C)	DT_{50} /DT_{90} whole sys. (d)	Chi^2 (%)	DT_{50} /DT_{90} water (d)	Chi^2 (%)	DT_{50} /DT_{90} sed (d)	Chi^2 (%)	Kinetic model	Evaluated at EU level
French Loam	7.8	7.1	20	2.6 / 8.7	3.8	NA	-	NA	-	System: Top-down SFO Water: NA Sediment: NA	EFSA, 2018 Guenthenspberger, K. A., Balcer, J. L., 2015, Aerobic Aquatic Degradation of XR-848 Benzyl Ester in 2 Sediment and Pond Water Systems, DAS Study ID 121001
English Loamy sand	6.6	6.2	20	2.3 / 7.5	5.5	NA	-	NA	-	System: Top-down SFO Water: NA Sediment: NA	
Geometric mean at 20 °C[b]				2.4		-		-			

[a] Measured in 1:1 soil:water ratio
[b] Normalisation not necessary since test systems were incubated at 20 °C.

8.6 Predicted environmental concentrations in soil (PECsoil) (KCP 9.1.3)

PECsoil values were calculated for florpyrauxifen-benzyl and major (>5% AR) soil metabolites X11438848, X11966341, and X12483137.

PECsoil values also were calculated for the formulation F7B-39-30.

8.6.1 Justification for new endpoints

EU agreed endpoints were used for the PECsoil calculations.

8.6.2 Active substance(s), metabolite(s) and formulation

The initial PECsoil (mg/kg) after application was calculated as follows:

$$\text{Initial PECsoil} = \frac{\text{A x 1000}}{100 \times d \times \rho}$$

where: A = effective appn. rate after adjusting for crop interception (g as/ha)
d = depth of soil layer (5 cm)
ρ = soil bulk density (1.5 g/mL)

The actual PECsoil (mg/kg) at time t (days) after application was calculated as follows:

$$\text{Actual PECsoil,t} = \text{Initial PECsoil} \times e^{-kt}$$

where: k = first-order degradation rate constant (d^{-1}) = $\ln2/DT_{50}$

The time-weighted average (TWA) PECsoil (mg/kg) at time t (days) after application was calculated as follows:

$$\text{TWA PECsoil,t} = \frac{\text{Initial PECsoil} \times (1 - e^{-kt})}{k \times t}$$

Table 8.6-1: Input parameters related to application for PECsoil calculations

<table>
<tr><th>Use no.</th><th colspan="2">1, 5</th><th colspan="2">2, 5</th><th colspan="2">3, 5</th><th colspan="2">4, 5</th></tr>
<tr><td>Crop</td><td colspan="2">Sugar beet</td><td colspan="2">Sugar beet</td><td colspan="2">Sugar beet</td><td colspan="2">Sugar beet</td></tr>
<tr><td>Application rate (L FP/ha)</td><td colspan="2">0.08</td><td colspan="2">0.04</td><td colspan="2">0.026</td><td colspan="2">0.02</td></tr>
<tr><td>Application rate (g as/ha)</td><td colspan="2">Florpyrauxifen-benzyl: 2</td><td colspan="2">Florpyrauxifen-benzyl: 1</td><td colspan="2">Florpyrauxifen-benzyl: 0.66</td><td colspan="2">Florpyrauxifen-benzyl: 0.5</td></tr>
<tr><td>Max. number of applications</td><td colspan="2">1</td><td colspan="2">2</td><td colspan="2">3</td><td colspan="2">4</td></tr>
<tr><td>21159 (%)</td><td>Appn. 1</td><td>20% (minimal BBCH 10)</td><td>Appn. 1, 2</td><td>20% (minimal BBCH 10)</td><td>Appn. 1, 2, 3</td><td>20% (minimal BBCH 10)</td><td>Appn.1, 2, 3, 4</td><td>20% (minimal BBCH 10)</td></tr>
<tr><td rowspan="2">Effective application rate (g as/ha)</td><td rowspan="2">Florpyrauxifen-benzyl</td><td>Appn. 1</td><td rowspan="2">Florpyrauxifen-benzyl</td><td>Appn 2</td><td rowspan="2">Florpyrauxifen-benzyl 2,4-D</td><td>Appn. 3</td><td rowspan="2">Florpyrauxifen-benzyl</td><td>Appn. 4</td></tr>
<tr><td>1 x 1.6</td><td>2 x 0.8</td><td>3 x 0.53</td><td>4 x 0.4</td></tr>
<tr><td>Min.</td><td colspan="2">NA</td><td colspan="2">5</td><td colspan="2">5</td><td colspan="2">5</td></tr>
</table>

application interval (d)				
Frequency of application	Annual			
Depth of soil layer (relevant for plateau concentration) (cm)	~~5 (no tillage)~~ 20cm			

Table 8.6-2: Input parameter for active substance(s) and major metabolite(s) for PECsoil

Compound	Molar mass (g/mol)	Maximum occurrence (% AR)	Maximum DT_{50} (20°C/pF2) (d)	Value in accordance to EU endpoint y/n/ Reference
Florpyrauxifen-benzyl	439.2	-	348	Y, EFSA, 2018 Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, Study ID 121106
X11438848	349.1	62	54	
X11966341	335.1	8	8	
X12483137	~~335.1~~ 380.1	11	478	

8.6.2.1 Florpyrauxifen-benzyl and its metabolites

Table 8.6-3: PECsoil for Florpyrauxifen-benzyl on sugar beet, Use No. 1, 5

PEC soil (mg/kg)		Use No. 1, 5	
		1 × 1.60 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		~~0.0022~~ 0.0021	-
Short Term	1 d	0.0021	0.0021
	2 d	0.0021	0.0021
	4 d	0.002~~01~~	0.0021
Long Term	7 d	0.002~~0~~1	0.0021
	14 d	0.00~~18~~21	0.002~~01~~
	21 d	0.0016	0.0019
	28 d	0.0015	0.0018
	50 d	0.0011	0.0016
	100 d	0.0006	0.0012
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} + $PEC_{soil\ plateau}$)		~~0.0022~~ 0.0021	-

Table 8.6-4: PECsoil for X11438848 on sugar beet, Use No. 1, 5

PEC soil (mg/kg)		Use No. 1, 5	
		1 × 0.79 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0011	-
Short Term	1 d	0.0010	0.0011
	2 d	0.0010	0.0010
	4 d	0.0010	0.0010
Long Term	7 d	0.0010	0.0010
	14 d	0.0009	0.0010
	21 d	0.0008	0.0009
	28 d	0.0007	0.0009
	50 d	0.0006	0.0008
	100 d	0.0003	0.0006
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0011	-

Table 8.6-5: PECsoil for X11966341 on sugar beet, Use No. 1, 5

PEC soil (mg/kg)		Use No. 1, 5	
		1 × 0.10 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0001	-
Short Term	1 d	0.0001	0.0001
	2 d	0.0001	0.0001
	4 d	0.0001	0.0001
Long Term	7 d	0.0001	0.0001
	14 d	0.0000	0.0001
	21 d	0.0000	0.0001
	28 d	0.0000	0.0000
	50 d	0.0000	0.0000
	100 d	0.0000	0.0000
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0001	-

Table 8.6-6: PECsoil for X12483137 on sugar beet, Use No. 1, 5

PEC soil (mg/kg)		Use No. 1, 5	
		1 × ~~0.13~~ 0.15 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		~~0.0004~~ 0.0002	-
Short Term	1 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
	2 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
	4 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
Long Term	7 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
	14 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
	21 d	~~0.0004~~	~~0.0004~~

		0.0002	0.0002
	28 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
	50 d	~~0.0004~~ 0.0002	~~0.0004~~ 0.0002
	100 d	~~0.0004~~ 0.0001	~~0.0004~~ 0.0002
Plateau conc. (~~5~~20cm) after 20 year		~~0.0004~~ 0.0001	-
PEC$_{accumulation}$ (PEC$_{act}$ +PEC$_{soil\ plateau}$)		~~0.0004~~ 0.0003	-

Table 8.6-7: PECsoil for Florpyrauxifen-benzyl on sugar beet, Use No. 2, 5

PEC soil (mg/kg)		Use No. 1, 5	
		2 × 0.80g as/ha application (with 20% crop interception)	
		Actual	**TWA**
Initial		0.0021	-
Short Term	1 d	0.0020	0.0021
	2 d	0.0020	0.0020
	4 d	0.0020	0.0020
Long Term	7 d	0.0019	0.0020
	14 d	0.0017	0.0019
	21 d	0.0016	0.0018
	28 d	0.0014	0.0017
	50 d	0.0011	0.0015
	100 d	0.0006	0.0012
Plateau conc. (~~5~~20cm) after 20 year		0.0000	-
PEC$_{accumulation}$ (PEC$_{act}$ +PEC$_{soil\ plateau}$)		0.0021	-

Table 8.6-8: PECsoil for X11438848 on sugar beet, Use No. 2, 5

PEC soil (mg/kg)		Use No. 2, 5	
		2 × 0.39g as/ha application (with 20% crop interception)	
		Actual	**TWA**
Initial		0.0010	-
Short Term	1 d	0.0010	0.0010
	2 d	0.0010	0.0010
	4 d	0.0010	0.0010
Long Term	7 d	0.0009	0.0010
	14 d	0.0009	0.0009
	21 d	0.0008	0.0009
	28 d	0.0007	0.0009
	50 d	0.0005	0.0008
	100 d	0.0003	0.0006
Plateau conc. (~~5~~20cm) after 20 year		0.0000	-
PEC$_{accumulation}$ (PEC$_{act}$ +PEC$_{soil\ plateau}$)		0.0010	-

Table 8.6-9: PECsoil for X11966341 on sugar beet, Use No. 2, 5

PEC soil (mg/kg)	Use No. 2, 5	
	2 × 0.05g as/ha application (with 20% crop interception)	
	Actual	**TWA**

Initial		0.0001	-
Short Term	1 d	0.0001	0.0001
	2 d	0.0001	0.0001
	4 d	0.0001	0.0001
Long Term	7 d	0.0001	0.0001
	14 d	0.0000	0.0001
	21 d	0.0000	0.0000
	28 d	0.0000	0.0000
	50 d	0.0000	0.0000
	100 d	0.0000	0.0000
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0001	-

Table 8.6-10: PECsoil for X12483137 on sugar beet, Use No. 2, 5

PEC soil (mg/kg)		Use No. 2, 5	
		2 × ~~0.07~~ 0.08g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0002	-
Short Term	1 d	0.0002	0.0002
	2 d	0.0002	0.0002
	4 d	0.0002	0.0002
Long Term	7 d	0.0002	0.0002
	14 d	0.0002	0.0002
	21 d	0.0002	0.0002
	28 d	0.0002	0.0002
	50 d	0.0002	0.0002
	100 d	0.0002	0.0002
Plateau conc. (~~5~~ 20cm) after 20 year		~~0.0003~~ 0.0001	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		~~0.0004~~ 0.0003	-

Table 8.6-11: PECsoil for Florpyrauxifen-benzyl on sugar beet, Use No. 3, 5

PEC soil (mg/kg)		Use No. 3, 5	
		3 × 0.53 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0020	-
Short Term	1 d	0.0020	0.0020
	2 d	0.0019	0.0020
	4 d	0.0019	0.0019
Long Term	7 d	0.0018	0.0019
	14 d	0.0017	0.0018
	21 d	0.0015	0.0017
	28 d	0.0014	0.0017
	50 d	0.0010	0.0015
	100 d	0.0005	0.0011
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0020	-

Table 8.6-12: PECsoil for X11438848 on sugar beet, Use No. 3, 5

PEC soil (mg/kg)		Use No. 3, 5	
		3 × 0.26 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0010	-
Short Term	1 d	0.0010	0.0010
	2 d	0.0010	0.0010
	4 d	0.0009	0.0010
Long Term	7 d	0.0009	0.0009
	14 d	0.0008	0.0009
	21 d	0.0007	0.0009
	28 d	0.0007	0.0008
	50 d	0.0005	0.0007
	100 d	0.0003	0.0006
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0010	-

Table 8.6-13: PECsoil for X11966341 on sugar beet, Use No. 3, 5

PEC soil (mg/kg)		Use No. 3, 5	
		3 × 0.03 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0001	-
Short Term	1 d	0.0001	0.0001
	2 d	0.0001	0.0001
	4 d	0.0001	0.0001
Long Term	7 d	0.0000	0.0001
	14 d	0.0000	0.0001
	21 d	0.0000	0.0000
	28 d	0.0000	0.0000
	50 d	0.0000	0.0000
	100 d	0.0000	0.0000
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0001	-

Table 8.6-14: PECsoil for X12483137 on sugar beet, Use No. 3, 5

PEC soil (mg/kg)		Use No. 3, 5	
		3 × ~~0.04~~ 0.05 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0002	-
Short Term	1 d	0.0002	0.0002
	2 d	0.0002	0.0002
	4 d	0.0002	0.0002
Long Term	7 d	0.0002	0.0002
	14 d	0.0002	0.0002
	21 d	0.0002	0.0002
	28 d	0.0002	0.0002
	50 d	0.0002	0.0002
	100 d	0.0002	0.0002
Plateau conc. (~~5~~ 20cm) after 20 year		~~0.0003~~ 0.0001	-

$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)	~~0.0004~~ 0.0003	-

Table 8.6-15: PECsoil for Florpyrauxifen-benzyl on sugar beet, Use No. 4, 5

PEC soil (mg/kg)		Use No. 4, 5	
		4 × 0.40 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0019	-
Short Term	1 d	0.0019	0.0019
	2 d	0.0019	0.0019
	4 d	0.0018	0.0019
Long Term	7 d	0.0018	0.0019
	14 d	0.0016	0.0018
	21 d	0.0015	0.0017
	28 d	0.0014	0.0016
	50 d	0.0010	0.0014
	100 d	0.0005	0.0011
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.00~~20~~19	-

Table 8.6-16: PECsoil for X11438848 on sugar beet, Use No. 4, 5

PEC soil (mg/kg)		Use No. 4, 5	
		4 × 0.20 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0010	-
Short Term	1 d	0.0009	0.0010
	2 d	0.0009	0.0009
	4 d	0.0009	0.0009
Long Term	7 d	0.0009	0.0009
	14 d	0.0008	0.0009
	21 d	0.0007	0.0008
	28 d	0.0007	0.0008
	50 d	0.0005	0.0007
	100 d	0.0003	0.0005
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0010	-

Table 8.6-17: PECsoil for X11966341 on sugar beet, Use No. 4, 5

PEC soil (mg/kg)		Use No. 4, 5	
		4 × 0.02 g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0001	-
Short Term	1 d	0.0001	---
	2 d	0.0001	0.0001
	4 d	0.0001	0.0001
Long Term	7 d	0.0001	0.0001
	14 d	0.0000	0.0001
	21 d	0.0000	0.0000
	28 d	0.0000	0.0000
	50 d	0.0000	0.0000

	100 d	0.0000	0.0000
Plateau conc. (~~5~~ 20cm) after 20 year		0.0000	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		0.0001	-

Table 8.6-18: PECsoil for X12483137 on sugar beet, Use No. 4, 5

PEC soil (mg/kg)		Use No. 4, 5	
		4 × ~~0.03~~ 0.04g as/ha application (with 20% crop interception)	
		Actual	TWA
Initial		0.0002	-
Short Term	1 d	0.0002	0.0002
	2 d	0.0002	0.0002
	4 d	0.0002	0.0002
Long Term	7 d	0.0002	0.0002
	14 d	0.0002	0.0002
	21 d	0.0002	0.0002
	28 d	0.0002	0.0002
	50 d	0.0002	0.0002
	100 d	0.0002	0.0002
Plateau conc. (~~5~~ 20cm) after 20 year		~~0.0003~~ 0.0001	-
$PEC_{accumulation}$ (PEC_{act} +$PEC_{soil\ plateau}$)		~~0.0004~~ 0.0003	-

8.6.2.2 PECsoil of formulated product F7B-39-30

F7B-39-30 consists of a single active substance and co-formulants. It will not remain intact in soil after application due to breakdown of its individual components. Therefore, only an initial formulation PECsoil for a single application was calculated since applications would not be cumulative, and time-aged values (actual and TWA) are not appropriate. The initial PECsoil (mg/kg) after application to drained soil was calculated as follows:

$$\text{Initial PECsoil} = \frac{A \times 1000}{100 \times d \times \rho}$$

where: A = effective appn. rate after adjusting for crop interception; first application only (kg FP/ha)
d = depth of soil layer (5 cm)
ρ = soil bulk density (1.5 g/mL)

Table 8.6-19: PECsoil for F7B-39-30 on sugar beets

Formulation	Application rate (L FP/ha)	Application rate (g FP/ha)*	Effective application rate (g FP/ha)**	PECsoil (mg/kg)
	Use No. 1, 5			
F7B-39-30	0.08	74.00	59.20 (20% interception)	0.08
	Use No. 2, 5			

Formulation				
	Application rate (L FP/ha)	Application rate (g FP/ha)*	Effective application rate (g FP/ha)**	PECsoil (mg/kg)
	0.04	37.00	29.60 (20% interception)	0.04
	Use No. 3, 5			
	0.026	24.05	19.24 (20% interception)	0.03
	Use No. 4, 5			
	0.02	18.50	14.80 (20% interception)	0.02

* Assuming formulation density of 0.925 g/mL

Evaluation by zRMS	PECsoil (KCP 9.1.3)
Modelling	The assumptions and results of calculations are acceptable however, zRMS made some corrections to the calculations. The predicted environmental concentrations in soil (PECsoil) of florpyrauxifen-benzyl and its metabolites: X11438848, X11966341 and X12483137 were calculated according to recommendations of the FOCUS workgroup on degradation kinetics using the folowing application rates: - 1x 0.08l product Rinpode (F7B-39-30)/ha (2 g/ha florpyrauxifen-benzyl) on sugar beet; - 2x 0.04l product Rinpode (F7B-39-30)/ha (2x1 g/ha florpyrauxifen-benzyl) on sugar beet with interval between applications: 5 days; - 3x 0.026l product Rinpode (F7B-39-30)/ha (3x0,66 g/ha florpyrauxifen-benzyl) on sugar beet with interval between applications: 5 days; - 4x 0.02l product Rinpode (F7B-39-30)/ha (4x0.5 g/ha florpyrauxifen-benzyl) on sugar beet with interval between applications: 5 days. 20% interception was considered. It was assumed that the avtive substance was distributed in the top 5 cm soil layer with a soil bulk density of 1.5 g/mL. The calculated PECs values are presented in Tables from 8.6-3 to 8.6-18. The applicant also correctly calculated the PECsoil for the formulation Rinpode (F7B-39-30). The results are shown in the Table 8.6-19. The calculated PECsoil values for Rinpode (F7B-39-30), florpyrauxifen-benzyl and its metabolites: X11438848, X11966341, and X12483137 are appropriate to be used for the subsequent risk assessment for soil organisms.
Agreed Endpoints	**Florpyrauxifen-benzyl:** Application rate: 1x 0.08l product Rinpode (F7B-39-30)/ha Initial PEC_{soil}: 0.0021mg/kg $PEC_{accumulation}$: 0.0021mg/kg Application rate: 2x 0.04l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0021mg/kg $PEC_{accumulation}$: 0.0021mg/kg Application rate: 3x 0.026l product Rinpode (F7B-39-30)/ha

	Initial PECsoil: 0.002 mg/kg $PEC_{accumulation}$: 0.002 mg/kg Application rate: 4x 0.02l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0019 mg/kg $PEC_{accumulation}$: 0.0019 mg/kg **Metabolites of florpyrauxifen-benzyl:** **X11438848** Application rate: 1x 0.08l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0011mg/kg $PEC_{accumulation}$: 0.0011mg/kg Application rate: 2x 0.04l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.001mg/kg $PEC_{accumulation}$: 0.001mg/kg Application rate: 3x 0.026l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.001mg/kg $PEC_{accumulation}$: 0.001mg/kg Application rate: 4x 0.02l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.001mg/kg $PEC_{accumulation}$: 0.001mg/kg **X11966341** Application rate: 1x 0.08l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0001mg/kg $PEC_{accumulation}$: 0.0001mg/kg Application rate: 2x 0.04l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0001mg/kg $PEC_{accumulation}$: 0.0001mg/kg Application rate: 3x 0.026l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0001mg/kg $PEC_{accumulation}$: 0.0001mg/kg Application rate: 4x 0.02l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0001mg/kg $PEC_{accumulation}$: 0.0001mg/kg **X12483137** Application rate: 1x 0.08l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0002mg/kg $PEC_{accumulation}$: 0.0003mg/kg Application rate: 2x 0.04l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0002mg/kg $PEC_{accumulation}$: 0.0003mg/kg Application rate: 3x 0.026l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0002mg/kg $PEC_{accumulation}$: 0.0003mg/kg

	Application rate: 4x 0.02l product Rinpode (F7B-39-30)/ha Initial PECsoil: 0.0002mg/kg $PEC_{accumulation}$: 0.0003mg/kg **Formulation: Rinpode (F7B-39-30)** **Application rate: 0,08l Rinpode (F7B-39-30)/ha** PECact = 0,08 mg/kg **Application rate: 0,04l Rinpode (F7B-39-30)/ha** PECact = 0.04 mg/kg **Application rate: 0,026l Rinpode (F7B-39-30)/ha** PECact = 0.03 mg/kg **Application rate: 0,02l Rinpode (F7B-39-30)/ha** PECact = 0.02 mg/kg

8.7 Predicted environmental concentrations in groundwater (PECgw) (KCP 9.2.4)

PECgw values were calculated for florpyrauxifen-benzyl and its major soil metabolites X11438848, X11966341, and X12483137.

8.7.1 Justification for new endpoints

EU agreed endpoints were used for the PECgw calculations with the following exceptions.

Compound	Parameter	EU endpoint	Endpoint used	Justification
Florpyrauxifen-benzyl	DT_{50} soil [d]	82.5 (geomean DFOP slow phase (n=3), FOMC DT90/3.32 (n=1); See table 8.3-1)	82.5/10.3	EU endpoint used for simulation of parent a.s. alone; 10.3 d used for simulation of metabolite pathway as a conservative approach (See note at 8.3.1)

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

Table 8.7-1: Input parameters related to application for PECgw calculations

Use no.	1, 5	2, 5	3, 5	4, 5
Crop	Sugar beets			

Application rate (g as/ha)	Florpyrauxifen-benzyl: 2	Florpyrauxifen-benzyl: 1	Florpyrauxifen-benzyl: 0.66	Florpyrauxifen-benzyl: 0.5
Max. number of applications	1	2	3	4
Crop interception (%)	20% (minimum BBCH 10)	20% (minimum BBCH 10)	20% (minimum BBCH 10)	20% (minimum BBCH 10)
Effective application rate (g as/ha)	Florpyrauxifen-benzyl: 1 x 1.6	Florpyrauxifen-benzyl: 2 x 0.8	Florpyrauxifen-benzyl: 3 x 0.528	Florpyrauxifen-benzyl: 4 x 0.4
Min. application interval (d)	NA	5	5	5
Application mode	Soil; effective application rates			
Relative application date	NA			
Frequency of application	Annual			
Models used	FOCUSPELMO 6.6.4 FOCUSPEARL 5.5.5 FOCUSMACRO 5.2			

Table 8.7-2: Applications dates for groundwater simulations for F7B-39-30

FOCUS scenario	Absolute application dates*			
	1st Application	2nd Application	3rd Application	4th Application
Use No. 1, 5				
Châteaudun	17-Apr (107)	-	-	-
Hamburg	16-Apr	-	-	-
Jokioinen	26-May	-	-	-
Kremsmünster	16-Apr	-	-	-
Okehampton	26-Apr	-	-	-
Piacenza	21-Mar	-	-	-
Porto	16-Mar	-	-	-
Sevilla	11-Nov	-	-	-
Thiva	2-May	-	-	-
Use No. 2, 5				
Châteaudun	17-Apr (107)	22-Apr (112)	-	-
Hamburg	16-Apr	21-Apr	-	-
Jokioinen	26-May	31-May	-	-
Kremsmünster	16-Apr	21-Apr	-	-
Okehampton	26-Apr	01-May	-	-
Piacenza	21-Mar	26-Mar	-	-
Porto	16-Mar	21-Mar	-	-
Sevilla	11-Nov	16-Nov	-	-

FOCUS scenario	Absolute application dates*			
	1st Application	2nd Application	3rd Application	4th Application
Thiva	02-May	07-May	-	-
Use No. 3, 5				
Châteaudun	17-Apr (107)	22-Apr (112)	27-Apr (117)	-
Hamburg	16-Apr	21-Apr	26-Apr	-
Jokioinen	26-May	31-May	05-Jun	-
Kremsmünster	16-Apr	21-Apr	26-Apr	-
Okehampton	26-Apr	01-May	06-May	-
Piacenza	21-Mar	26-Mar	31-Mar	-
Porto	16-Mar	21-Mar	26-Mar	-
Sevilla	11-Nov	16-Nov	21-Nov	-
Thiva	02-May	07-May	12-May	-
Use No. 4, 5				
Châteaudun	17-Apr (107)	22-Apr (112)	27-Apr (117)	02-May (122)
Hamburg	16-Apr	21-Apr	26-Apr	01-May
Jokioinen	26-May	31-May	05-Jun	10-Jun
Kremsmünster	16-Apr	21-Apr	26-Apr	01-May
Okehampton	26-Apr	01-May	06-May	11-May
Piacenza	21-Mar	26-Mar	31-Mar	05-Apr
Porto	16-Mar	21-Mar	26-Mar	31-Mar
Sevilla	11-Nov	16-Nov	21-Nov	26-Nov
Thiva	02-May	07-May	12-May	17-May

* Application dates estimated using AppDate (v.3.06) for BBCH 10. Numbers in brackets are Julian dates for scenario Châteaudun (required for MACRO simulations)

8.7.2.1 Florpyrauxifen-benzyl and its metabolites

Table 8.7-3: Input parameters for florpyrauxifen-benzyl and metabolite(s) for PECgw

Compound	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137	Value in accordance with EU endpoint y/n/ Reference
Molecular weight (g/mol)	439.2	349.1	335.1	380.09	-
Water solubility (mg/L)	0.015	132	132 (assumed same as X11438848)	132 (assumed same as X11438848)	y, EFSA, 2018
Saturated vapour pressure (Pa):	3.20E-05	1.00E-08	4.00E-08	1.00E-08	y, EFSA, 2018
DT_{50} in soil (d) (lab)	82.5 (for parent alone,	38.2 (linked	7.0 (linked	298.4 (SFO	EFSA, 2018

Compound	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137	Value in accordance with EU endpoint y/n/ Reference
	DFOP slow phase (n=4) DFOP DT90/3.32 (n=1)) 10.3 (for simulation of metabolites, geomean of overall DFOP (n=4) or FOMC (n=1) DT50, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =5)	DFOP (n=3) or FOMC (n=1)-SFO, geomean, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =4)	DFOP (n=2) or FOMC (n=1)-SFO-SFO, geomean, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =3)	top-down geomean, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =4)	Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, Degradation of XR-848 Benzyl Ester in Four Soils under Aerobic Conditions, DAS Study ID 121106;
K_{foc} (mL/g)/K_{fom}	21159/12273 (geometric mean, n = 5)	65.3/37.9 (geometric mean, n = 12)	61.2/35.5 (geometric mean, n = 12)	11.5/6.67 (geometric mean, n=4	EFSA, 2018 Wang, H., 2015, Batch Equilibrium Adsorption/Desorption of XDE-848 Benzyl Ester, DAS study ID 130638; Ding, Y., 2015, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolites, X11438848, X11966341 and X12300837, DAS study ID 130567; Lynn, K., 2016, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolite, X12483137, DAS study ID 151038
1/n	0.95 (arithmetic mean, n = 5)	0.86 (arithmetic mean, n=12)	0.86 (arithmetic mean, n=12)	0.82 (arithmetic mean, n = 4)	
Plant uptake factor	0	0	0	0	-
Formation fraction	-	0.835 from parent	0.78 from X11438848	1 from X11966341	

* Divide by 1.724 for Kfom

Table 8.7-4: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPEARL 5.5.5), Use No. 1, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 1 x 2 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.217
Hamburg	<0.001	<0.001	<0.001	0.298
Jokioinen	<0.001	<0.001	<0.001	0.234

Kremsmünster	<0.001	<0.001	<0.001	0.201
Okehampton	<0.001	<0.001	<0.001	0.152
Piacenza	<0.001	<0.001	<0.001	0.262
Porto	<0.001	<0.001	<0.001	0.142
Sevilla	<0.001	<0.001	<0.001	0.247
Thiva	<0.001	<0.001	<0.001	0.491

Table 8.7-5: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPEARL 5.5.5), Use No. 2, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 2 x 1 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.217
Hamburg	<0.001	<0.001	<0.001	0.298
Jokioinen	<0.001	<0.001	<0.001	0.234
Kremsmünster	<0.001	<0.001	<0.001	0.201
Okehampton	<0.001	<0.001	<0.001	0.152
Piacenza	<0.001	<0.001	<0.001	0.261
Porto	<0.001	<0.001	<0.001	0.142
Sevilla	<0.001	<0.001	<0.001	0.246
Thiva	<0.001	<0.001	<0.001	0.492

Table 8.7-6: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPEARL 5.5.5), Use No. 3, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 3 x 0.66 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.215
Hamburg	<0.001	<0.001	<0.001	0.295
Jokioinen	<0.001	<0.001	<0.001	0.231
Kremsmünster	<0.001	<0.001	<0.001	0.199
Okehampton	<0.001	<0.001	<0.001	0.150
Piacenza	<0.001	<0.001	<0.001	0.259
Porto	<0.001	<0.001	<0.001	0.141
Sevilla	<0.001	<0.001	<0.001	0.243
Thiva	<0.001	<0.001	<0.001	0.486

Table 8.7-7: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPEARL 5.5.5), Use No. 4, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 4 x 0.5 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.217
Hamburg	<0.001	<0.001	<0.001	0.298
Jokioinen	<0.001	<0.001	<0.001	0.233
Kremsmünster	<0.001	<0.001	<0.001	0.202
Okehampton	<0.001	<0.001	<0.001	0.152
Piacenza	<0.001	<0.001	<0.001	0.261
Porto	<0.001	<0.001	<0.001	0.143
Sevilla	<0.001	<0.001	<0.001	0.246
Thiva	<0.001	<0.001	<0.001	0.492

Table 8.7-8: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPELMO 6.6.4), Use No. 1, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 1 x 2 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.187
Hamburg	<0.001	<0.001	<0.001	0.124
Jokioinen	<0.001	<0.001	<0.001	0.140
Kremsmünster	<0.001	<0.001	<0.001	0.146
Okehampton	<0.001	<0.001	<0.001	0.104
Piacenza	<0.001	<0.001	<0.001	0.104
Porto	<0.001	<0.001	<0.001	0.070
Sevilla	<0.001	<0.001	<0.001	0.084
Thiva	<0.001	<0.001	<0.001	0.151

Table 8.7-9: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPELMO 6.6.4), Use No. 2, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 2 x 1 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.191
Hamburg	<0.001	<0.001	<0.001	0.126
Jokioinen	<0.001	<0.001	<0.001	0.142

Kremsmünster	<0.001	<0.001	<0.001	0.146
Okehampton	<0.001	<0.001	<0.001	0.104
Piacenza	<0.001	<0.001	<0.001	0.106
Porto	<0.001	<0.001	<0.001	0.075
Sevilla	<0.001	<0.001	<0.001	0.081
Thiva	<0.001	<0.001	<0.001	0.165

Table 8.7-10: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPELMO 6.6.4), Use No. 3, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 3 x 0.66 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.192
Hamburg	<0.001	<0.001	<0.001	0.126
Jokioinen	<0.001	<0.001	<0.001	0.142
Kremsmünster	<0.001	<0.001	<0.001	0.146
Okehampton	<0.001	<0.001	<0.001	0.103
Piacenza	<0.001	<0.001	<0.001	0.109
Porto	<0.001	<0.001	<0.001	0.075
Sevilla	<0.001	<0.001	<0.001	0.078
Thiva	<0.001	<0.001	<0.001	0.175

Table 8.7-11: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSPELMO 6.6.4), Use No. 4, 5, annual application

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 4 x 0.5 g as/ha			
	Florpyrauxifen-benzyl	X11438848	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.196
Hamburg	<0.001	<0.001	<0.001	0.127
Jokioinen	<0.001	<0.001	<0.001	0.145
Kremsmünster	<0.001	<0.001	<0.001	0.148
Okehampton	<0.001	<0.001	<0.001	0.104
Piacenza	<0.001	<0.001	<0.001	0.115
Porto	<0.001	<0.001	<0.001	0.077
Sevilla	<0.001	<0.001	<0.001	0.084
Thiva	<0.001	<0.001	<0.001	0.176

Table 8.7-12: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSMACRO 5.2), Use No. 1, 5.

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 2 x 1 g as/ha			
	Florpyrauxifen-benzyl	Florpyrauxifen acid	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.170

Table 8.7-13: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSMACRO 5.2), Use No. 2, 5.

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 2 x 1 g as/ha			
	Florpyrauxifen-benzyl	Florpyrauxifen acid	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.170

Table 8.7-14: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSMACRO 5.2), Use No. 3, 5.

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 3 x 0.66 g as/ha			
	Florpyrauxifen-benzyl	Florpyrauxifen acid	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.165

Table 8.7-15: PECgw for florpyrauxifen-benzyl and metabolite(s) on sugar beet (FOCUSMACRO 5.2), Use No. 4, 5.

FOCUS Scenario	80th Percentile PEC_{gw} at 1 m soil depth (µg/L)			
	BBCH 10, 4 x 0.5 g as/ha			
	Florpyrauxifen-benzyl	Florpyrauxifen acid	X11966341	X12483137
Châteaudun	<0.001	<0.001	<0.001	0.170

The results produced by FOCUSPEARL are considerably more conservative. For all cases, the PECgw values for the parent, X11438848 and X11966341 were calculated as <0.001.

For X1248137, the PECgw values were below the 0.75 µg/L trigger for all scenarios. Sufficient toxicological information is available to show that metabolite X1248137 can be considered as non-relevant.

Evaluation by zRMS	PECgw (KCP 9.2.4)
Modelling	For the active substance florpyrauxifen-benzyl and its metabolites X11438848, X11966341, and X12483137 the calculations presented here are accepted. The applicant has used appropriate models for ground water FOCUS-PEARL 5.5.5, FOCUS-PELMO 6.6.4 and FOCUS MACRO 5.5.4. PEC_{GW} values were calculated for all intended uses for the growth stage: BBCH 10 on sugar beet.

	Input parameters used in FOCUS ground water modelling for active substance and its metabolites are correct. The zRMS agrees with the approach used by the applicant for metabolite simulations with a parent DT50 of 10.3 days as a worst-case. This was accepted by the zRMS. This geomean of trigger endpoints i.e. 10.3 days was chosen when the metabolites were modelled, because it more realistically (and conservatively) represented the formation of the metabolites.
PECgw	Results of modelling with FOCUS PELMO 6.6.4 and PEARL 5.5.5 show that the active substance florpyrauxifen-benzyl and its metabolites X11438848, X11966341 are not expected to penetrate into groundwater at concentrations of ≥ 0.1 µg/L in any of the intended uses for all scenarios. For the metabolite X12483137 PECgw values are above the threshold of 0,1 µg/L in all cases. Results of modelling with FOCUS MACRO 5.5.4.show that the active substance florpyrauxifen-benzyl and its metabolites: X11438848, X11966341 are not expected to penetrate into groundwater at concentrations of ≥ 0.1 µg/L in any of the intended uses for Châteaudun scenario. Only for X1248137, the PECgw values were above the 0.1 µg/L trigger for Châteaudun scenario in all modelling cases. However, the relevance of the metabolite: X1248137 was made in Part B Section 10 of this dossier, where was concluded that this metabolite is not relevant. Therfore, it can be concluded that no unacceptable risk of leaching from florpyrauxifen-benzyl and its metabolites is expected for the proposed use on sugar beet.
Conclusion for risk assessment	An assessment of the metabolite of florpyrauxifen-benzyl: X12483137 regarding their relevance for groundwater is necessary. For the assessment of relevance please refer to Part B, Section 10 of this dRR.

8.8 Predicted environmental concentrations in surface water (PECsw/sed) (KCP 9.2.5)

PECsw/sed values were calculated for florpyrauxifen-benzyl, and its major (>5% AR) soil metabolite X1248137 and aquatic metabolites X11438848, X11966341, X12300837 and X194973 and aqueous photolysis metabolites X12131932, X12393505, and X195023.

PECsw values were calculated for the formulation: F7B-39-30.

8.8.1 Justification for new endpoints

EU agreed endpoints were used for the PECsw/sed calculations with the following exceptions.

Compound	Parameter	EU endpoint	Endpoint used	Justification
Florpyrauxifen-benzyl	DT_{50} soil [d]	82.5 (geomean DFOP slow phase (n=3), FOMC DT90/3.32 (n=1); See table 8.3-1)	82.5/10.3	EU endpoint used for simulation of parent a.s. alone; 10.3 d used for simulation of metabolite pathway as a conservative approach (See note at 8.3.1)

8.8.2 Active substance and metabolite(s) (KCP 9.2.5)

Table 8.8-1: Input parameters related to application for PECsw/sed

Use no.	1, 5	2, 5	3, 5	4, 5
Crop	Sugar beets			
Application rate (L FP/ha)	1 x 0.08	2 x 0.04	3 x 0.026	4 x 0.02
Application rate (g as/ha)	Florpyrauxifen-benzyl: 2	Florpyrauxifen-benzyl: 1	Florpyrauxifen-benzyl: 0.66	Florpyrauxifen-benzyl: 0.5
Max. number of applications	1	2	3	4
Min. application interval (d)	NA	5	5	5
Frequency of application	Annual			
BBCH	10 - 19			
Application period / region (STEP 1 and 2)	Mar-May (N Europe/S Europe) Jun-Sep (N Europe/S Europe)			
Step 3 Scenarios	D3, D4, D5*, R1, R3, R4*			
Application method	Ground spray			
Chemical application method (CAM)	2 – appn. foliar linear			
Depth incorporated (cm)	4			
Models used	STEPS 1-2 v3.2 FOCUS SPIN v2.2 FOCUS SWASH v5.3 FOCUS PRZM v4.3.1 FOCUS MACRO v5.5.4 FOCUS TOXSWA v5.5.3			

*D5 and R4 are not defined for sugar beet; legume used as surrogate

For each use and scenario, the first possible day of application at BBCH 10 was estimiated by AppDate (v.3.06) at. A 30-day window for single application (Use No. 1). For multiple applications (Use No. 2, 3 and 4), the number of application and the minimum application interval of 5 days were considered in addition to derive the corresponding application windows (i.e. 30 + (number of applications - 1) * interval). Simulation of the corresponding single application rate of multiple applications was not performed for Use No. 2, 3 and 4 because Use No. 1 provide the worst-case PECsw values, which has the same first application date (determined by PAT) for the same scenario and highest application rate.

Table 8.8-2: FOCUS Step 3 Scenario related application windows for $PEC_{sw/sed}$ calculations for the application of F7B-39-30

Crop	Scenario	Application window used in modelling			
		Use No. 1, 5	**Use No. 2, 5**	**Use No. 3, 5**	**Use No. 4, 5**
Sugar beet	D3 (Vreedepel)	26-Apr to 26-May	26-Apr to 31-May	26-Apr to 05-Jun	26-Apr to 10-Jun
	D4 (Skousbo)	05-May to 04-Jun	05-May to 09-Jun	05-May to 14-Jun	05-May to 19-Jun
	D5 (La Jailliere)*	16-Mar to 15-Apr	16-Mar to 20-Apr	16-Mar to 25-Apr	16-Mar to 30-Apr
	R1 (Weiherbach)	17-Apr to 17-May	17-Apr to 22-May	17-Apr to 27-May	17-Apr to 01-Jun
	R3 (Bologna)	21-Mar to 20-Apr	21-Mar to 25-Apr	21-Mar to 30-Apr	21-Mar to 05-May
	R4 (Roujan)*	22-Apr to 22-May	22-Apr to 27-May	22-Apr to 01-Jun	22-Apr to 06-Jun

*D5 and R4 are not defined for sugar beet; legume used as surrogate

Note on surrogate crop

Additional scenarios (D5 and R4) to meet Central Zone requirements were simulated with legume as a surrogate. For runoff scenarios legume has the same or very similar general cropping parameters (e.g. canopy interception, maximum coverage) as sugar beet. For the runoff scenarios in common between the two crops (R1 and R3), legume has the similar crop development parameters (e.g. maximum root depth, emergence and maturation dates) and runoff curve numbers as sugar beet. For drainage scenarios, legume also has the same or very similar general cropping parameters (e.g. maximum leaf area index, root distribution, max. crop height, min. stomatal resistance) as sugar beet. For the drainage scenarios in common (D3 and D4), legume has the similar crop development parameters (e.g. root depth, emergence and intermediate crop development dates) as sugar beet. Thus, legume is a reasonable surrogate.

Note on volatilization and redeposition

Florpyrauxifen-benzyl has a measured vapour pressure of 3.2E-5 Pa. Under the German EVA volatilisation scheme, the material is classified as semi-volatile, with the possibility of volatilizing from foliage. At the highest rate of application of 2 g a.s./ha and the maximum foliar interception of 20% (BBCH 10-19), the resulting 24-hour redeposition was estimated by EVA to be <0.001 g a.s./ha. This would result in a potential increase in the calculated PECsw on the order of 10^{-3} ug/L (and decreasing with distance off-field). Such small difference will have no impact on the risk assessment, so additional calculations of volatilization/redeposition were not performed. The metabolite X12300837 is assumed to have the same vapour pressure as the parent, but as a soil-only metabolite it will not be present on foliage and thus requires no additional evaluation. All the other assessed chemical species have vapour pressures below the trigger for additional evaluation.

8.8.2.1 Florpyrauxifen-benzyl and its metabolites

Table 8.8-3: Input parameters related to florpyrauxifen-benzyl and metabolite(s) for PECsw/sed – Steps 1/2 and 3

Compound		Florpyrauxifen-benzyl	X11438848	Value in accordance with EU endpoint y/n/ Reference
Molecular weight (g/mol)		439.2	349.1	-
Water solubility (mg/L)		0.015	132	y, EFSA, 2018 Parent: y, Comb, A, 2013, NAFST-12-232; acid: Dunning, J., 2014, NAFST-13-208
Saturated vapour pressure (Pa):		3.20E-05	3.00E-08	y, EFSA, 2018
Diffusion coefficient in water (m²/d)		4.3×10^{-5}		default
Diffusion coefficient in air (m²/d)		0.43		default
K_{foc} (mL/g)		21159 (geometric mean, n = 5)	65.3 (geometric mean, n = 12)	EFSA, 2018 Wang, H., 2015, Batch Equilibrium Adsorption/Desorption of XDE-848 Benzyl Ester, DAS study ID 130638; Ding, Y., 2015, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolites, X11438848, X11966341 and X12300837, DAS study ID 130567; Lynn, K., 2016, Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolite, X12483137, DAS study ID 151038
Freundlich Exponent 1/n		0.95 (arithmetic mean, n = 5)	0.86 (arithmetic mean, n=12)	
Plant Uptake		0		default
Wash-Off factor from Crop (1/mm)		0.05 (MACRO) 0.50 (PRZM)	-	default
$DT_{50,soil}$ (d)		82.5 (for parent alone, DFOP slow phase (n=4) DFOP DT90/3.32 (n=1)) 10.3 (for simulation of metabolites, geomean of overall DFOP (n=4) or FOMC (n=1) DT50, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =5)	38.2 (linked DFOP (n=3) or FOMC (n=1)-SFO, geomean, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =4)	Y, EFSA, 2018 Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, Degradation of XR-848 Benzyl Ester in Four Soils under Aerobic Conditions, DAS Study ID 121106;
$DT_{50,water}$ (d)	Step 1/2	4.9 (geometric mean)	5.8 (geometric mean)	
	Step 3	1000 (default)	5.8 (geometric mean)	y, Guenthenspberger, K. A., Balcer, J. L., 2015, DAS Study ID 121001
$DT_{50,sed}$ (d)	Step 1/2	4.9 (geometric mean)	5.8 (geometric mean)	
	Step 3	4.9 (geometric mean)	1000 (default)	
$DT_{50,whole\ system}$ (d)		4.9 (geometric mean)	5.8 (geometric mean)	

Compound	Florpyrauxifen-benzyl	X11438848	Value in accordance with EU endpoint y/n/ Reference
Maximum occurrence observed (% molar basis with respect to the parent)	-	Soil: 62 (lab) Water:43 Sediment: 4 Total system: 45	
Formation fraction in soil:	-	0.835 from parent	y, Taylor, J. A., Laughlin, L. A., Balcer, J. L., 2015, DAS Study ID 121106
Formation fraction in water	-	1 (worst-case)	Guenthenspberger, K. A., Balcer, J. L., 2015, DAS Study ID 121001
Formation fraction in sediment	-	1 (worst-case)	

Table 8.8-4: Input parameters related to addition metabolites for florpyrauxifen-benzyl for PECsw/sed, evaluated at Steps 1/2 only

Compound	X11966341	X12483137	X12300837	X12131932	X12393505	X194973	X195023*	Value in accordance with EU endpoint y/n/ Reference
Molecular weight (g/mol)	335.1	380.09	425.2	404.8	314.7	122.1	108.1	
$DT_{50,soil}$ (d)	7.0 (linked DFOP (n=2) or FOMC (n=1)-SFO-SFO, geomean, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =3)	298.4 (SFO top-down geomean, normalisation to pF2, 20 °C with Q_{10} of 2.58, n =4)	NA (assume 1000)	NA (assume 1000)	NA (assume 1000)	NA (assume 1000)	NA (assume 1000)	Default value
$DT_{50,water}$ (d)	79.7 (geometric mean)	1000 (default)	8.8 (geometric mean)	0.48 (natural water photolysis)	4.96 (natural water photolysis)	2.6	NA (assume 1000)	Water -sediment: y, Guenthenspberger, K. A., Balcer, J. L., 2015, DAS Study ID 121001 Photolysis: y, Taylor, J, A., Laughlin. L. A., Balcer, J. L; 2014, Study ID 120732
$DT_{50,sed}$ (d)	79.7 (geometric mean)	1000 (default)	8.8 (geometric mean)	NA (assume 1000)	NA (assume 1000)	NA (assume 1000)	NA (assume 1000)	
$DT_{50,whole\ system}$ (d)	79.7 (geometric mean)	1000 (default)	8.8 (geometric mean)	0.48	4.96	2.6	NA (assume 1000)	
Maximum occurrence observed (% molar basis with respect to the parent)	Soil:8 Water:58 Sediment: 35 Total system: 78	Soil:11 Water:NA Sediment: NA Total system: NA	Soil:NA Water: 8 Sediment: 19 Total water-sediment	Water: 30.8 (photolysis, sterile buffer)	Water 10.4 (photolysis, sterile buffer)	Water-sediment total system: 21.3	Water: 81.5 (photolysis, natural water)	

Compound	X11966341	X12483137	X12300837	X12131932	X12393505	X194973	X195023*	Value in accordance with EU endpoint y/n/ Reference
			system:23					

* A worst-case estimate at Step 3 was performed in addition using the overall maximum PEC_{sw} value of parent at Step 3

$PEC_{sw/sed}$

Steps 1 through 3 were executed for florpyrauxifen-benzyl. The aquatic RAC for the compound is 0.012 µg/L (see the B9 section of the dossier).

Table 8.8-5: Steps 1, 2 and 3 PECsw/sed for florpyrauxifen-benzyl on sugar beet, BBCH 10-19, Use No. 1, 5

FOCUS scenario	Season/ Waterbody	Use No. 1, 5 (1 x 2 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.041	-	0.008	4.829
Step 2					
Northern Europe	Mar-May	0.018	-	0.002	0.821
	Jun-Sep	0.018	-	0.002	0.821
Southern Europe	Mar-May	0.018	-	0.003	1.568
	Jun-Sep	0.018	-	0.003	1.194
Step 3					
D3	Ditch	0.010	Drift	<0.001	0.007
D4	Pond	<0.001	Drift	<0.001	0.002
D4	Stream	0.008	Drift	<0.001	<0.001
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.007	Drift	<0.001	0.028
R3	Stream	0.010	Drift	<0.001	0.018
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	0.001
D5	Stream	0.008	Drift	<0.001	<0.001
R4	Stream	0.007	Drift	<0.001	0.031

Table 8.8-6: Steps 1, 2 and 3 PECsw/sed for florpyrauxifen-benzyl on sugar beet, BBCH 10-19, Use No. 2, 5

FOCUS scenario	Season/ Waterbody	Use No. 2, 5 (2 x 1 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.041	-	0.008	4.829
Step 2					
Northern Europe	Mar-May	0.008	-	0.002	0.780
	Jun-Sep	0.008	-	0.002	0.780
Southern Europe	Mar-May	0.008	-	0.003	1.512
	Jun-Sep	0.008	-	0.002	1.146
Step 3					
D3	Ditch	0.004	Drift	<0.001	0.004
D4	Pond	<0.001	Drift	<0.001	<0.001
D4	Stream	0.004	Drift	<0.001	<0.001
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.003	Drift	<0.001	0.029
R3	Stream	0.004	Drift	<0.001	0.019
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	0.002
D5	Stream	0.004	Drift	<0.001	<0.001
R4	Stream	0.003	Drift	<0.001	0.034

Table 8.8-7: Steps 1, 2 and 3 PECsw/sed for florpyrauxifen-benzyl on sugar beet, BBCH 10-19, Use No. 3, 5

FOCUS scenario	Season/ Waterbody	Use No. 3, 5 (3 x 0.66 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.041	-	0.008	4.781
Step 2					
Northern Europe	Mar-May	0.005	-	0.001	0.741
	Jun-Sep	0.005	-	0.001	0.741
Southern Europe	Mar-May	0.007	-	0.002	1.450
	Jun-Sep	0.005	-	0.002	1.095
Step 3					
D3	Ditch	0.002	Drift	<0.001	0.003
D4	Pond	<0.001	Drift	<0.001	<0.001
D4	Stream	0.002	Drift	<0.001	<0.001

FOCUS scenario	Season/ Waterbody	Use No. 3, 5 (3 x 0.66 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.002	Drift	<0.001	0.032
R3	Stream	0.002	Drift	<0.001	0.020
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	<0.001
D5	Stream	0.002	Drift	<0.001	<0.001
R4	Stream	0.002	Drift	<0.001	0.041

Table 8.8-8: Steps 1, 2 and 3 PECsw/sed for florpyrauxifen-benzyl on sugar beet, BBCH 10-19, Use No. 4, 5

FOCUS scenario	Season/ Waterbody	Use No. 4, 5 (4 x 0.5 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.041	-	0.008	4.829
Step 2					
Northern Europe	Mar-May	0.004	-	0.001	0.725
	Jun-Sep	0.004	-	0.001	0.725
Southern Europe	Mar-May	0.007	-	0.002	1.428
	Jun-Sep	0.005	-	0.002	1.077
Step 3					
D3	Ditch	0.002	Drift	<0.001	0.002
D4	Pond	<0.001	Drift	<0.001	<0.001
D4	Stream	0.001	Drift	<0.001	<0.001
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.001	Drift	<0.001	0.032
R3	Stream	0.002	Drift	<0.001	0.020
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	<0.001
D5	Stream	0.002	Drift	<0.001	<0.001
R4	Stream	0.001	Drift	<0.001	0.030

Steps 1,2 and 3 $PEC_{sw/sed}$ for X11438848

Steps 1 through 3 were executed for the primary soil metabolites X11438848 (florpyrauxifen acid), as biological activity has been observed with this compound. The aquatic RAC for the compound is 0.035 µg/L (see the B9 section of the dossier).

Table 8.8-9: Steps 1, 2 and 3 PECsw/sed for X1143848 on sugar beet, BBCH 10-19, Use No. 1, 5

FOCUS scenario	Season/ Waterbody	Use No. 1, 5 (1 x 2 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route*	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.528	-	0.193	0.341
Step 2					
Northern Europe	Mar-May	0.083	-	0.030	0.053
	Jun-Sep	0.083	-	0.030	0.053
Southern Europe	Mar-May	0.162	-	0.059	0.105
	Jun-Sep	0.122	-	0.045	0.079
Step 3					
D3	Ditch	<0.001	Drift	<0.001	<0.001
D4	Pond	0.001	Drift	0.001	0.004
D4	Stream	0.002	Drift	0.001	0.003
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.010	Drift	<0.001	0.010
R3	Stream	0.015	Drift	<0.001	0.006
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	0.002
D5	Stream	<0.001	Drift	<0.001	0.001
R4	Stream	0.010	Drift	<0.001	0.012

* Dominant entry route of parent

Table 8.8-10: Steps 1, 2 and 3 PECsw/sed for X1143848 on sugar beet, BBCH 10-19, Use No. 2, 5

FOCUS scenario	Season/ Waterbody	Use No. 2, 5 (2 x 1 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route*	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.528	-	0.193	0.341
Step 2					
Northern Europe	Mar-May	0.079	-	0.029	0.051
	Jun-Sep	0.079	-	0.029	0.051
Southern Europe	Mar-May	0.155	-	0.057	0.101
	Jun-Sep	0.117	-	0.043	0.076
Step 3					
D3	Ditch	<0.001	Drift	<0.001	<0.001
D4	Pond	0.001	Drift	0.001	0.004

FOCUS scenario	Season/ Waterbody	Use No. 2, 5 (2 x 1 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route*	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
D4	Stream	0.002	Drift	0.001	0.003
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.010	Drift	<0.001	0.011
R3	Stream	0.014	Drift	<0.001	0.007
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	0.002
D5	Stream	<0.001	Drift	<0.001	0.002
R4	Stream	0.009	Drift	<0.001	0.013

* Dominant entry route of parent

Table 8.8-11: Steps 1, 2 and 3 PECsw/sed for X1143848 on sugar beet, BBCH 10-19, Use No. 3, 5

FOCUS scenario	Season/ Waterbody	Use No. 3, 5 (3 x 0.66 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route*	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.523	-	0.191	0.337
Step 2					
Northern Europe	Mar-May	0.075	-	0.027	0.048
	Jun-Sep	0.075	-	0.027	0.048
Southern Europe	Mar-May	0.148	-	0.054	0.096
	Jun-Sep	0.111	-	0.041	0.072
Step 3					
D3	Ditch	<0.001	Drift	<0.001	<0.001
D4	Pond	0.001	Drift	0.001	0.004
D4	Stream	0.002	Drift	0.001	0.003
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.010	Drift	<0.001	0.013
R3	Stream	0.013	Drift	<0.001	0.008
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	0.002
D5	Stream	<0.001	Drift	<0.001	0.002
R4	Stream	0.007	Drift	<0.001	0.017

* Dominant entry route of parent

Table 8.8-12: Steps 1, 2 and 3 PECsw/sed for X1143848 on sugar beet, BBCH 10-19, Use No. 4, 5

FOCUS scenario	Season/ Waterbody	Use No. 4, 5 (4 x 0.5 g a.s. /ha)			
		Max. PECsw (µg/L)	Dominant entry route*	Max. 21 d TWA PECsw (µg/L)	Max. PECsed (µg/kg)
Step 1					
-	-	0.528	-	0.193	0.341
Step 2					
Northern Europe	Mar-May	0.073	-	0.027	0.047
	Jun-Sep	0.073	-	0.027	0.047
Southern Europe	Mar-May	0.144	-	0.053	0.094
	Jun-Sep	0.108	-	0.040	0.070
Step 3					
D3	Ditch	<0.001	Drift	<0.001	<0.001
D4	Pond	0.002	Drift	0.001	0.004
D4	Stream	0.003	Drift	0.001	0.003
R1	Pond	<0.001	Drift	<0.001	0.002
R1	Stream	0.010	Drift	<0.001	0.014
R3	Stream	0.011	Drift	<0.001	0.008
Legume as surrogate					
D5	Pond	<0.001	Drift	<0.001	0.002
D5	Stream	<0.001	Drift	<0.001	0.002
R4	Stream	0.006	Drift	<0.001	0.013

* Dominant entry route of parent

Steps 1,2 for other metabolites

Table 8.8-13: $PEC_{sw/sed}$ for X11966341, X12483137, X123000837, X12131932, X12393505, X194973 and X195023 (Step 1-2 Only), on sugar beet, BBCH 10-19, Use No. 1, 5

Scenario FOCUS	Period/ Waterbody	Max PEC_{sw} (µg/L)	21 d - $PEC_{sw,twa}$ (µg/L)	Max PEC_{sed} (µg/kg)
X11966341				
Step 1				
	-	0.415	0.379	0.252
Step 2				
Northern Europe	Mar-May	0.071	0.065	0.043
Northern Europe	Jun-Sep	0.071	0.065	0.043
Southern Europe	Mar-May	0.132	0.120	0.080
Southern Europe	Jun-Sep	0.101	0.092	0.061
X12483137				
Step 1				
	-	0.063	0.062	0.007
Step 2				
Northern Europe	Mar-May	0.010	0.010	0.001
Northern Europe	Jun-Sep	0.010	0.010	0.001
Southern Europe	Mar-May	0.020	0.020	0.002

Southern Europe	Jun-Sep	0.015	0.015	0.002
X12300837				
Step 1				
	-	0.036	0.016	0.873
Step 2				
Northern Europe	Mar-May	0.006	0.003	0.151
Northern Europe	Jun-Sep	0.006	0.003	0.151
Southern Europe	Mar-May	0.011	0.005	0.286
Southern Europe	Jun-Sep	0.008	0.004	0.218
X12131932				
Step 1				
	-	0.012	0.000	1.371
Step 2				
Northern Europe	Mar-May	0.005	0.000	0.237
Northern Europe	Jun-Sep	0.005	0.000	0.237
Southern Europe	Mar-May	0.005	0.001	0.449
Southern Europe	Jun-Sep	0.005	0.001	0.343
X12393505				
Step 1				
	-	0.047	0.015	0.030
Step 2				
Northern Europe	Mar-May	0.008	0.003	0.005
Northern Europe	Jun-Sep	0.008	0.003	0.005
Southern Europe	Mar-May	0.015	0.005	0.010
Southern Europe	Jun-Sep	0.011	0.004	0.007
X194973				
Step 1				
	-	0.040	0.007	0.006
Step 2				
Northern Europe	Mar-May	0.006	0.001	0.001
Northern Europe	Jun-Sep	0.006	0.001	0.001
Southern Europe	Mar-May	0.012	0.002	0.002
Southern Europe	Jun-Sep	0.009	0.002	0.001
X195023				
Step 1				
	-	0.135	0.134	0.018
Step 2				
Northern Europe	Mar-May	0.024	0.024	0.003
Northern Europe	Jun-Sep	0.024	0.024	0.003
Southern Europe	Mar-May	0.044	0.044	0.006
Southern Europe	Jun-Sep	0.034	0.034	0.005

Table 8.8-14: $PEC_{sw/sed}$ for X11966341, X12483137, X123000837, X12131932, X12393505, X194973 and X195023 (Step 1-2 Only), on sugar beet, BBCH 10-19, Use No. 2, 5

Scenario FOCUS	Period/ Waterbody	Max PEC_{sw} (µg/L)	21 d - $PEC_{sw,twa}$ (µg/L)	Max PEC_{sed} (µg/kg)
X11966341				
Step 1				
	-	0.415	0.379	0.252
Step 2				
Northern Europe	Mar-May	0.068	0.062	0.041
Northern Europe	Jun-Sep	0.068	0.062	0.041
Southern Europe	Mar-May	0.126	0.115	0.077
Southern Europe	Jun-Sep	0.097	0.088	0.059
X12483137				
Step 1				
	-	0.063	0.062	0.007

Step 2				
Northern Europe	Mar-May	0.010	0.010	0.001
Northern Europe	Jun-Sep	0.010	0.010	0.001
Southern Europe	Mar-May	0.020	0.020	0.002
Southern Europe	Jun-Sep	0.015	0.015	0.002
X12300837				
Step 1				
	-	0.036	0.016	0.873
Step 2				
Northern Europe	Mar-May	0.005	0.003	0.144
Northern Europe	Jun-Sep	0.005	0.003	0.144
Southern Europe	Mar-May	0.010	0.005	0.276
Southern Europe	Jun-Sep	0.008	0.004	0.210
X12131932				
Step 1				
	-	0.012	0.000	1.371
Step 2				
Northern Europe	Mar-May	0.002	0.000	0.228
Northern Europe	Jun-Sep	0.002	0.000	0.228
Southern Europe	Mar-May	0.002	0.001	0.436
Southern Europe	Jun-Sep	0.002	0.000	0.332
X12393505				
Step 1				
	-	0.047	0.015	0.030
Step 2				
Northern Europe	Mar-May	0.007	0.003	0.005
Northern Europe	Jun-Sep	0.007	0.003	0.005
Southern Europe	Mar-May	0.014	0.005	0.009
Southern Europe	Jun-Sep	0.011	0.004	0.007
X194973				
Step 1				
	-	0.040	0.007	0.006
Step 2				
Northern Europe	Mar-May	0.006	0.001	0.001
Northern Europe	Jun-Sep	0.006	0.001	0.001
Southern Europe	Mar-May	0.012	0.002	0.002
Southern Europe	Jun-Sep	0.009	0.002	0.001
X195023				
Step 1				
	-	0.135	0.134	0.018
Step 2				
Northern Europe	Mar-May	0.023	0.023	0.003
Northern Europe	Jun-Sep	0.023	0.023	0.003
Southern Europe	Mar-May	0.043	0.043	0.006
Southern Europe	Jun-Sep	0.033	0.033	0.004

Table 8.8-15: $PEC_{sw/sed}$ for X11966341, X12483137, X123000837, X12131932, X12393505, X194973 and X195023 (Step 1-2 Only), on sugar beet, BBCH 10-19, Use No. 3, 5

Scenario FOCUS	Period/ Waterbody	Max PEC_{sw} (µg/L)	21 d - $PEC_{sw,twa}$ (µg/L)	Max PEC_{sed} (µg/kg)
X11966341				
Step 1				
	-	0.411	0.375	0.249
Step 2				
Northern Europe	Mar-May	0.064	0.058	0.038
Northern Europe	Jun-Sep	0.064	0.058	0.038
Southern Europe	Mar-May	0.120	0.110	0.073

Southern Europe	Jun-Sep	0.092	0.084	0.056
X12483137				
Step 1				
	-	0.062	0.061	0.007
Step 2				
Northern Europe	Mar-May	0.010	0.010	0.001
Northern Europe	Jun-Sep	0.010	0.010	0.001
Southern Europe	Mar-May	0.019	0.019	0.002
Southern Europe	Jun-Sep	0.015	0.014	0.002
X12300837				
Step 1				
	-	0.036	0.016	0.864
Step 2				
Northern Europe	Mar-May	0.005	0.002	0.136
Northern Europe	Jun-Sep	0.005	0.002	0.136
Southern Europe	Mar-May	0.010	0.005	0.265
Southern Europe	Jun-Sep	0.007	0.004	0.201
X12131932				
Step 1				
	-	0.012	0.000	1.357
Step 2				
Northern Europe	Mar-May	0.001	0.000	0.217
Northern Europe	Jun-Sep	0.001	0.000	0.217
Southern Europe	Mar-May	0.002	0.000	0.419
Southern Europe	Jun-Sep	0.001	0.000	0.318
X12393505				
Step 1				
	-	0.047	0.015	0.030
Step 2				
Northern Europe	Mar-May	0.007	0.002	0.005
Northern Europe	Jun-Sep	0.007	0.002	0.005
Southern Europe	Mar-May	0.014	0.005	0.009
Southern Europe	Jun-Sep	0.010	0.004	0.007
X194973				
Step 1				
	-	0.039	0.007	0.006
Step 2				
Northern Europe	Mar-May	0.006	0.001	0.001
Northern Europe	Jun-Sep	0.006	0.001	0.001
Southern Europe	Mar-May	0.012	0.002	0.002
Southern Europe	Jun-Sep	0.009	0.002	0.001
X195023				
Step 1				
	-	0.134	0.133	0.018
Step 2				
Northern Europe	Mar-May	0.022	0.022	0.003
Northern Europe	Jun-Sep	0.022	0.022	0.003
Southern Europe	Mar-May	0.041	0.041	0.005
Southern Europe	Jun-Sep	0.032	0.031	0.004

Table 8.8-16: $PEC_{sw/sed}$ for X11966341, X12483137, X123000837, X12131932, X12393505, X194973 and X195023 (Step 1-2 Only), on sugar beet, BBCH 10-19, Use No. 4, 5

Scenario FOCUS	Period/ Waterbody	Max PEC_{sw} (µg/L)	21 d - $PEC_{sw,twa}$ (µg/L)	Max PEC_{sed} (µg/kg)
X11966341				
Step 1				
	-	0.415	0.379	0.252

Step 2				
Northern Europe	Mar-May	0.062	0.056	0.037
Northern Europe	Jun-Sep	0.062	0.056	0.037
Southern Europe	Mar-May	0.118	0.107	0.071
Southern Europe	Jun-Sep	0.090	0.082	0.054
X12483137				
Step 1				
	-	0.063	0.062	0.007
Step 2				
Northern Europe	Mar-May	0.010	0.010	0.001
Northern Europe	Jun-Sep	0.010	0.010	0.001
Southern Europe	Mar-May	0.019	0.019	0.002
Southern Europe	Jun-Sep	0.015	0.015	0.002
X12300837				
Step 1				
	-	0.036	0.016	0.873
Step 2				
Northern Europe	Mar-May	0.005	0.002	0.133
Northern Europe	Jun-Sep	0.005	0.002	0.133
Southern Europe	Mar-May	0.010	0.005	0.260
Southern Europe	Jun-Sep	0.007	0.004	0.197
X12131932				
Step 1				
	-	0.012	0.000	1.371
Step 2				
Northern Europe	Mar-May	0.001	0.000	0.213
Northern Europe	Jun-Sep	0.001	0.000	0.213
Southern Europe	Mar-May	0.002	0.000	0.412
Southern Europe	Jun-Sep	0.001	0.000	0.313
X12393505				
Step 1				
	-	0.047	0.015	0.030
Step 2				
Northern Europe	Mar-May	0.007	0.002	0.005
Northern Europe	Jun-Sep	0.007	0.002	0.005
Southern Europe	Mar-May	0.014	0.005	0.009
Southern Europe	Jun-Sep	0.010	0.004	0.007
X194973				
Step 1				
	-	0.040	0.007	0.006
Step 2				
Northern Europe	Mar-May	0.006	0.001	0.001
Northern Europe	Jun-Sep	0.006	0.001	0.001
Southern Europe	Mar-May	0.011	0.002	0.002
Southern Europe	Jun-Sep	0.009	0.001	0.001
X195023				
Step 1				
	-	0.135	0.134	0.018
Step 2				
Northern Europe	Mar-May	0.022	0.021	0.003
Northern Europe	Jun-Sep	0.022	0.021	0.003
Southern Europe	Mar-May	0.041	0.040	0.005
Southern Europe	Jun-Sep	0.031	0.031	0.004

Step 3 estimate for metabolite X195023

In the EFSA evaluation for florpyrauxifen-benzyl, an aquatic toxicity endpoint for the metabolite X195023, which is the common industrial chemical benzyl alcohol, was not available, so a worst-case RAC of 0.012 µg/L, based on the parent value, was assigned. From the step 1-2 calculations for this metabolite, exceedances of this value were calculated. As a worst-case estimate of a step 3 determination, the maximum parent Step 3 value of 0.010 µg/L was converted by taking the maximum amount found in the photolysis study (81.5 molar percent), along with an molecular weight factor of 108.1/439.2. This yields a worst-case estimate of 0.010 * 0.815 * 108.1/439.2 = 0.002 µg/L, which is below the parent RAC. Since this is a worst-case estimate, the risk is acceptable.

8.8.2.2 PEC_{sw} of F7B-39-30

FOCUS drift calculator incorporated in SWASH was used to calculate PECsw for F7B-39-30 for pond, ditch and stream scenarios, considering the default FOCUS distances, no-spray buffer zones of 5 and 10 m, as well as drift-reducing nozzles from 0 to 90%. Only single application rates were considered for the calculation.

Table 8.8-17: PECsw for F7B-39-30 on sugar beet

Nozzle reduction	Use No.	PEC_{sw} of product (µg/L)										
		Application rate		FOCUS default distance			5 m buffer			10 m buffer		
		(L product/ha)	(g product/ha) *	Pond	Ditch	Stream	Pond	Ditch	Stream	Pond	Ditch	Stream
None	**1, 5**	0.08	74.0	0.016	0.393	0.306	0.014	0.129	0.129	0.010	0.068	0.068
	2, 5	0.04	37.0	0.008	0.197	0.153	0.007	0.064	0.064	0.005	0.034	0.034
	3, 5	0.026	24.1	0.005	0.128	0.100	0.005	0.042	0.042	0.003	0.022	0.022
	4, 5	0.02	18.5	0.004	0.098	0.077	0.004	0.032	0.032	0.003	0.017	0.017
50%	**1, 5**	0.08	74.0	0.008	0.197	0.153	0.007	0.064	0.064	0.005	0.034	0.034
	2, 5	0.04	37.0	0.004	0.098	0.077	0.004	0.032	0.032	0.003	0.017	0.017
	3, 5	0.026	24.1	0.003	0.064	0.050	0.002	0.021	0.021	0.002	0.011	0.011
	4, 5	0.02	18.5	0.002	0.049	0.038	0.002	0.016	0.016	0.001	0.009	0.009
75%	**1, 5**	0.08	74.0	0.004	0.098	0.077	0.004	0.032	0.032	0.003	0.017	0.017
	2, 5	0.04	37.0	0.002	0.049	0.038	0.002	0.016	0.016	0.001	0.009	0.009
	3, 5	0.026	24.1	0.001	0.032	0.025	0.001	0.010	0.010	0.001	0.006	0.006
	4, 5	0.02	18.5	0.003	0.074	0.057	0.003	0.024	0.024	0.002	0.013	0.013
90%	**1, 5**	0.08	74.0	0.002	0.039	0.031	0.001	0.013	0.013	0.001	0.007	0.007
	2, 5	0.04	37.0	0.001	0.020	0.015	0.001	0.006	0.006	0.001	0.003	0.003
	3, 5	0.026	24.1	0.001	0.013	0.010	0.000	0.004	0.004	0.000	0.002	0.002
	4, 5	0.02	18.5	0.000	0.010	0.008	0.000	0.003	0.003	0.000	0.002	0.002

* Assuming formulation density of 0.925 g/mL

Evaluation by zRMS	**PECsw (KCP 9.2.5)**
Inputs for Modelling	For the active substance florpyrauxifen-benzyl, and its metabolites: X1248137, X11438848, X11966341, X12300837, X194973, X12131932, X12393505, and X195023 the calculations presented here are accepted. Predicted environmental concentrations in surface water (PEC_{sw}) and sediment (PEC_{sed}) have been calculated for florpyrauxifen-benzyl and its metabolites after the following application of the product Rinpode (F7B-39-30) on suger beet: - 1x 0.08l product Rinpode (F7B-39-30)/ha;

	- 2x 0.04l product Rinpode (F7B-39-30)/ha; - 3x 0.026l product Rinpode (F7B-39-30)/ha; - 4x 0.02l product Rinpode (F7B-39-30)/ha considering the pathways spray drift, drainage and runoff. Input parameters used in FOCUS surface water/sediment modelling for active substance and its metabolites are correct. The surrogate crop: legume for additional scenarios (D5 and R4) important for Central Zone was assumed correctly. zRMS agrees with justification provied by Applicant in this case. The PEC_{SW} and PEC_{sed} were calculated in compliance with relevant FOCUS scenarios in stepwise procedure (Steps 1, 2 and 3). The calculations were carried out at Step 1 to Step 3 for florpyrauxifen-benzyl and two metabolites: X1143848 and X195023. For the remaining metabolites, the values of the PEC_{SW} and PEC_{sed} were calculated at Step 1 and 2. **Rinpode (F7B-39-30)** Calculations of PEC_{SW} values for formulation has been provided by Applicant. The calculations are accepted. Presented calculations may be used for risk assessment.
Agreed endpoints	Please refer to Tables from 8.8-5 to 8.8-17.
Implication for risk assessment	Please refer to Part B, Section 9 of this dRR.

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

Table 8.9-1: Summary of atmospheric degradation and behaviour

Compound	Florpyrauxifen-benzyl
Direct photolysis in air	Not applicable
Quantum yield of direct phototransformation	Not applicable
Photochemical oxidative degradation in air	DT_{50} (h): 13.488 (Atkinson model) 1.5×10^6 radicals/cm^3 OH (12h) concentration assumed
Vapour presssure (Pa)	3.2×10^{-5}
Metabolites	Not applicable

The vapour pressure at 20 °C of the active substance Florpyrauxifen-benzyl is 3.2×10^{-5} Pa. Hence the active substance Florpyrauxifen-benzyl is regarded as non-volatile. As the vapour pressure does not exceed the trigger for volatilisation no further evaluation is required.

Evaluation by zRMS	Fate and behaviour in air (KCP 9.3)
Comments	The data on the atmospheric degradation and behaviour for the active substance follows the EU assessment and is therefore agreed by the zRMS.

Conclusion for exposure assessment	The vapour pressure at 20 °C of the active substance florpyrauxifen-benzyl is $3.2x10^{-5}$ Pa. Hence the active substance florpyrauxifen-benzyl is regarded as non-volatile and the environmental concentrations in air and the transport through air are considered negligible.

Appendix 1 Lists of data considered in support of the evaluation

List of data submitted by the applicant and relied on
No new or additional studies have been submitted.

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
CA 7.1.1.1/2	Taylor, J. A., Laughlin, L. A., Balcer, J. L.	2015	Degradation of XR-848 Benzyl Ester in Four Soils under Aerobic Conditions Report No.121106 Dow AgroSciences LLC, Indianapolis, Indiana, USA GLP Unpublished	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop Protection, and Dow AgroSciences)
CA 7.1.3.1.1/1	Wang, H.,	2015	Batch Equilibrium Adsorption/Desorption of XDE-848 Benzyl Ester Study ID 130638 Dow AgroSciences LLC, USA GLP Unpublished	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop Protection, and Dow AgroSciences)
CA 7.1.2.1.2/1	Wang, H.	2016	Degradation of XDE-848 Benzyl Ester Metabolite, X12483137, in Four Soils under Aerobic Conditions Report No.150781 Dow AgroSciences LLC, Indianapolis, Indiana, USA GLP Unpublished	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop Protection, and Dow AgroSciences)
CA 7.2.1.2/1	Taylor, J. A., Laughlin, L. A., Balcer, J. L.	2014	Aqueous Photolysis of XR-848 Benzyl Ester in pH4 Buffer and Natural Water under Xenon Light Report No.120732 Dow AgroSciences LLC, Indianapolis, Indiana, USA GLP	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop

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
			Unpublished		Protection, and Dow AgroSciences)
CA 7.1.3.1.2/1	Ding, Y.,	2015	Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolites, X11438848, X11966341 and X12300837, Study ID 130567 Dow AgroSciences LLC, USA GLP Unpublished	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop Protection, and Dow AgroSciences)
CA 7.1.3.1.2/2	Lynn, K	2016	Batch Equilibrium Adsorption of XDE-848 Benzyl Ester Metabolite, X12483137, Study ID 151038 Dow AgroSciences LLC, USA GLP Unpublished	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop Protection, and Dow AgroSciences)
CA 7.2.2.3/1	Guenthenspberger, K. A., Balcer, J. L.	2015	Aerobic Aquatic Degradation of XR-848 Benzyl Ester in 2 Sediment and Pond Water System Report No.121001 Dow AgroSciences LLC, Indianapolis, Indiana, USA GLP Unpublished	N	Corteva Agriscience (bringing together the global heritage businesses of Pioneer, DuPont Crop Protection, and Dow AgroSciences)

The following tables are to be completed by MS

List of data submitted by the applicant and not relied on

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP XX	Author	YYYY	Title Company Report N Source GLP/non GLP/GEP/non GEP Published/Unpublished	Y/N	Owner

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

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
KCP XX	Author	YYYY	Title Company Report N Source GLP/non GLP/GEP/non GEP Published/Unpublished	Y/N	Owner

Appendix 2 Detailed evaluation of the new Annex II studies

No new or additional studies have been submitted.

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

Summary information relevant to PEC modeling is provided within the body of this dRR. For this reason, and due to the significant number of tables required to present the full modelling outputs, no further information is provided here in Appendix 3. Due to large volume of files, modeling files will be provided via electronic transfer.