

Document Title

Summary of the fate and behaviour in the environment
Fluopicolide + Fluoxastrobin £\$ 350 (200 + 150 g/L)

Data Requirements

ulation (EC) No 1197/2009 & Regulation (EU) No 284/2013

Document MCP

Section 9: Fate and behaviour in the environment

According to the Guidange Document SANCO/10181/2013 for an on preparing dossiers for the approval of a second s

Regulation (EC) No 1197/2009 & Regulation (E

According to the Guidange Document SANCO/10181/2013 for applicants on preparing dossiers for the approval of a circuital active substance

2020-08-11

Battelle UK Ltd

on behalf of

Bayer AG

Crop Science Division



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Version history

Date [yyyy-mm-dd]	Data points containing amendments or additions ¹ and brief description	Document identifier and version number

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CP 9 FATE AND BEHAVIOUR IN THE ENVIRONMENT

Fluopicolide was included in Annex I to Council Directive 91/414/EEC in 2010 (Commission Directive 2010/15/EU, Entry into Force on June 1, 2010). The expiration of approval of fluopicolide is May 31, 2023 (Commission Implementing Regulation (EU) 2017/1527). The Supplementary Dossier contains only data which were not submitted at the time of the Annex I inclusion of fluopicolide under Council Directive 91/414/EEC and which were therefore not evaluated during the first EL review All data which were already submitted by Bayer AG (former Bayer Cropscience) for the Annex I inclusion under Council Directive 91/414/EEC are contained in the Draft Assessment Report (DAR) and its Addenda, and are included in the Baseline Dossier provided by Bayer AG.

The formulation Fluoricolide + Fluoxastrobin F\$350 (200+150 g/L), abbreviation FLCO FX FS 350, is a flowable concentrate for seed treatment formulation FS) containing 200 g/L of fluoricolide. This formulation is registered in Europe under the trade name Scenic Gold. Fluoricolide + Fluoxastrobin FS 350 (200+150 g/L) was not representative formulation of Bayer AG for the Annex I inclusion of fluoricolide under Courtel Directive 8/414 PEC.

Fluopicolide (AE C638206) is a fungicidal active substance developed by Boyer. It is the only active substance in Europe representing a class of chemistry (pyndinylatethyl-benzamides) with a brique mode of action via delocalization of aspectative like protein of the Comyceres funds.

Fluopicolide is active against a wide range of Oomycete fungi yow dose rates against a wide range of Oomycete (Phycomycetes) diseases including downy mildews (Pseudoperonospora, Peronospora, Bremia), late blight (Phytophthora). It is also effective against downy mildews and some Pythium species causing damping off at emergence time.

Fluopicolide is redistributed via the xylem and effective disease control can be achieved from foliar and seed applications. Fluopicolide is used in mixture in a range of foliar formulations in potatoes, horticultural crops and industrial crops such as offseed.

Fluopicolide has a long track record of safe use in a large number of targeted crops within industrial crops.

Fluopicolide can be formulated with other active instredients in different types of formulations to optimise and complete its activity.

The development of esistances of Oongocetes against existing, well-established fungicide groups represent a threat for European farmers by increasing the complexity of their plant protection programs leading to severe economic impacts. With Fluor colide, farmers in EU-27 have access to a modern tool for their integrated crop protection programs, contributing to effective and sustainable management of resistance development and proserving high level of protection against Oomycete diseases.

By reducing the Oonweete damages, applications of Fluopicolide + Fluoxastrobin FS 350 on target crops contribute to the achievement of orimum emergence insuring yield and quality, thus securing sufficient supply of high quality oilseed for Enropean consumer destinations and markets abroad, for the processing industry.



CP 9.1 Fate and behaviour in soil

CP 9.1.1 Rate of degradation in soil

For information on the rate of degradation in soil please refer to Document MCS, Section 7.12.

CP 9.1.1.1 Laboratory studies

For information on laboratory studies please refer to Document MC

CP 9.1.1.2 Field studies

For information on field studies please refer to

CP 9.1.1.2.1 Soil dissipation studies

For information on field dissipation studies please re

Soil accumulation studies **CP 9.1.1.2.2**

For information on field accumulation studies ple Section 7.1.2.2.2.

CP 9.1.2 lobility in the soil

For information on mobility studies please refer

CP 9.1.2.1

to Document MCA, Section 7.1.4.1. For information or aboratory

r to Document MCA, Section 7.1.4.2. For info@nation on lysimeter studies please refe

Field leaching Gudie **CP 9.1.2.3**

For information on field leaching studies please refer to Document MCA, Section 7.1.4.3.



Estimation of concentrations in soil **CP 9.1.3**

PECsoil for fluopicolide

Predicted environmenta	al concentrations in soil (PECs)
PEC _{soil} for fluopicolide	al concentrations in soil (PECs)
Data Point:	KCP 9.1.3/01
Report Author:	
Report Year:	2020
Report Title:	Fluopicolide (FLC): Core PE soil EUR - Modelling core into document for soil
	risk assessment in Europe
Report No:	Fluopicolide (FLC): Core PE soil EUR - Modelling core into document for soil risk assessment in Europe VC/19/041L
Document No:	M-686282-01-1
Guideline(s) followed in	FOCUS Degradation Kinetics 2006 2014 7 7 4
study:	
Deviations from current	None None
test guideline:	
Previous evaluation:	No, not prey rously submitted & D & D & D
GLP/Officially recognised	No, not conducted under GLP/Officially recognised testing facilities *>
testing facilities:	
Acceptability/Reliability:	Yes V O O

Executive Summary

This summary summarises the substance data for fluoricolide and 0 is metabolites, as used for the purpose of soil sposure and soil accumulation calculations (non-scenario based Tier 1). The parameters correspond to standard EU requirements parameters correspond to standard EU requirements.

Modelling reports utilising the core info document should have the substance data presented in the

form as shown in the following table.

Compound and scenario input parameters as used for the calculation Table **9.1**.3- 1:

Compound Molac mass Fluopicolide 38339	Max occur. om soil (%)	DT ₅₀ (days)	Molar mass corr. factor (-)
Fluopicolide 38359		457.6	1
M-01 (AE@653711)	48	344	0.4954
M-02 (AE C657188) 225.56	16.4	4.4	0.588
M-03 (AE 0608000)	10.6	1000	1.0417
M-02 (AE C657188) 2 225.56 M-03 (AE 0608000) 2 399 8			



I. **Materials and Methods**

Fluopicolide (AE-6538206)

Ine (IUPAC)

The disciplore Nell 3-gibore 5-girifluoriomethyl)-2-girifluoriomethyl

M-24/945-01-1; 2005, M-255338-6(4); 01-1.). A summary of the SPO DE values derived for fluoricolide is given in worst-case un-normalised field De value of 457.6 days will be used in modelling.



Table 9.1.3-2: Summary of un-normalised SFO DT₅₀ values derived for fluopicolide from 2019; Mterrestrial field dissipation studies (651636-01-1; 2020; M-685682-01-1) 0,

	-					
	Aerobic field conditions					
Soil type	Location (country)	pH (CaCl ₂)	Depth (cm)	St. (χ²err) ₍	Method of calculation	DT ₅₀ (d)
Silt loam	Burscheid (Germany)	5.9	9 -120	13,1	SFQ	₹89.9
Clay	Great Chishill (UK)	7.8	7 0 - 120	JP.9	SEQ 4	Q 457.6 ⁰
Sandy loam	Lignieres de Touraine (France)	6.9	0 - 120	©6.9	SFO Ô	⁹ 2 8 4.4 (4
Clay loam	St.Etienne du Grès (France)	8.4	0 - 120	Q" 8 <u>.0</u> , °	SFO _C	\$70.6 _%
Clay loam	Albaro di Ronco all'Adige (Italy)	97.7	, 0 - 120	\$\tag{2.6}	SHO *	\$ 28 4Q \$
Sandy clay loam	Vilobi d'Onyar (Spain)	* 6.90°	0 % 120	9,00	®SFO _€	⊉ 08.3 ॄ 。
Loamy sand	Philippsburg (Germany)	° 6.4 ×	9 0 - 50 9	18.8	> SF®	288. %
Sandy clay loam	Rödelsee (Germany)	7.4	0-39	√18.5 ×	SFO √	256.9
Sand	Huntlosen (Germany)	4.9	_0°,≯50	16.5	SFO S	290.2
Loamy sand	Valencia (Spain)	°\\$.3	×0 - 30	2 0.5 £	SEÇÕ,	🦃 177.4
Sandy silt	Appilly (France)	7.1	0 - 🔊	96.3	ŠFO À	194.4
Sandy silt loam	Senas (France)	7.66	Q 45	2 14.3 T	♦ SFO SFO	178.6
		4	~ ~		> Worst-case	457.6

Physico-Chemical Properties
Structural formula

Common name
Chemical name (IUP OC)

Common name

dich Proben amide

Molar mass

Un-normalised SFQ DT₅₀ values for Mol (BOM) have been derived from five terrestrial field dissipation studies (M-656) 33-021, 2019b). A summary of the SFO DT₅₀ values derived for M-010s given in Table 90.3-3. A worst-case un-normalised field DT₅₀ value of 344 days will be used in the modelling.

The maximum observed occurrence in self of M-01 in laboratory studies, expressed as a molar fraction of fluopicolide, was 48% (M-555570-01-1, , 2016).



Summary of un-normalised SFO DT₅₀ values derived for M-01 (BAM) from Table 9.1.3-3: terrestrial field dissipation studies (M-650733-02-1, 2019b)

		Aerobio	c field co	nditions	^ .		
Soil type	Location (country)	pH (CaCl ₂)	Depth (cm)	St. (χ²err) (%) «	Method of calculation	∯T ₅₀ (d) Çun-nerm	
Silt loam	Burscheid (Germany)	5.9	120	17.60	SFO 💍	155,0	
Sandy loam	Lignieres de Touraine (France)	6.9	ر 0 - 120	17. ©	SEO	340	
Clay loam	St.Etienne du Grès (France)	8.1_3	0 - 120	Ø10.4 。	.8PO	204	
Clay loam	Albarodi Ronco all'Adige (Italy)		0 - 120	12.0	SFO	J 156	
Sandy clay loam	Vilobi d'Onyar (Spain)	6.9	0 - 3,20	9.6	SOFO S	344	
				A.	Worst-case	344	
M-02 (PCA; AE C657188) Physico-Chemical Properties							
Common na	rmula The second secon	481 W		- A			

M-02 (PCA; AE C657188)

3-chlor 5-(tratuoronethyl) byridine-2-carboxylic acid

225,56 g sol-1

Chemical name (IUEAC)

Volar more

he aerobic degre

(2)

norme

(2) The aerobic degradation and metabolism of M 02 (PCA) in soil was investigated in the laboratory by (2017, M-581364-01-1). A summary of the Lee So val un-normalised SFO Deg T50 Vilues derived by (2020b, M-685680-01-1) for M-02 is given in Table 9.1.3 A worst-case Deg 50 value of 4.4 days will be used in the modelling.

The maximum formation of metabolite M-02 in terrestrial field dissipation studies was 16.4% (M-220477-Q-1, 1992).



Table 9.1.3- 4:	Summary of un-normalised DegT ₅₀ values de	erived for M-02 (PCA) under
	laboratory conditions (after M-685680-01-1,	2020b)

Applied compound	Study	Soil	Q	DegT ₅₀ (d) an- normalised
	26.210024.01.1	Abington	SFO	4,4
	M-219824-01-1 , 2003	Münster	SFO 🗳	, O3.5, Q
	, 2003	Sarotti	Ĵ SFO	4.44
M-02 (PCA)		Dollendorf	SFQ,	
(1 0/1)	<u>M-581364-01-1</u>	/SS //	S FO	0 91.1
	2017		SFQ Q	
			SPO 0	0 / Q / Q / Q / Q / Q / Q / Q / Q / Q /
			SPO O Worst-case	\$ 4.4 4
		, ,	<u>, </u>	

M-03 (AE 0608000)

Physico-Chemical Properties Structural formula

Chemical name UVPA

2,6-dichloso-N-{[3-chloro-5-(trifluoromethyl)yridine-2-(hydroxy)methyl}benzamide

Molar mass

g mol-1

The aerobic degradation and metabolism of Mass in soil was investigated in the laboratory by M-241188-01-1, 2003) and M 5652 9 01-1, 201 observed to form from Juopicolide in three studies (M-201230-02-1, (2<u>016).</u> In addition, M-03 was 2003; <u>M-241052-01-1</u>, 2003; **M**-655056-01-1 2019) A summary of the un-normalised DegT₅₀ values derived by MG685680-01 (2020b) for M-03 is given in Table 9.1.3- 5. A worst-case DegT₅₀ value of **1000 days** will be used in the modelling.

The maximum observed occurrence in soil of M₂0 in laboratory studies was **10.6%** (M-201230-02-1, 2003). derived by M9685689-01 D (2020) for M-03 is given in Table 9.1.3- 5. A worst-case



Table 9.1.3- 5: Summary of un-normalised DegT₅₀ values derived for M-03 under laboratory conditions (after M-685680-01-1, 2020b)

Applied compound	Study	Soil	Soil pH	Model selected	DegT50 (d) un-4
	M-201230-02-1, 2003	Münster	4.9	SFO	62:67
Fluopicolide	M-241052-01-1, , 2003	Lamberton	\$\frac{1}{2}\tag{0}	SFO C	49.3
	M-655056-01-1, 2019	Pikeville	4.5	SFO S	29.3
	<u>M-241188-01-1</u> ,	Abington Münster	7.2 ° 4.9° 4.9°	Stop OF OP	1000°
M-03	2003	Sarotti	77.1	DFQR O	©2.7b 0 0.1\$\frac{1}{2}
	M-565219-01-1, 2016		5.3	SHO D	
	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			Worst-case	1000

a – Derived from DFOP k₂ parameter fixed to conservative default value, b reseuder SFO DT₅₀ value derived as DT₉₀/3.32

II. Results and Discussion

Modelling reports utilising the core into document should have the substance data presented in the form as shown in the following table

Table 9.1.326: Compound and scenario input parameters as used for the calculation

Composind		(g/mel)	Max occur. in soil (%)	DT ₅₀ (days)	Molar mass corr. factor (-)
Fluopicolide		383.59	\$\tilde{\pi}\)100	457.6	1
M-01 (AE C65971		190.03	→ 48	344	0.4954
M-02 (AE \$5718	8)	225,96	16.4	4.4	0.588
M-03 (AE 0608000		399.58	10.6	1000	1.0417

III. Conclusion

Soil exposure and soil accumulation calculations should use the input parameters presented in this summary for all calculations.

Assessment and conclusion by applicant:

The modelling report was conducted according to FOCUS Degradation Kinetics (2006, 2014) and is considered valid to assess trigger and modelling endpoints for fluopicolide and its metabolites in soil under laboratory conditions.



Data Point:	KCP 9.1.3/02
Report Author:	
Report Year:	2020
Report Title:	Fluopicolide (FLC) and metabolites: PECsoil EUR - Use in potatoes, lettuce and oil
	seed rape (winter) in Europe
Report No:	EnSa-20-0435
Document No:	<u>M-686701-01-1</u>
Guideline(s) followed in	Guidance Document on Persistence in Soil EU Commission 9188/X 997 rev 2000
study:	and FOCUS 1997
Deviations from current	None \(\sqrt{y} \qquad \qq \q
test guideline:	
Previous evaluation:	No, not previously submitted of the subm
GLP/Officially recognised	No, not conducted under OLP/Officially recognised testing facilities
testing facilities:	
Acceptability/Reliability:	Yes O & O O A A

Executive Summary

The predicted environmental concentrations in sold (PEC_{soil}) of the active substance fluopicolide and its metabolites M-01 (AE C6537Q), M-02 (AE C657J88) and M-05 (AE 0608000) were calculated based on a first tier approach using a Microsoft Excel spreadsheet. The use of Woopicolide in oil seed rape (winter) was assessed according to Good Agricultural Practice (GAP) under Europe cropping conditions. PECsoil values were also calculated for application of fluopicolide to other crops but are not included here as the formulation FIG+FXASC 350 will be used exchangely as seed treatment on oilseed rape.

Calculations assumed an even distribution of the compound in upper 0 - 5 cm soil layer following application and a soil density of 1 g/cm³.

An overview of maximum PECsoil values of fluoricolide and its metabolites for all use patterns under consideration of shows in Table 9.1.9-7.

Table 9.13-7: Maximum PE Croil of fluopicolide and its metabolites for the uses assessed

Use pattern		y Z	Fluopicolide (mg/kg)	(mg/kg)	M-02 (mg/kg)	M-03 (mg/kg)
Oil Seed Rape	(Minter), P×	12@a.s./ha	Q.916 Q	0.004	0.002	0.002

The accumulation potential of fluoricolide and its metabolites M-01 (AE C653711), M-02 (AE C657188) and M-03 (AE 0608000) after long term use was also assessed, employing the larger soil depth for the calculation of the background concentration in cases where tillage is relevant. The results are presented in Table 9-1/3-8. Prease note that for technical reasons, accumulation calculation is performed and reported for all substances even if they do not possess accumulation potential due to short half-life.

Table 9.134 8: PECsoil of fluopicolide and its metabolites for the uses assessed, taking the seffect of accumulation into account

Use pattern *	PECsoil	Fluopicolide (mg/kg)	M-01 (mg/kg)	M-02 (mg/kg)	M-03 (mg/kg)
Oil Seed Rape (winter)	plateau (20 cm)	0.005	<0.001	<0.001	0.002
1 × 12 g a.s./ha	total	0.021	0.005	0.002	0.003



I. Materials and Methods

The predicted environmental concentrations in soil (PEC_{soil}) of the active substance fluopicolide and its metabolites M-01 (AE C653711), M-02 (AE C657188) and M-03 (AE 0608000) were calculated based on a first tier approach using a Microsoft[®] Excel spreadsheet. The use of fluopicolide in our seed rape (winter) was assessed according to Good Agricultural Practice (GAP) under Europe sopping conditions. Calculations assumed an even distribution of the compound in upper 0 - 5 cm/soil layer following application and a soil density of 1.5 g/cm³.

The use of fluopicolide was assessed according to the Good Agricultural Practice (GAP) assummarised below.

Table 9.1.3-9: Application data of fluopicolide according to the use pattern in Europe

Individual crop	FOCUS crop	Rate Interval (days) Plant BBCI Teaching soil (g a.s./ha)
Oil Seed Rape (winter)	Oil seed rape (winter)	

The calculations were based on the maximum intended application rate together with the maximum intended number of applications per season and (for multi-application sequences) the minimum interval between the applications. Crop interception was taken into account according to the BBCH growth stage, as recommended by FOCUS (2014).

For metabolite(s), the (pseudo) application rate is calculated based on the maximum amount of the metabolite observed in soil degradation studies, the interception and the molar mass correction are summarised in Table 9.1.3-10 and Table 9.1.3-11

Table 9.1.3-10: Summary of properties for metabolite rate calculation

	Unit	6. K	ÇAE C6\$3711	M-02 (AE C657188)	M-03 (AE 0608000)
Molar mass O Corr. factor Max occan soil	(g/mol)	383.59	190.03 0.4954 489	225.56 0.588 16.4	399.58 1.0417 10.6

Table 9.1.3- 11: Calculation of metabolite application rates (# = application number)

		Fluosicolide (g.a.s./ha)	M-01 (g/ha)	M-02 (g/ha)	M-03 (g/ha)
Oil Seed Rape (winter), 1-12	g 🏚 s./ha 🗷 1	12	2.85	1.16	1.33

Substance parameters used as input in the calculations are based on substance parameters whose derivation is described in detail in the modelling core info document (KCP 9.1.3/01). The modelling parameters used for the calculations are given in Table 9.1.3-12.

Table 9.63-120 Compound and scenario input parameters as used for the calculation

Compound & S	Molar mass (g/mol)	Max occur. in soil (%)	DT50 (days)	Molar mass corr. factor (-)
Fluopicolide	383.59	100	457.6	1
M-01 (AE C653711)	190.03	48	344	0.4954



M-02 (AE C657188)	225.56	16.4	4.4	0.588
M-03 (AE 0608000)	399.58	10.6	1000	1.0417
Soil bulk density	1.5 kg/L			
Soil mixing depth	5 cm			ŽŽ (
Tillage depth for plateau (if relevant)	20 cm		Ò	

The information which mixing depths are employed for individual uses assessed in this report is provided in Table 9.1.3-13.

Table 9.1.3- 13: Mixing depths used for plateau calculation

Use pattern		Pa teau mixin		N C	
Oil Seed Rape (winter)	Ø.	20 cm	\$ NO	Z.	

The details of the calculation can be found below

Parent compound

1st tier estimation of the initial PEC_{soil} concentration is done using the equation

$$\mathcal{L}_{PEC} = \underbrace{\mathbf{r}_{soil} \cdot \mathbf{r}_{soil}}_{\mathbf{r}_{soil}} \cdot \mathbf{r}_{soil} \cdot \mathbf{r}_{soil}$$

with A being the nominal single field application rate, f the fraction reaching soil surface (taking into account crop interception factors according to EQUUS) of soil the dry soil back density, and d the thickness of the soil layer.

In single application scenarios, the initial PECoil value is equal to the overall maximum. For multiple (n) applications with constant application, rate scrop interception, and application interval, the maximum PECoil can be written as

$$\underbrace{PEC_{\text{soil}} \cdot \mathbf{d}}_{\mathbf{p}_{\text{soil}} \cdot \mathbf{d}} = \underbrace{\frac{\mathbf{A} \cdot \mathbf{f}}{\mathbf{p}_{\text{soil}} \cdot \mathbf{d}}}_{\mathbf{p}_{\text{soil}} \cdot \mathbf{d}} \cdot \underbrace{\frac{\mathbf{p}_{\text{soil}} \cdot \mathbf{g}_{\text{soil}}}{1 - \mathbf{A} \cdot \mathbf{k} \cdot \Delta t}} \tag{2}$$

where Δt the application interval and k is the first order degradation rate, calculated from the soil half-life (DT₅₀) as 0

$$\mathbf{K} = \frac{\ln 2}{\nabla T_{50}}$$
 (3)

For multiple (n) applications with variable application rate, crop interception, or application interval, the PEC_{soil} just where the application of can be calculated stepwise as

$$PEC(i)_{soil,max} = \frac{A(i) \cdot f(i)}{\rho_{soil} \cdot d} + PEC(i)_{soil,co}$$
 (4)

where PEC_{oil,co} represents the residue from the preceding applications at the time of the actual application. For the first application, PEC_{soil,co} is zero, for the following applications it can be written as



$$PEC(i)_{soil,co} = PEC(i-1)_{soil} \cdot e^{-k \Delta t(i)}$$
(5)

with $\Delta t(i)$ being the time interval between applications (i-1) and (i). PEC_{soil,max} is then defined as the maximum of the individual PEC_{soil} values.

$$PEC_{soil,max} = max(PEC(i)_{soil,max})$$

Metabolites

Maximum soil concentration of a metabolite is calculated in a similar manner to that of the parent compound, taking into account the maximum amount of the metabolite observed in soil (X_{met,max}) as well as the different molar masses of the parent (M_{par}) and metabolite (M_{met}).

The value of the initial metabolite concentration PE@bil.met. Calculated using

where PEC_{soil,par} is the respective initial parent concentration.

For a single application, the $PEC_{soil,met}$ value is equal to $PEC_{soflmax,met}$ For multiple applications, the maximum metabolite soil concentration has to be calculated using the equations (4) - (6) given in the previous section, with the parent disapation rate replaced by that of the metabolite, and with maximum metabolite occurrence in soil and different molar masses of the parent and metabolite taken into account.

Concentrations over time

For first-order kinetics with a degradation rate kane decrining DEC values at time t after the maximum can be calculated by

$$PEC(t) = PEC_{max} \cdot e^{-k\Delta}$$
 (8)

For a better comparison of exposure and effect that time-weighted average concentrations (TWA) may be useful For first-order kinetics, the TWA are given by the following formula.

$$TWA(t) = PEC_{max} \cdot \frac{1}{k \cdot t} \cdot (1 - e^{-k t})$$
(9)

Accumulation after long term use

Potential accompulation after long term use is also assessed, based on the maximum PEC_{soil,max} concentration of the respective compound, obtained as described before.

In case of a single application (or a multiple application sequence leading to the maximum PEC_{soil} after the last application), it can be shown that the maximum concentration in soil after perpetual use (PEC_{soil,acce}) can be expressed as

$$PEC_{soil,accu} = PEC_{soil,max} \cdot \frac{1}{1 - e^{-k \cdot t}}$$
 (10)



where t is the number of days between two events where PEC_{soil,max} is reached, *i.e.*, 365 days for yearly applications, 730 days for bi-yearly applications, *etc*. This PEC_{soil} value is based on a normal mixing depth. In the case of a multiple application sequence leading to the maximum PEC_{soil} before the last application another approach has to be used.

The concentration in soil after an infinite number of applications and infinitely before to application in the last year (the so called plateau concentration PEC_{plateau}) can be written as

$$PEC_{plateau} = PEC_{soil,accu} \underbrace{d}_{daccu} \cdot e^{-k \cdot t} \underbrace{d}_{11}$$

This formula can take the effect of deep soil tillage (or another mixing process) into account by distributing the soil residue amongst larger amounts of soil (larger soil mixing depth days) of, e.g., 20 cm). In the absence of such mixing process, the factors involving mixing depth cancel out.

The total PEC_{soil} taking the effect of accumulation into account is then the sum of PEC_{plateau} and the maximum PEC_{soil}, as defined previously.

The plateau concentration is driven by the dissipation DT₅₀ in soil The ratio between maximum PEC_{soil} due to actual application and the respective plateau concentration (Paking effect of tillage into account here) can be written as

$$\frac{\text{PEC}_{\text{plateau}}}{\text{PEC}_{\text{soil,max}}} \frac{e^{-\mathbf{k}\cdot\mathbf{t}}}{1\sqrt{e^{-\mathbf{k}\cdot\mathbf{t}}}} \frac{\mathbf{d}}{\mathbf{d}_{\text{acca}}} \tag{13}$$

Inspection of Equation (13) shows that this ratio is independent of the application rate. For a DT_{90} of less than a year the plateau concentration is marginal (3% of actual PEC soil, max for d=5 cm and $d_{accu}=20$ cm). We is thus deemed appropriate to neglect the plateau concentration in such a case.

Complex application patterns

If the maximum PEC in value in a multiple application sequence is reached before the last application (e.g., due to the effects of varying plant interception) a slightly modified calculation procedure has to be used.



Let us assume that the length of the application sequence (the number of days between the first and last applications) is Δt . The maximum concentration in soil after continual use (PEC_{soil,accu}) can be expressed as

$$PEC_{soil,accu} = PEC_{soil,last} \cdot \frac{1}{1 - e^{-k \cdot t^*}}$$

where PEC_{soil,last} is the concentration in soil after the last application in the whole sequence and this the number of days between two events where PEC_{soil,last} is reached minus the length of the application sequence, *i.e.*, $t^*=365-\Delta t$ days for yearly applications $t^*=730-\Delta t$ days for bi-yearly applications, etc. The same approach (replacing t by t^*) is used for all the steps described in the previous section. Other parts of the calculation are not affected.

This provides a conservative assessment since the degradation of the compound to soil is assurated to happen for a shorter time than in reality.

II. Results and Discussion

Detailed results (maximum, short-terp and tong-term PEC and TWA, and accumulation values) for individual uses are provided in Table 9.2.4014 to Vable 9.2.4-17.

Table 9.1.3- 14: PECsoil of fluoricolide oil seed rape (winter), 1 2 2 2.8.1/ha, 0% interception

			~~				
PECsoil (mg/kg)		On seed water)					
		Angle and	plication	Multinle a	pplications		
	24 h 0 2 d	Actual	TWOA 0.016 0.016 0.016 0.016		TWA		
Initial රී		Q 0.016	Y	0.016	-		
Short term	24 h	Q.916 Q	≫0.01 6 ₽	0.016	0.016		
	24 h	0.016 0.016 0.016 0.016	© 0.01© ₄	0.016	0.016		
Long term		0.016	0.016 0.016 0.016 0.016	0.016	0.016		
Long term	Ta S		0.016	0.016	0.016		
	74 d 9 21 d 9 28 d 9 Q d 9	Q 016	0.01	0.016	0.016		
	21 d\ (2)	′ _~ @.015∜″	0.016	0.015	0.016		
Ö	28 d &	© 0.015°	© 0 9 16	0.015	0.016		
~	Q'd S	© 0.0¥5 ©	©.016 0.015	0.015	0.016		
	₽\$0 d © _ %	7 ago 15 %	©0.015	0.015	0.015		
<i>A</i>	100000	Q0.014&	0.015	0.014	0.015		
Photeau cor) <u>-</u>	0.005	-		
<u> </u>	PF Caccinaulation	Ø 021 ×	_	0.021	_		
(PECact	+ PEConil plateau)	Ø.021	_	0.021	-		
(PECact		Ø.021 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7					



Document MCP – Section 9: Fate and behaviour in the environment Fluopicolide + Fluoxastrobin FS 350

Table 9.1.3-15: PECsoil of M-01, oil seed rape (winter), 1 × 12 g a.s./ha, 0% interception

PECsoil (mg/kg)		Oil Seed Rape (winter)				
		Single ap	plication	Multiple a	pplications	
		Actual	TWA	Actual	TWA O	
Initial		0.004	-	0.004	~ - X	
Short term	24 h	0.004	0.004	√ . 004	0.00	
	2 d	0.004	<i>№</i> 3.004	₹ 0.004	0.004	
	4 d	0.004	7 0.004	© 0.004 C	0.004, V	
Long term	7 d	0.004	0.004	0.004	\$\infty 0.004\text{\$\infty} \text{\$\infty}	
	14 d	0.004	0.004	0.004 \bigcirc	0.004	
	21 d	0.004	0.004	0.00	\$\ 0.004 \{\sigma}	
	28 d	0.004	0.004	0.004 \C	Ø.004	
	42 d	0.003	0.064 ×	y 69.003 °C	~~~0.00 4 ~~	
	50 d	0.000	0.004	©0.003	0.004	
	100 d	0,003	© 003 ©	0.003	9 9 9 9 9 9 9 9 9 9	
Plateau o	concentration (20 cm)	₹0.001	~ - ~ é	<00001 _% ,	\$ - X	
	after year 4					
	PECaccumulation	0.9005 Q	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0.00	~ -	
(PECa	ct + PECsoil plateau	0.000				

Table 9.1.3- 16: PECsoil of M-02, oil seed rape (winter), 12 12 g a.s./ha-0% interception

	* * * * * * * * * * * * * * * * * * *	· y		. 9	<i>)</i>	
PECsoil (mg/kg)	, Ø 0	Oil Seed Rape (winter)				
	**/	Single ap	prication (Multiple applications		
	24 h	Single ap	TWA	Aetual	TWA	
Initial		© 0.002, s		Ø.002 Ø.001	-	
Short term	24 h	0.004 0.004 0.001 0.001	9 .001	0.001	0.001	
~	2d 0) Q .901 &'	°0.001€	0.001	0.001	
<u> </u>	7 4 d 2 7 d	4 <0.00 t	\$\infty 0.00P	< 0.001	0.001	
Long term	0 4 d ♥	<0.000	(C) 001 0	< 0.001	< 0.001	
	Ja d			< 0.001	< 0.001	
(S)	%21 d % √	Q :001	< 0.008L2	< 0.001	< 0.001	
	\$\frac{1}{28} d^{\frac{1}{2}} \text{3}	~~~0.00 1 ~~	l ~≫ < 0.6 10 1	< 0.001	< 0.001	
Ĉ	28 d 42\d	0.001 0.000 0.000 0.000 0.000	< 0.001	< 0.001	< 0.001	
€ -4	Øďd Ŝ	<0.001	0.001 < 0.001	< 0.001	< 0.001	
	0100 d >	9 .001	< 0.001	< 0.001	< 0.001	
Plateau cor	21 d 22 d 24 d 24 d 26 d 26 d 26 d 26 d 26	£0.00£	<i>w</i> -	< 0.001	-	
	after year 0		J			
- C	RECaccumulation	/ 60002 °°	=	0.002	-	
« [≪] (PECact	₩FECson plateal					
(W)						
ŐY .		, Y				
Ö S		¥				
	A ~					
	~					
Š						
-						



Table 9.1.3- 17:	PECsoil of M-03, oil seed rape (winter), 1 × 12 g a.s./ha, 0% interception
-------------------------	--

PECsoil (mg/kg)		Oil Seed Rape (winter)					
		Single ap	plication	Multiple applications			
		Actual	TWA	Actual	ŢŴA Ó		
Initial		0.002	-	0.002	& - X		
Short term	24 h	0.002	0.002	√ . 002	0.00		
	2 d	0.002	<i>(</i> 200.002	₹ 0.002	Q.002 Q		
	4 d	0.002	7 0.002	© 0.002 C	0.002		
Long term	7 d	0.002	0.002	0.002	~~0.00 ~		
	14 d	0.002	0.002	0.0020	$\bigcirc \bigcirc $		
	21 d	0.002	0.002	© 0.002 0 0.002	√ 0.002 √		
	28 d	0.002			9 .002 "		
	42 d	0.00 2 0.00 2	6 0.00 ×) ⁹ ₄ 09002 (5)	0.002		
	50 d	0.002	0.002 V 0.002	~~0.002~~~	0.002		
	100 d	0,002	0,002 0,002	0.002	\$ \$\$\$\$\$002 \$\{\circ\}\		
Plateau	concentration (20 cm)	, M 6.	~ - ~ é	0002	\$ - X		
	after year 10						
	PECaccumulation	0.903	Z - Z	0.00			
(PEC	act + PECsoil plateau			0.00			

An overview of maximum PECSoil values of fluopicalide and its metabolites focall use patterns under consideration is shown in Table 9.1.3-18.

Table 9.1.3-18: Maximum PECsoil of Quopicolide and its metabolites for the uses assessed

Use pattern	~~	Fluopico (mg/kg	olide M-01 O	√	M-03 (mg/kg)
Oil Seed Rape (vo	nter), 🔊 12 g a.s	/ha 0.07	0.004	0.002	0.002

The accumulation potential of fluopicolide and its metabolites M-01 (AE C653711), M-02 (AE C6571880 and M-03 (AE 0608000) after long terro use was also assessed, employing the larger soil depth for the calculation of the background concentration in cases where tillage is relevant. The results are presented in Table 9.1.3- 19 Please note that for technical reasons, accumulation calculation is performed and reported for all substances, even if they do not possess accumulation potential due to short half-life.

Table 9.1.3-19: PECsoil of fluoricolide and its metabolites for the uses assessed, taking the effect of accumulation into account

Use pattern	PECsoil	Flacalida	M-01 (mg/kg)	M-02 (mg/kg)	M-03 (mg/kg)
Oil Seed Rape winte	ptateau (20 cm),	0.005	< 0.001	< 0.001	0.002
1 10 10	U 6 total of	0.021	0.005	0.002	0.003

III. Conclusion

The predicted environmental concentrations in soil (PEC_{soil}) of the active substance fluopicolide and its metabolites M-01 (AE C653711), M-02 (AE C657188) and M-03 (AE 0608000) were calculated for use in oil seed rape (winter).



The risk assessment report was conducted according to FOCUS (2014) and is considered valid to assess predicted environmental concentrations in soil (PEC_{soil}) for fluopicolide and its metabolites following application to oilseed rape (winter).

PECsoil for fluoxastrobin

PEC _{soil} for fluoxastrobi	
Data Point:	KCP 9.1.3/03
Report Author:	
Report Year:	2020
Report Title:	Fluoxastrobin (FXA): PECSoil EUR - Use in oil seed rape winten in Europe
Report No:	EnSa-20-0437
Document No:	<u>M-687159-01-1</u>
Guideline(s) followed in	Guidance Documnet on Persistence on Soil OU Commission 9188/VI/97 rec \$ 2000 °
study:	and FOCUS 1997
Deviations from current	None Of the State
test guideline:	
Previous evaluation:	No, not previously submitted 25 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
GLP/Officially recognised	No, not conducted under GLP/Officialty, recognised testing facilities
testing facilities:	
Acceptability/Reliability:	Yest / So I So

Executive Summar

The predicted environmental concentrations in soil (PEC soil) of the active substance fluoxastrobin were calculated based on a first tier approach using a Microsoft Excel spreadsheet. The use of fluoxastrobin in oil seed rape (winter) was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Calculations assumed an even distribution of the compound in upper 0,5 cm soil layer following application and a soil density of 1.5 g/cm³.

The maximum PECsoil values of fluoxostrobin for all use patterns under consideration was 0.012 mg/kg.

I. Material and Methods

The predicted environmental concentrations in soil (PEC soil) of the active substance fluoxastrobin were calculated based on a first tier approach using a Microsoft® Excel spreadsheet. The use of fluoxastrobin in oilseed rape (winter) was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Calculations assumed an even distribution of the compound in upper 0 - 5 cm soil layer following application and a soil density of 1.5 g/cm³.

The use of flooxastrobin in oilseed rape (winter) in Europe was assessed according to the Good Agricultural ractice (GAP) as summarised below.

Application data of fluoxastrobin according to the use pattern in Europe

Individual crop	FÓCUS crop	Rate (g a.s./ha)	Interval (days)	Plant interception (%)	BBCH stage (-)	Amount reaching soil (g a.s./ha)
Oilseed Rape	Oil seed rape	1 × 9	-	0	00	1 × 9.000



(winter)	(winter)			

The calculations were based on the maximum intended application rate together with the maximum intended number of applications per season and (for multi-application sequences) the minimum interval between the applications. Crop interception was taken into account according to the BCH growth stage, as recommended by FOCUS (2014).

Substance parameters used as input in the calculations are based on substance parameters whose derivation is taken from the EFSA LoEP [EFSA Scientific report 102, 13] June 2007]. The modelling parameters used for the calculations are given in Table 9 3-21.

Table 9.1.3-21: Compound and scenario input parameters as used for the calculation

Compound	Molar mass (g/mol)		(days)	Molar mass corr. factor
Fluoxastrobin	458.8	1000	119	
Soil bulk density	%√1.5 kg/12 ×		. 0 4,	
Soil mixing depth	Ø 5 cm @			
Tillage depth for plateau (if relevant)		79 0 5		y &

The information which mixing depths are employed for individual uses assessed in this report is provided in Table 9.1.3-22.

Table 9.1.3-22: Mixing depths used for plateau calculation

Use pattern			Mateau mixing depth
Oil Seed Rape (winter	4 8	Ž u	© 20 cm

The details of the calculation can be found below

Parent compound

1st tier estunation of the initial PEC_{sol} concentration is done using the equation

$$PEG_{\text{soil}} = \frac{\Delta \cdot f}{\rho_{\text{soil}}}$$
(1)

with A being the nominal single field application rate, f the fraction reaching soil surface (taking into account to point interception factors according to FOCUS), ρ_{soil} the dry soil bulk density, and d the thickness of the soil byer.

In single application scenarios, the initial PEC soil value is equal to the overall maximum. For multiple (n) application, with constant application, rate, crop interception, and application interval, the maximum PEC soil cap be written as

$$PEC_{\text{soil,max}} = \frac{A \cdot f}{\rho_{\text{soil}} \cdot d} \cdot \frac{1 - e^{-k \, n \, \Delta t}}{1 - e^{-k \, \Delta t}}$$
 (2)

where \mathfrak{F} the application interval and k is the first order degradation rate, calculated from the soil half-life (DT₅₀) as



$$k = \frac{\ln 2}{DT_{50}} \tag{3}$$

For multiple (n) applications with variable application rate, crop interception, or application interval, the PEC_{soil} just after the application (i) can be calculated stepwise as

$$PEC(i)_{soil,max} = \frac{A(i) \cdot f(i)}{\rho_{soil} \cdot d} + PEC(i)_{soil,co}$$
(4)

where $PEC_{soil,co}$ represents the residue from the preceding applications at the time of the actual application. For the first application, $PEC_{soil,co}$ is zero for the following applications it can be written as

$$PEC(i)_{soil,co} = PEC(i - 1)_{soif} e^{-k \Delta t(i)}$$

$$(5)$$

with $\Delta t(i)$ being the time interval between applications (i-1) and (i) PEC_{soo} is then defined as the maximum of the individual PEC_{soi} values.

$$PEC_{soil,max} = max(PEC(i)_{soil,max})$$
 (6)

Metabolites

Maximum soil concentration of a metabolite is calculated in a similar manner to that of the parent compound, taking into account the maximum amount of the metabolite observed in soil $(X_{met,max})$ as well as the different motar masses of the parent (M_{par}) and metabolite (M_{met}) .

The value of the initial metabolite concentration PECspilmet is calculated using

$$PEC_{\text{oil,med}} = PEC_{\text{oil,pan}} X_{\text{met,max}} \cdot \frac{M_{\text{met}}}{M_{\text{par}}}$$
(7)

where PEC_{soil par} is the respective initial parent concentration.

For a single application, the PEC_{soil} value is equal to $PEC_{soil,max,met}$. For multiple applications, the maximum metabolite soil concentration has to be calculated using the equations (4) - (6) given in the previous section, with the parent disopation rate explaced by that of the metabolite, and with maximum metabolite occurrence in soil and different molar masses of the parent and metabolite taken into account.

Concentrations over time

For first-order kineties with degradation rate k the declining PEC values at time t after the maximum can be calculated by

$$PEC(t) = PEC_{max} \cdot e^{-kt}$$
 (8)

For a better comparison of exposure and effect data time-weighted average concentrations (TWA) may be useful. For first-order kinetics, the TWA are given by the following formula.



$$TWA(t) = PEC_{max} \cdot \frac{1}{k \cdot t} \cdot (1 - e^{-kt})$$
 (9)

Accumulation after long term use

Potential accumulation after long term use is also assessed, based on the maximum PEC il, max concentration of the respective compound, obtained as described before.

In case of a single application (or a multiple application sequence leading to the maximum PEC_{soil} after the last application), it can be shown that the maximum concentration in soft after perpetual use (PEC_{soil,accu}) can be expressed as

$$PEC_{soil,accu} = PEC_{soil,max} : \frac{1}{1 - e^{-b/t}}$$
 (10)

where t is the number of days between two events where PEC_{on,max} is reached, i.e. 365 days for warly applications, 730 days for bi-yearly applications, etc. This PEC_{son} value is based on a normal flixing depth. In the case of a multiple application sequence leading to the maximum PEC. It before the last application another approach has to be used.

The concentration in soil after an infinite number of applications and immediately before the application in the last year (the so called placeau concentration $REC_{placeau}$) can be written as

$$PEC_{placeau} = PEC_{sol;accu} \cdot \frac{d}{d_{accu}} \cdot e^{-k \cdot t}$$
(11)

This formula can take the effect of deep soil tillage (or another mixing process) into account by distributing the soil residue amongst larger amounts of soil (larger soil mixing depth daccu of, e.g., 20 cm). In the absence of such mixing process, the factor involving mixing depth cancel out. The total PEC_{soil} taking the effect of accumulation into account is then the sum of PEC_{plateau} and the maximum PEC_{soil}, as defined previously.

$$PEC_{\text{soil},\text{total}} = PEC_{\text{plateau}} + PEC_{\text{soil},\text{max}}$$
 (12)

The plateau concentration is driven by the dissipation DT_{50} in soil. The ratio between maximum PEC_{soil} due to actual application and the respective plateau concentration (taking effect of tillage into account here) can be written as

$$\frac{PEC_{plateau}}{PEC_{soil,max}} \frac{e^{-k \cdot t}}{1 - e^{-k \cdot t}} \cdot \frac{d}{d_{accu}}$$
(13)

Inspection of Equation (13) shows that this ratio is independent of the application rate. For a DT_{90} of less than a year, the plateau concentration is marginal (< 3% of actual $PEC_{soil,max}$ for d = 5 cm and $d_{accu} = 20$ cm). We thus deemed appropriate to neglect the plateau concentration in such a case.

Complex application patterns

If the maximum PEC_{soil} value in a multiple application sequence is reached before the last application (e.g., due to the effects of varying plant interception), a slightly modified calculation procedure has to be used.

Let us assume that the length of the application sequence (the number of days between the first and



Æ.

last applications) is Δt . The maximum concentration in soil after continual use (PEC_{soil,accu}) can be expressed as

$$PEC_{soil,accu} = PEC_{soil,last} \cdot \frac{1}{1 - e^{-k \cdot t^*}}$$

where PEC_{soil,last} is the concentration in soil after the last application in the whole sequence and it is the number of days between two events where PEC_{soil,last} is reached minus the length of the application sequence, *i.e.*, t*=365-\Delta t days for yearly applications, etc. The same approach (replacing t by t*) is used for all the steps described in the previous section. Other parts of the calculation are not affected.

This provides a conservative assessment since the degradation of the compound in soil is assumed to happen for a shorter time than in reality.

II. Results and Discussion

Detailed results (maximum, short-term and long-term PEC and TWA, and accumulation values) is provided in Table 9.1.3-23.

	• <i>@</i> ,	<u>, Lj. O</u>		^\\' \ \'C	7 20	Co.
PECsoil (mg/kg)		ν _Λ .	Oil Se	ed Rape∕(w	Ø í	
		Sing	e application \		Multiple a	pplications
		Actual	PWA.		Actual	TWA
Initial		~ (//n ~	.y .w	0	N.	
Initial Short term	246 24d	× 0.012,	0.012 0.012 0.012 0.012 0.012		D)	
Ö	2\d \%	0.0\2 0.0\2	0.012			
Long term	\$# d ○ (Q.912	0.012 0.012 0.019			
	7 d 🖑 🎇	0.012	0.019	L		
Long term	14cd &	0.012	00012			
	20 d S	0.011		\cap "		
*	7 d	©0.001 ©0.009 0.009	0.013 0.013	7		
Ŷ	42 d\square \qquare \qquare	0.009 0.009	0.01			
~	50\d	≪√`0 0409 [©]	1 (4 (3) 1 (7)			
	28 d	0.009 0.009 0.009 0.001	\$9.009			
Platen conce	#tration 200 cm D	/ / ‱µ ∩∩ 1 ∧	y 🎤 -			
. 4	Anter year 2					
PE (PECact + B	Coccumination	© 0,012	· -			
(PECact + P	Csoil plateau	0.012				

An overview of maximum PECsoil values of Tuoxastrobin for all use patterns under consideration is shown in Table 2.1.3-24.

Table 9.1.3. 4: Maximum PECs of fluoxastrobin for the uses assessed

Use pattern	Fluoxastrobin (mg/kg)
Oil Seed Rape (winter), 1 × 9 g a.s./ha	0.012

The accumulation potential of fluoxastrobin after long term use was also assessed, employing the larger soil depth for the calculation of the background concentration in cases where tillage is relevant.



The results are presented in Table 9.1.3-25.

Table 9.1.3- 25: PECsoil of fluoxastrobin for the uses assessed, taking the effect of accumulation into account

Use pattern	PECsoil	Fluexastrobin @(mg/kg)
Oilseed Rape (winter) 1×9 g a.s./ha	plateau (20 cm)	<0.001

III. Concarion

The predicted environmental concentrations in soil (PEC_{soil}) of the active substance floxastrobin vere calculated for use in oil seed rape (winter).

Assessment and conclusion by applicant

The risk assessment report was considered according to FOCUS (2014) and is considered valid to assess predicted environmental concentrations in soil (PEC) for fluorastrobias in oilseed rape (winter).

CP 9.2 Fate and behaviour inwater and sediment

CP 9.2.1 Aexobic mineralisation in surface water

For information on reposite mineralisation in surface vater studies, blease refer to Document MCA, Section 7.2.2.2.

CP 9.2.2 Water/sediment study

For information on water/section studies please offer to Document MCA, Section 7.2.2.3.

CP 9.2.3 Irradiated water/sediment study

For an formation on irradiated water/sediment studies please refer to Document MCA, Section 7.2.2.4.

CP 9.2.4 & Estimation of concentrations in groundwater

CP 92.4.1 Calculation of concentrations in groundwater

Predicted environmental concentrations in groundwater (PEC_{GW})



Data Point:	KCP 9.2.4.1/01
Report Author:	
Report Year:	2020
Report Title:	Fluopicolide (FLC): Core PECgw EUR - Modelling core info document for
	groundwater risk assessment in Europe
Report No:	VC/19/041J
Document No:	M-688396-01-1
Guideline(s) followed in	FOCUS Degradation Kinetics 2006 and 2014
study:	
Deviations from current	None & A A A A A
test guideline:	
Previous evaluation:	No, not previously submitted &
GLP/Officially	No, not conducted under Gov/Officially recognised testing facilities
recognised testing	
facilities:	
Acceptability/Reliability:	Yes O' (A A

Executive Summary

This document summarises the sulpstance data for fluencolide and its metabolities as used for the purpose of groundwater risk assessment. The following deterministic posticide fate models were used in the calculations:

• FOCUS PEARI.
• FOCUS PEARI.
• FOCUS MACRO

The parameters correspond tostandard EU requirements.

Modelling reports fittlisting this core into document should have the substance data presented in the form as shown in Table 9.2.4-4 and Table 9.2.4-2.



Compound input parameters for fluopicolide and its metabolites – without **Table 9.2.4- 1:** aged sorption

1						On o
Parameter	Unit	Fluopicolide	M-01	M-02	M-03*	M-05
			(AE C653711)	(AE C657188)	(AE 0608000)	(AE 1344122)
Common						
Molar mass	(g/mol)	383.59	190.03	225.56	3 9.58	253.2
Solubility	(mg/L)	2.8	2220	115000	1 0	120000
at temp.	(°C)	20	20	20 8	ري 20 ي ^م	× 28 2
Vapour pressure	(Pa)	0 (default)	0 (default)	0 (default)	0 (default)	0. Wefault
at temp.	(°C)	20	20	20 Q	20 🕏	20 V
Freundlich exponent	(-)	0.888	0.914.	0.889	0.97	Q 0.942 4
Plant uptake factor	(-)	0.5	0.35		· 10 1	, * (\$\tilde{G} \tilde{U}
Walker exponent	(-)	0.7	Ø.7	0.7	%.7 \ O	& 0.7 0 V
PEARL parameters	()					
Substance code	(-)	FLC	MOJ .	M02	₩ M03	M05
DT50	(days)	182.0	1 46 .0) 10k %	<i>0</i> ″ 1 <i>9</i> 09 √	2 2 °
Molar activ. energy	(kJ/mol)	65.4	∘. © 5.4 ∾ [©]	85.4 a	∞65.4 [©]	\$65.4 Ø
Kom	(mL/g)	155.3	~~14.0~~°	3.3	°, © 62.0€	8.1
PELMO parameters	('''	W .		, O, v		
Substance code	(-)	Fluopicolide	× Mc=01 ≪	y M202 ≥	MS•03 €	M-05
Rate constant	(1/day)	0 69 3809 ®		0.433217	0.038723	0,027506
Q10	(-)	2.58 Ø	0.004748	2.580	2.580	2.58
Koc	(mL/g)	© 267.∜	2.53	W 5.6	O 10009 (14.0
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		2401 4		. 0	*
MACRO parameters						
Substance code	(-)©	Fluopicolide		- 3	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	-
Exponent moisture	(-)	A 0.49	2° 0.49°	0.49	(° 0249°	0.49
Exponent temperature	(4/K) €	0,0948	0,0948	0-0948 🌜	0.09 48	0.0948
Parameter	Unit	₩-10	M-11/12	⊘ M-13 [©]	_ M-14	M-15
	, Ö	(A)E 1344123)	OXE 1344119/	Fluopicolide	AE 1388273)	(AE 1413903)
	. \			Mariuopeconuc-		` /
	~\\		AE 1344120)		Y	
			AE 1344120)	(23)	V	
Common			AE 1344120)		ř	
Molar mass	(g/mol)	\$\frac{1}{271} \frac{1}{27}	AE 1344120) 287.17		241.19	463.64
Molar mass Solubility	(g/mol)	271 7 100000	AE 1344120)		241.19 15800	160000
Molar mass Solubility at temp.	(\$\frac{1}{2}\text{g/L}) \tilde{\text{g}}	20	AE 1344120)	241.55 1900 2720	241.19 15800 20	160000 20
Molar mass Solubility at temp. Vapour pressure	(g/mol) (fa/g/L) (°C) (Pa)	271 17 100000 20 Codefault	AE 1344120)	241%5 1900 20 0 (default)	241.19 15800 20 0 (default)	160000 20 0 (default)
Molar mass Solubility at temp. Vapour pressure at temp.	(\$\frac{1}{2}\text{g/L}) \tilde{\text{g}}	20	AE 1344120)	241.65 1900 220 0 (default) 20	241.19 15800 20 0 (default) 20	160000 20 0 (default) 20
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent	(\$\frac{1}{2}\) (\frac{1}{2}\) (\frac{1}{2}\) (Pat) (2C)	20	AE 1344120)	241.65 1900 220 0 (default) 20 1.0	241.19 15800 20 0 (default) 20 0.942	160000 20 0 (default) 20 0.937
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor	(\$\frac{\frac}\f{\frac{\frac{\frac{\frac{\fir}}}}}{\firac{\frac{\fir}{\firin}}	20	AE 1344120)	241.65 2000 0 (default) 20 1.0 0	241.19 15800 20 0 (default) 20 0.942 0	160000 20 0 (default) 20 0.937 0
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake tagor Walker exponent	(\$\frac{1}{2}\) (\frac{1}{2}\) (\frac{1}{2}\) (Pat) (2C)	20	AE 1344120)	241.65 1900 220 0 (default) 20 1.0	241.19 15800 20 0 (default) 20 0.942	160000 20 0 (default) 20 0.937
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL patameters	(\$\frac{\frac}\f{\frac{\frac{\frac{\frac{\fir}}}}}{\firac{\frac{\fir}{\firin}}	20	AE 1344120)	241.55 1000 20 0 (default) 20 1.0 0 0.7	241.19 15800 20 0 (default) 20 0.942 0	160000 20 0 (default) 20 0.937 0 0.7
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL patameters Substance code	(\$\frac{\frac}\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fra	20	AE 1344120) 287.17 1690 20 6 (default) 20 0.7 0.7	241.25 1000 220 0 (default) 20 1.0 0 0.7 M13	241.19 15800 20 0 (default) 20 0.942 0 0.7	160000 20 0 (default) 20 0.937 0 0.7 M15
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL patameters Substance code DT50	(\$\frac{\partial \text{g}/L}{\circ} \text{2C}{\circ} \tex	20	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 MV1-2 87.6	241.35 1900 220 0 (default) 20 1.0 0 0.7 M13 20.7	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molas activ. energy	(SPg/L) (°C) (°C) (Pa) (2C) (-) (-) (-) (days) (kJ/mol)	20	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 171-2 87.6 65.4	241.65 1000 220 0 (default) 20 1.0 0 0.7 M13 20.7 65.4	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL patameters Substance code DT50 Molar activ. energy Kom	(\$\frac{\partial \text{g}/L}{\circ} \text{2C}{\circ} \tex	20	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 MV1-2 87.6	241.35 1900 220 0 (default) 20 1.0 0 0.7 M13 20.7	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters	(SPg/L) (°C) (°C) (Pa) (2C) (-) (-) (-) (days) (kJ/mol)	20 10 default 20 00 00 00 00 00 00 00 00 00	AE 1344120) 287.17 1600 20 0.7 0.7 0.7 0.7 0.7 0.7 0.	241.95 1000 220 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code	(Pay) (°C) (Pay) (C) (-) (-) (days) (kJ/mol) (mL/g)	20 Crdefault 20 20 0.7 0.7 M10 35.4 65.4 M1-10	AE 1344120) 287.17 1600 20 0 (default) 0 0.7 0 0.7 0 0.7 0 0.7 0 0.7 M-11/12	241.95 H000 20 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake faefor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant	(Pay) (Pay) (Pay) (C) (-) (days) (kJ/mol) (mL/g) (1/day)	20 Crdefault 20 20 0.7 0.7 0.7 0.7 0.5.4 0.65.4 1.1 0.0195	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 47.6 65.4 0 M-11/12 0.007913	241.55 1000 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL patameters Substance code DT50 Molas activ. energy Kom PELMO parameters Substance code Rate constant Q10	(hag/L) (°C) (Pa) (C) (C) (-) (days) (kJ/mol) (mL/g) (1/day)	20 Crdefault 20% 0 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 87.6 65.4 0 M-11/12 0.007913 2.58	241.55 1000 20 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molas activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc	(hayg/L) (°C) (Par) (C) (C) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A	20 Crdefault 20 20 0.7 0.7 0.7 0.7 0.5.4 0.65.4 1.1 0.0195	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 47.6 65.4 0 M-11/12 0.007913	241.55 1000 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc MACRO parameters	(hayg/L) (°C) (Par) (C) (C) (A) (A) (A) (A) (A) (A) (A) (A) (A) (A	20 Crdefault 20% 0 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 87.6 65.4 0 M-11/12 0.007913 2.58	241.55 1000 20 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc MACISO parameters Substance code	(hayg/L) (°C) (Par) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C	20 Codefault 20 0 0.7 0.7 0.7 0.7 0.0195 0.0195 0.0195 0.2.58 1.8	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 4 (v1-2) 87.6 65.4 0 M-11/12 0.007913 2.58 0	241.55 1000 200 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58 0	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58 9.9	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58 18.8
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc MACRO parameters	(hag/L) (°C) (Pa) (C) (C) (-) (days) (kJ/mol) (mL/g) (1/day)	20 Crdefault 20% 0 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7	AE 1344120) 287.17 1600 20 6 (default) 20 0.7 0.7 87.6 65.4 0 M-11/12 0.007913 2.58	241.55 1000 20 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58

Exponent temperature (1/K) 0.0948

* Metabolite M-03 not simulated in alkaline soils



Table 9.2.4- 2: Compound input parameters for fluopicolide and metabolites – with aged sorption



Common Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom	(g/mol) (mg/L) (°C) (Pa) (°C) (-) (-) (-)	271.17 100000 20 0 (default) 20 1.0 0	287.17 1000 20 0 (default) 20 1.0	P3) 241.55 1000 20 0 (default) 20 1.0	24019 5800 20 (default)	463.64 1600000 20 0 (default)
Molar mass Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(mg/L) (°C) (Pa) (°C) (-) (-)	100000 20 0 (default) 20 1.0 0	1000 20 0 (default) 20	1000 20 0 (default) 20	\$800 20 (default) 20	463.64 1600000 20 0 (default)
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(mg/L) (°C) (Pa) (°C) (-) (-)	100000 20 0 (default) 20 1.0 0	1000 20 0 (default) 20	1000 20 0 (default) 20	\$800 20 (default) 20	1600000 20 0 (detault)
at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(°C) (Pa) (°C) (-) (-)	20 0 (default) 20 1.0 0	20 0 (default) 20	20 0 (default) 20	20 (default) 20 20	20 (default)
Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(Pa) (°C) (-) (-)	0 (default) 20 1.0 0	0 (default) 20	0 (default) 20	(default) s	0 (decault)
at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(°C) (-) (-)	20 1.0 0	20	20	20	
Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(-) (-)	1.0 0				
Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(-) (-)	0	1.0		0.942 ك	2007 Ô
Walker exponent PEARL parameters Substance code DT50 Molar activ. energy	(-)		(1 //	1.0	0.942	0.93
PEARL parameters Substance code DT50 Molar activ. energy		0.7	0.70%			
Substance code DT50 Molar activ. energy	(-)	l	0.40			
DT50 Molar activ. energy	(-)	M10	1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	\ \S\W12 \(\int \)		(CON 415 ()
Molar activ. energy		M10	4 X 011-2	W113 ~	M14	MIS
	(days)	35.4	87.60	20.7	9.40	145:0°
Kom	(kJ/mol)	65.4	© 65. %	65/4	© 65%* (65.4
	(mL/g)	1.1		# Q* . ~	$\begin{bmatrix} 5.7 \\ 5.7 \end{bmatrix}$	6 0.9
k _{des}	(1/day)					
Fne	(-)	0 👋				
PELMO parameters		Q, u				Ç O
Substance code	(-)	MQ0 ×	M-M/12 €	* _M0≥13 _5	N F-14	<i>@</i> M-15
Rate constant	(1/day)	0.6949580 ^{*©}	0.007913	Ø3348 5 °	©073739°	9 .004780
Q10	(-)	2.58,	2.5	© 2.5%	2.58	2.58
Koc	(mL/g) α	1%	900		909	√ 18.8
MACRO parameters Substance code Exponent moisture Exponent temperature * Metabolite M-03 no. Calculation of the si M-10, M. M/M-12, Figure 9.2.4- 1:	imulated in the stance posts and the stance posts M-13, M-2	alkarine soils I. Ma aragaeters for 1 A, and M-15 i	Terials and Mo fluoricolide an is detailed as fo	ethods d its metabolitosolitos	es M-01, M-02	2, M-03, M-0
Figure 9.2.4- 1:	Degra	lation pathwa	y fer fluopico	lide in acidic s	oils	

			Å			



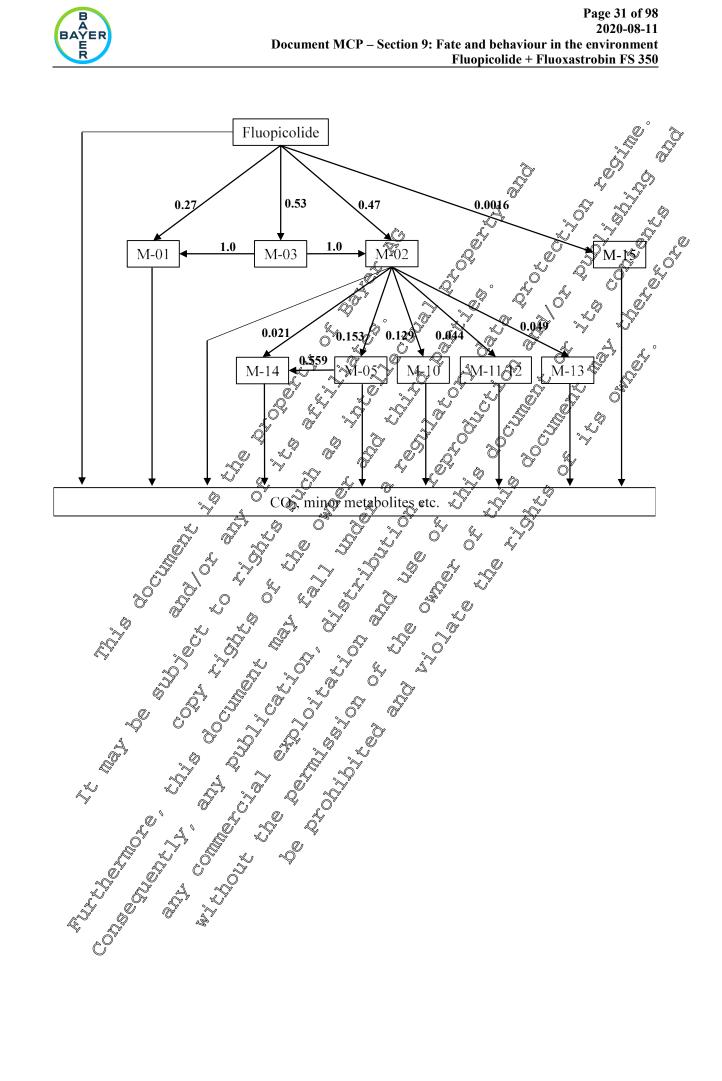
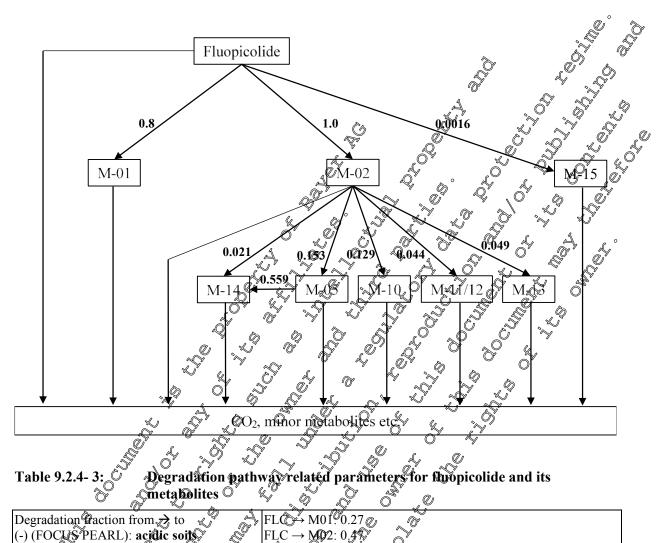




Figure 9.2.4- 2: Degradation pathway for fluopicolide in alkaline soils



Degradation fraction from to (-) (FOCLES PEARL): acidic soils	FLC → M01.0.27 FLC → M02: 0.47 FLC → M03: 0.53 FLC ← M15.0.0016 M03 → M01: 1.0 M02 → M05: 0.153 M02 → M10.0.129 M02 → M12: 0.044 M02 → M13: 0.049 M02 → M14: 0.021
(-) (FOCUS PEARL): acidic soits	$FLC \rightarrow M02: 0.4\%$
	ELC - M03; 0.53
	FLC & M15 9.0016
	$M03^{\circ} \rightarrow M01.1.0^{\circ}$
	$M03 \rightarrow M02: 1.0$
	M02 → \$\(\text{M05}: 0.\text{\$\ext{\$\text{\$\exitin}\$}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}
	M02 A M1000.129
	$NN_{1} \xrightarrow{2} NN_{1} = 2:0.044$
	$M02 \rightarrow M13: 0.049$ $M02 \rightarrow M14: 0.021$ $M05 \rightarrow M14: 0.559$
	MOS M14: 0.021
	NIO5
Degradation fraction from → to	FIG \rightarrow M01: 0.8
(-) (FOCUS PEARL): alkaline soils	$\mathbb{R}^{\mathbb{C}} \to M02: 1.0$
	FKC → M02: 1.0 FLC → M15: 0.0016 M02 → M05: 0.153
	$M02 \rightarrow M05: 0.155$ $M02 \rightarrow M10: 0.120$
	$M02 \rightarrow M10: 0.129$
	$M02 \rightarrow M11-2: 0.044$ $M02 \rightarrow M13: 0.049$
Degradation fraction from → to (-) (FOCUS PEARL): alkaline coils	$M02 \rightarrow M13: 0.049$ $M02 \rightarrow M14: 0.021$
	$M02 \rightarrow M14: 0.021$ $M05 \rightarrow M14: 0.559$
٧	19103 / 19114, 0.337



D : 1 D	
Partial DT ₅₀ /Degradation rate from \rightarrow to	Pathway 1:
(day or 1/day) (FOCUS PELMO) ^a : acidic	Active Substance \to M-02: 387.234 / 0.0017900
soils	Active Substance → M-02: 38/.234 / 0.001/900 Active Substance → M-03: 343.396 / 0.0020190 Active Substance (TDS) → M-02: 257.447 / 0.0026920 Active Substance (TDS) → M-03: 228.302 / 0.0030360 Active Substance → BR/CO2: 0 M-03 → M-02: 17.9 / 0.0387230 M-02 → M-05: 10.458 / 0.0662790
	Active Substance (TDS) \rightarrow M-02: 257.447 / 0.0026920 Active Substance (TDS) \rightarrow M-03: 228.302 / 0.0030360
	Active Substance (TDS) \rightarrow M-03: 228.302 / 0.0030360 Active Substance \rightarrow BR/CO2: 0 M-03 \rightarrow M-02: 17.9 / 0.0387230 M-02 \rightarrow M-05: 10.458 / 0.0662790 M-02 \rightarrow M-10: 12.403 / 0.0558850 M-02 \rightarrow M-14: 76.190 / 0.0090980 M-02 \rightarrow BR/CO2: 2.296 / 0.30(8930 M-05 \rightarrow M-14: 45.081 / 0.0153760 M-05 \rightarrow BR/CO2: 35.4 / 760195800
	Active Substance \rightarrow BR/CO2: 0
	$M-03 \rightarrow M-02: 17.9 / 0.0387230$
	$M-02 \rightarrow M-05: 10.458 / 0.0662790$
	$M-02 \rightarrow M-10: 12.403 / 0.0558850$
	$\begin{array}{c} \text{M-03} \rightarrow \text{M-02:} \ 17.9 \ / \ 0.0387230 \\ \text{M-02} \rightarrow \text{M-05:} \ 10.458 \ / \ 0.0662790 \\ \text{M-02} \rightarrow \text{M-10:} \ 12.403 \ / \ 0.0558859 \\ \text{M-02} \rightarrow \text{M-14:} \ 76.190 \ / \ 0.0090980 \\ \text{M-02} \rightarrow \text{BR/CO2:} \ 2.296 \ / \ 0.308930 \\ \text{M-05} \rightarrow \text{M-14:} \ 45.081 \ / \ 0.0153760 \\ \text{M-05} \rightarrow \text{BR/CO2:} \ 57.143 \ / \ 0.0121300 \\ \text{M-10} \rightarrow \text{BR/CO2:} \ 35.4 \ / \ 0.0195890 \\ \text{M-14} \rightarrow \text{BR/CO2:} \ 9.4 \ / \ 0.0737890 \\ \end{array}$
	$M-02 \rightarrow BR/C$ 2.296 / 0.30 8930
	$M-05 \rightarrow M-14: 45.081 / 0.0163760$
	$M-05 \rightarrow BROCO2: 57.143 + 9.0121300$
	M-10 → 18 CO2: 35.4 / 0 0195 800
	M-14 & BR/CO2: 9.4 0.0737 990
	$\begin{array}{c} M\text{-}02 \to M\text{-}05 \colon 10.458 \ / \ 0.0662790 \\ M\text{-}02 \to M\text{-}10 \colon 12.403 \ / \ 0.0558859 \\ M\text{-}02 \to M\text{-}14 \colon 76.190 \ / \ 0.0090980 \\ M\text{-}02 \to BR/C02 \colon 2.296 \ / \ 0.3068930 \\ M\text{-}05 \to M\text{-}14 \colon 45.081 \ / \ 0.0153760 \\ M\text{-}05 \to BR/C02 \colon 57.143 \ / \ 0.0121300 \\ M\text{-}10 \to BR/C02 \colon 35.4 \ / \ 0.0737890 \\ M\text{-}14 \to BR/C02 \colon 9.4 \ / \ 0.0737890 \\ \end{array}$
	Pathway 2:07 25 25 25 25 25 25 25 25 25 25 25 25 25
	Pathway 2:0 Active Substance — M-03: 343.396 / 00020190
,	Active Substance -> M-03: 343.396 / 0020190 & @
Ä	4 Active Substance (TDS) → M/-02: 257 447 23 0026920 3°
	Active Substance (NDS) \$\display M-03\display 228.30\display 0.00\display 360
	Active Substance (VDS) \rightarrow M-03 228.302 0.0030360 Active Substance \rightarrow BR 0002; 0 \rightarrow M-02: 17.9 \rightarrow 0.0387330 \rightarrow M-02: 17.9 \rightarrow 0.0387330 \rightarrow M-02 \rightarrow M-13: 32.653 \rightarrow 0.0212280 \rightarrow M-03 \rightarrow RP 003 1.764 0.3043410
	$M-03 \rightarrow M-02: 17.9 / 0.0387290$
	M-02 - M ₂ 9/12: 36/364 /000190690
	$M-02 \rightarrow M-9/12: 36,364 / 0.0199690$ $M-02 \rightarrow M-13: 32,653 / 0.0212280$ $M-02 \rightarrow BR/CO2: 1.764 / 0.3929410$
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\$\$\cappa 02 \rightarrow \text{BR/CO2} \cdot 1.764 \rightarrow 0.3929410
	MF02 → BR/CO2: 1.7647 0.3929410 M-11/M → BR/CO2: 87.6 / 0.6079130 M-1& → BR/CO2: 20.7 / 0.0937390
	M-11/02 → BR/CO2: 1.764 7 0.3929410 M-11/02 → BR/CO2: 87.6 / 0.0079130 M-12 → BR/CO2: 20.7 / 0.09373390
Ä Ä V	Pathway : 2 0 2 2 2
	Active Substance $\rightarrow M$ -01: 674.074 / 0.0010280
	Active Substance —M-03/343.396/ 0.0020190
	Active Substance → M-15. 113750 / 6.09E-06
	Active Substance → BF CO2; 917.339 / 0.000756
	Active Substance (TDS) → M-01: 448.148 / 0.0015470
	Active Substance (QDS) — QM-03: 228.302 / 0.0030360
	Active Substance (TDS) M-15: 75625 / 9.17E-06
	Active Substance (TDS) - BR/CO2: 609.879 / 0.0011370
9' 4	$M-03 \rightarrow M-07.17.970.0387230$
	Active Substance (TDS) $\rightarrow$ BR/CO2: 609.879 / 0.0011370 M-03 $\rightarrow$ M-07: 17.9 7 0.0387230 M-01 $\rightarrow$ BR/CO2 046 / 0.0047480 M 5 $\rightarrow$ BR/CO2 145 / 0.0047800
	1281 13 1/31 CU/2/ 173 / 0.007 / 000
Partial DT50/Degradation rate from 🖈 to	Pathway 1:
(day or 1/daw) (FOCUS PELMO)a: Qkaline	Pathway 1:  Active Substance → M-02: 182 / 0.0038090  Active Substance (TDS) → M-02: 121 / 0.0057280
soils & & &	Active Substance (TDS) → M-02: 121 / 0.0057280
	Active Substance → BR/CO2: 0
	M-02 M-05: 10.458 / 0.0662790
	$M-Q \rightarrow M-10: 12.403 / 0.0558850$
	$M = 02 \rightarrow M-14: 76.190 / 0.0090980$
\$ <u>\$</u> \$\ \Q' \$\	M ² 02 → BR/CO2: 2.296 / 0.3018930
	$M-05 \rightarrow M-14: 45.081 / 0.0153760$
	$M-05 \rightarrow BR/CO2: 57.143 / 0.0121300$
	$M-10 \rightarrow BR/CO2: 35.4 / 0.0195800$
	$M-14 \rightarrow BR/CO2: 9.4 / 0.0737390$
A O A A	
Partial DT ₅₀ /D@radation rate@om > 10 (day or 1/day) (FOCUS PELMO) alkaline soils	Pathway 2:
	Active Substance → M-02: 182 / 0.0038090
$oldsymbol{\mathbb{C}}$	Active Substance (TDS) $\rightarrow$ M-02: 121 / 0.0057280
	Active Substance → BR/CO2: 0
	$M-02 \rightarrow M-11/12$ : 36.364 / 0.0190610



	$M-02 \rightarrow M-13: 32.653 / 0.0212280$
	$M-02 \rightarrow BR/CO2: 1.764 / 0.3929410$
	$M-11/12 \rightarrow BR/CO2: 87.6 / 0.0079130$
	$M-13 \rightarrow BR/CO2: 20.7 / 0.0737390$
	Pathway 3:
	Active Substance $\rightarrow$ M-01: 227.500 / 030030470
	Active Substance $\rightarrow$ M-15: 113/50/6.09E-06
	Pathway 3: Active Substance → M-01: 227.500 / 0.9030470 Active Substance → M-15: 113750 / 6.09E-06 Active Substance (TDS) → M-01: 151.250 / 0.0045830 Active Substance (TDS) → M-01: 75625 / 9.10E-06 Active Substance (TDS) → B3 CO2: 609.87 / 0.0001370 M-01 → B10/CO2: 146 / 0.6047480 M-15 → B10/CO2: 145 / 0.0047890
	Active Substance (1DS) $\rightarrow$ M-04: 151.250 / 0.0045830 $^{\circ}$
	Active Substance (TDS) $\rightarrow$ M=50: /3023 / 9.1 05-00 $\rightarrow$ 1
	Active substance (1Ds) $\rightarrow$ 150 CO2. 609.87 9 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013 / 0.00013
	M 15 \ \mathred{Pe}/CO2: 145 / 09047890
Conversion factor from → to	
(-) (FOCUS MACRO) ^b : acidic soils	Active Substance (TDS) → M-01; 151.250 / 0.0045830 Active Substance (TDS) → M-03; 75625 / 9.105-06  Active Substance (TDS) → BOCO2: 609.87 / 0.0001370  M-01 → BR/CO2: 146 / 0.0047890
Conversion factor from $\rightarrow$ to	
(-) (FOCUS MACRO) ^b : alkaline soils	for i formation fraction of the second of th
a Calculated as $ln(2)$ / $DT50$ × formation fraction b Calculated as molar mass / molar mass predects	for Johnation fraction of the first state of the fi
b Calculated as molar mass / molar mass predected	sor Afdrmation fraction of Signature of Sign
~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	4,
	\mathbb{Q}'
$igcup_{}$	
	To a formation fraction of the first of the



Figure 9.2.4-3 PELMO simulation pathways for fluopicolide in acidic soils

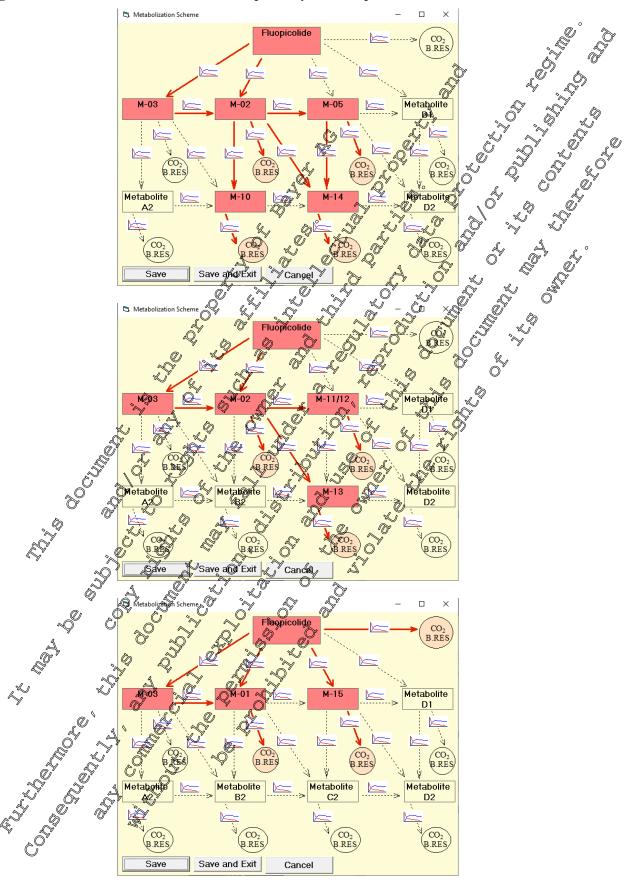
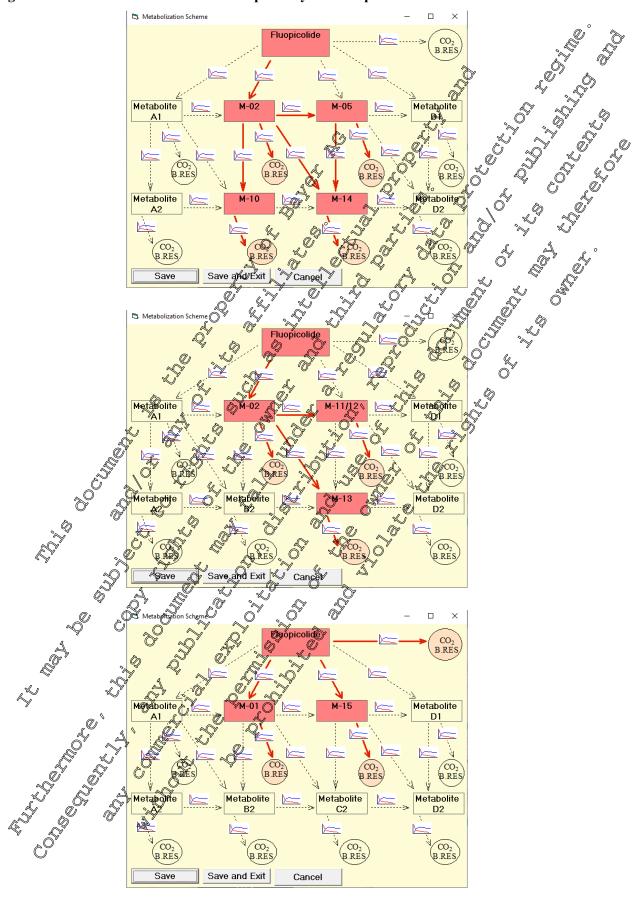




Figure 9.2.4- 4: PELMO simulation pathways for fluopicolide in alkaline soils





Fluopicolide (AE C638206)

Physico-Chemical Properties

Structural formula

F₃ CI CI CI O CI

Common name Fluopicolide (AE C638206)

Chemical name (IUPAC)

2,6-dichlor N-[[3-chlor 5-(trifluoron ethyl 2-pyridin methyl]-benzamide

Molar mass 383. 9 g m si

Vapour pressure 3.03×10 Pa at 20° C (3.1974 3.03×10 3.03×10 Pa at 20° C (3.1974 3.03×10 3.03×1

Degradation in Aerobic Soil

Laboratory studies

The aerobic degradation and metabolism of floopicolide in soil was investigated in the laboratory by M-201230-02-1, [2003], M-241049-031, [2003a], M-241052-010, [2003b]; M-241051-01-1, [2003c], M-550687-01-1, [2019], A summary of the modelling endpoint DegT₅₀ values derived for fluopicolide (KCA 7.1.2 ft./10, $\frac{1}{2}$ 68560-01), [2020], normalised to 20°C and pF2 is given in Table 92.4-4

Table 9.2.4-4: Summary of DegT₅₀ values derived for fluoricolide under laboratory conditions (after M-685680-01-1, Carnall et al., 2020)

Applied compound	Study	Svil W	Model selected	DegT50 un-normalised (d)	DegT ₅₀ normalised to 20°C and pF2 (d)
	10-2012 70 -02-1	Münster 💸	SFO	212.0	212.0
L.	, 2003	Sarotti O	SFO	191.2	191.2
	M-241049-@1-1,	Abington (non-sterile)	SFO	348.0	340.2
4	M-241051-0147,	Lamberton	SFO	1290.0	1037.9
	M-241053-01-1,	© Camberton	SFO	358.0	395.8
Fluopicolide	2003c	Pikeville	DFOP	612.9 ^a / 30.1 ^b	616.0 ^a / 30.3 ^b
		Albaro/Marcomcini	DFOP	$146.2^a / 2.8^b$	146.2ª / 2.8b
S	2 A	Great Chishill	DFOP	$312.4^a / 2.7^b$	312.4ª / 2.7b
	2550687-01-1		DFOP	155.5 ^a / 7.2 ^b	155.5 ^a / 7.2 ^b
	2016a	Mas du Coq	DFOP	216.7ª / 10.5b	193.7ª / 9.4b
6	_ 5 - 5 4	Parcey Meslay	DFOP	202.5 ^a / 8.1 ^b	202.5 ^a / 8.1 ^b
		Vilobi d'Ònyar	DFOP	93.5ª / 7.8 ^b	93.5ª / 7.8 ^b
	<u>M-555570-01-1</u> ,	Dollendorf II	DFOP	$111.4^a / 0.6^b$	111.4 ^a / 0.6 ^b



Applied compound	Study	Soil	Model selected	DegT50 un-normalised (d)	DegT ₅₀ normalised to 20°C and pF2 (d)
			DFOP	137.7 ^a / 4.2 ^b	137.7ª / 🎾 🔏
	2016b		DFOP	141.3ª / 6.30°	141.3 6.3 ^b
			DFOP	133.5ª / B 4 ^b	133.54/9.45
		Abington 2	DFOP	142. 1 ¾ 1.9 ^b	. 132.1a/3096
		Lamberton	PFOP	176,1 ^a / 2.8 ^b	745.1 1 2.3b
	M-655056-01-1,	Lignieres	D FOP	1541.4 ^a / 1.4 ^b	1449 ⁴ /1.45
	2019	Münster	∯ DFOP	170.1a / 5.3b	104.5ª/39b &
		Pikeville	DFOP &	2° 15 5 2° / 4 15°	\$129.4°\(\varphi\)3.5°\(\varphi\)
		Sarotti 2	DFOP	∘ 16/1.2ª / 1.6°	143,6°a / 1,4°
		Geometric mea	(SFO and	DFOP slow phase	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

- a Pseudo-SFO value based on slow phase of decline (calculated as ln(2)/k2 and formalised if applicable)
- a Pseudo-SFO value based on fast phase of decline calculated ln(2) W₁ and normalised in approach, c Geometric mean calculated of DegT₅₀ values from Lamberton soils prior to calculation of overall geometric mean.

Field Dissipation Studies

DegT₅₀ values for fluopicolide, normalised to 20°C and pF2. have been derived by (2020a) and M-685676-0121, (2000b) from 12 Derrestival field dissipation <u>6</u>2019a€, <u>M-2</u>08667-01-1, studies (M-651636-01-1, (2003); M-(2004); M-247948-01-1,220477-02-1, (2005a); M-(2003); M=234424-01-3\$ (2005b); N-218672-010, (2003). A summary of the modelling endpoint Deg 1% values derived for Tuopicolide is given in Table 9.2.4.5.

Summary of Deg To values (normalised to 2000 and pF2) derived for **Table 9.2.4-5:** fluopicolide from terrestrial field distration studies (after M-685675-01-1, 2020a and M-685676-01-1

,		A cerobic	Field cond	ditio@s		
Soil type	Location (country)	pH, (CaCl ₂)	(cm)	St. (χ²err) (%)	Method of calculation	DegT ₅₀ (d) norm
Silt loam	Burscheid (Sermany)	5.9	0-120	9.80	SFO	111.9
Clay	Great Charbill (LK)	7,&	P 20	11.64	SFO	216.9
Sandy loam	Ligareres de Touraine (France)	, © .9	©0-120	4.82	SFO	158.6
Clay loam	St.Etienne du Gres (France)	8.1 ₀	0-120	4.90	SFO	303.2
Clay loam	Albaso di Rosco allo dige		0-120	9.99	SFO	237.3
Sandy elay loam	Vilobra Onyar (Spain)	⁷ 6.9	0-120	6.20	SFO	166.8
Loamy sand	New Philippsburg (Germany)	6.4	0-50	9.477	SFO	199.6
Sandy clay loans	ARödels (Germany)	7.4	0-30	21.59	SFO	146.4
Sand	Huntosen (Germany)	4.9	0-50	15.46	SFO	168.4
Loamy same	Salencia (Spain)	7.3	0-30	13.95	SFO	317.4
Sandy salt	Appily (France)	7.1	0-30	11.16	SFO	144.2
Sandy silt loagu	Senas (France)	7.6	0-45	9.864	SFO	136.5
				Geo	metric mean	183



Degradation in Aerobic Soil: Overall DegT₅₀ value

Degradation half-lives for fluopicolide derived from laboratory and field dissipation studies were compared using the EFSA DegT₅₀ Endpoint Selector (EFSA, 2014). This comparison indicated that the laboratory and field DegT50 values for fluopicolide should be combined.

An overall geometric mean DegT₅₀ value of **182 days** in soil was derived for Juopicolide for use on surface water calculations, including both laboratory and field data.

Plant Uptake

The plant uptake factor for fluopicolide was set to **0.5**. Residues of fluopicolide and metabolites have been found in different plants in a rotational crop study (M-240707-1). Purple wilded is redistributed via the xylem (acropetal systemic acrovity) but is not phloem mobile. TSCF calculated according to Briggs is 0.47.

The uptake of fluopicolide into potato plants has been investigated in a new study (M-68372-01-1, 2020) and the transpiration stream concentration factor TSCF) determined. The mean TSCF was determined as 0.71 (DAD2), 0.45 (DAD4) and 0.82 (DAD6), thus fully supporting the use of the default value of 6.5 in the PECsw evaluations.

Adsorption

The adsorption and desorption of fluopicolide has been investigated in five studies (M-24)(425-01-1), 2003b; M-233840-01-0, 2016 M-540-04-02-1, 2017). Assummary of $K_{\rm OC}$ and 1/n values derived for fluopicolide from these studies is given in Table 9.2.4-6.

A geometric mean K_{OC} value of 2677 ml/g, corresponding to a K/M value of 155.3 mL/g ($K_{OM} = K_{OC} \div 1.724$), was used for fluoricolide in the modelling, with an arithmetic mean 1/n value of 0.888.

Table 9.2.4- 6: Summary of sorption parameters degived for fluopicolide

				Ŵ	~~			
Study reference		Soil Code	Texture	pH	Ø C [%]	K _f (mL/g)	Koc (mL/g)	1/n
	Pikeville Sediment	EFS=34	loam	\$ 5	2.07	7.73	373*	0.926*
	Capity IIIIa	FFS-65	Sand &	4.7		1.42	283	0.924
<u>M-241425-01-1</u> ,	Abington (EF\$-86	sandy Joam	3 .5	2.21	7.53 (**3.36)	341 (**151.6)	0.929 (**0.882)
(2003b)	Sarotti S	EFS-88	sifty clay	7.4	0.9	3.2	356	0.905
	Münşt ®	EF\$ 93	Joamy sand	5.7	1.3	4.54	349	0.929
√ n	Müngster 4	E FS-94	loamy sand	6.2	0.2	0.21	106*	0.931*
4	Münster 🔊	EFS-95	Damy sand	6.2	0.2	0.17	83*	0.951*
	Philippsburg	03/02	∜sandy loam	6.3	0.6	1.49	248	0.841
111 2550 10 01 1,9	Sen as	©3/03 ₁	clay loam	7.6	1.5	3.59	239	0.882
(2003b)	Huntlosen &	03%04	loamy sand	5.3	1.6	9.27	580	0.953
	Rodelsee O	03/05	clay	7	1.5	2.59	172	0.859
		WuW	loam	5	1.8	4.65	258.6	0.9258
M-54194-02-1,		НаН	silt loam	6.1	1.9	6.22	327.5	0.8741
	Dollendorf II,	Doll	clay loam	7.3	4.8	11.71	244.1	0.8596
(2015)		AXXa	sandy loam	6.5	1.5	4.04	269.3	0.8723



Study reference	Soil	Soil Code	Texture	pН	OC [%]	K _f (mL/g)	Koc (mL/g)	1/n	
	Burscheid	VG08	silt loam	6.1	0.7	2.12	303.3	0.8868	
	Great Chishill	ENG2	clay	7.3	2.1	5.40	257.0	0.9076	
M-572869-01-1,	Parcay Meslay	FR09B	loam	6.7	1.3	3.35		90.8992	
(2016)	Tarascon Le Cayades	FR08	clay loam	7.6	0.9	1.840	204.9	0.8658	
(2010)	Valerio Tomelini	IT09	silty clay	_گ 7.2	2.1	(3.93 (7.93	1870	30.9110 7	
	Vilobi D'Onyar	SPA01	sandy loam	6.3	0.8	2.34	2 92.0	0,8818	
	Abington	AB	sandy lowm	7.3	24	5.6	° 214.78	@.868	
	Lamberton	LB	logan	5.6	2.6	8.6 Q	331/.9	0.844	
M-595721-01-1,	Lignieres	LN	sandy loam。	5.70	0.8	2 A	363. 1 €	0:888	
(2017)	Muenster	MS	Joanny sand	\$ 6	1.0	3.4	\$ 282.6	0.916	
(=017)	Pikeville	PV 🔏	loamy sand	4 .5	QI.8	© _{6.2}	3€2.6	0.8 7 \$	
	Sarotti	SR	silfy clay	6.0	,,0	2,6	185.6	Q 851	
	O.888								
	4	Ő "C		Ĵ	Geom	etric nœan	267.7.	-	

^{*}excluded from calculations, **checklist value user for geomean and average

Aged sorption

Data from three aerobic degradation and time dependent sorption studies in sixteen soils (M-550687-2016a; M_555579 01-1 2016b and M-655056-01-1, 01-1,2019) were evaluated by M-685678-62-1, (2020a) The aged sorption parameters derived for fluopicologie are summarised in Table 9.2.4 7.

Existing lower-tree degradation study data for fluopicolide from Caboratory studies (M-201230-02-1, 30; M-241052-01-1, 2003b; M-241051-01-1, 2020 and Teld studies. M-651636-01-1, , 2003; 202410 9-01-1 2003c and M-6856 9-01-1 2003@, M-24105201-1, 2020a; M-2186@7-01-10 , 2003; M-220477-02-1.2019a; M-685675-01-1, 2004; M247945-01-1 2003; M-23442(C01-1) 2005a; M-251338-01-1 , 2005b; <u>MS218672-01-4</u> 2003; <u>M-685676-01-1</u>, 2020b) were also evaluated to derive Deg T50eq values (M-687157-01-1, combined with the higher-tier ged-sorption values, this yielded an overall geometric mean DegT50eq The F_{ne} and k_{des} values require conversion for use in MACRO, resulting in $F_{neMACRO}$ 0.337 and α_{MACRO} 0.0120. of 121 days (Table 52.4-8) for use in exposure modelling, in combination with the mean aged-



Table 9.2.4-7: Aged-sorption parameters derived for fluopicolide (after M-685678-02-1, 2020a)

Soil	f _{NE} (-)	K _{des} (1/d)	DT50,eq (d)	DT ₅₀ , eq 20°C, pF2 (d)	Evidence of aged sorption	Robust pagameters
	0.553	0.0432	80.5	80.5	Yes	Yes
Dollendorf	0.271	0.0433	98.6	98.6	Yes 🎺	, Kes 🗸
	0.632	0.0420	6 9.8	68,8	Yes	Yes J
	0.785	0.0467	45.4	\$ 5.4	y@s OYes	Type /
	0.506	0.0507	Ĉ 76.2	76.2	©Yes ~	Pes 0
Great Chishill	0.571	0.0248	170.9	17999	Q Yes	Yes
Parcey Meslay	0.493	0.0524	, .111.0 <i>%</i>	13 1.0 g	Xes .	V Yes
Mas du Coq	0.514	0.0310	12 1 12 1 2	\$\tag{108.4}	Yes	Yes
Albaro	0.303	Q .0287	1 √2.2 €	112.2	Yes	Yes
Vilobi d'Ònyar	0.435	0.0575	52.2	£52.2 , O	X gs	Yes
Abington	0.289	© 0.08\$5 🐇	97.5	,©″97. 5 €″	Yes N	des
Lamberton	0.830	0 ;0145	ĴM.2 √	, 500 5	S Yes	👸 Yes
Munster	0.522	0.0163	103.1	95.4 C	Yes ?	Yes
Pikeville	00710 🔻	V 0.03019 /	≽′ 80@ <i>°</i> ′	66.80	%Yes ⟨⟨	Yes
Sarrotti	0.484	2 9 20534	111.5	9 9	Yes	Yes
Lignieres	0.638	\$0.015 &	96.8	%6.8 X	.Y.es	Yes
Geometric mean	0\508	0.0356		86.6	\$ -	-

Table 9.2.4- 8: Overall DegT₅₀₈₆ evaluation results (after 10-687157-01-1, 2020b)

Soil O O O	Deg To, eq (days)	Derivation
	80\$	TDS – PEARLneq
Dollandorf &	98.6 0	TDS – PEARLneq
Dollendolf	69.8	TDS – PEARLneq
	0 454 A	TDS – PEARLneq
	76.2	TDS – PEARLneq
Great Chishill	↑ \$\text{70.9}	TDS – PEARLneq
Parcey Meslay C	0 0 112b0	TDS – PEARLneq
Ivias du Cog	\$ 198.4	TDS – PEARLneq
Albaro	112.2	TDS – PEARLneq
Vilobřed'Ònyar	©" 52.2	TDS – PEARLneq
Abington	97.5	TDS – PEARLneq
Lamberton Munster	Q 91.6	TDS – PEARLneq
Munster	<i>♥</i> 75.4	TDS – PEARLneq
Pikeville & & &	66.8	TDS – PEARLneq
Sarrotti	99.3	TDS – PEARLneq
Lignières	96.8	TDS – PEARLneq
	178.1	Lab Tier 1 refit
Sarrotti	138.6	Lab Tier 1 refit
Abington	256.4	Lab Tier 1 refit
Lamberton	532.5	Lab Tier 1 refit



Soil	DegT ₅₀ , eq (days)	Derivation
Pikeville	295.2	Lab Tier 1 refit
Burscheid (Germany)	84.3	Field Scaling factor 1
Great Chishill (UK)	155.8	Field Scaling factor 1
Lignieres de Touraine (France)	109.8	Field Scaling factor
St.Etienne du Grès (France)	234.2	Fold Scaling factor 1
Albaro di Ronco all'Adige (Italy)	205.3	Field Scaling factor 1
Vilobi d'Onyar (Spain)	132.5 🙈	Field Scaling factor *
Philippsburg (Germany)	158.98	Field Scaling factor 1
Rödelsee (Germany)	185.0	Field Scaling actor 10 9
Huntlosen (Germany)	A247 Q	Field Scaling factor Y Field Scaling factor I
Valencia (Spain)	234.4	Field Scaling factor 1
Appilly (France)	1000.6	Field Scaling factor 1
Senas (France)	₩ ₩01.3 © ₩	Field Scaling factor
Geometric mea	n 2 121 × 2	A &
M-01 (BAM; AE C653711) Physico-Chemical Properties Structural formula		Field Scaling factor
Common name Chemical name (IUPAC)	234.4 107.6 107.6 121 121 1-01 (BAM AE C653711 2,6 dichlorobenzamide	

M-01 (BAM; AE C653711)

2.6 dichlo obenzamide

Molar mass

Water solubility

2014)

Vapour pressure

as worst case for modelling

Degradation in Aerobic Soil

Laboratory studies

The aerobic degradation of M-01 (PAM) is soit was investigated in the laboratory by M-234320-01-1, (2002). In addition, M-N was observed to form from fluopicolide in six studies (M-241049-2003a; M-241052-01-1@ ©2003b; <u>M-241051-01-1</u>, 2003c; M-550687-01-1. 2016a; M\$5552\$\(^2\)01-1, 2016b and M-655056-01-1, 2019) and from M.03 in one study (\$\sqrt{241188-01-1}\$, 2003). A summary of the modelling endpoints derived for M-01 (KCA 7.1.2.1.1/10, M-685680-01-1, 2020) is given in Table 2.4-9.

Overall formation factions for M-01 (BAM) from fluopicolide, considering both direct formation and formation a metabolite M-03, were also derived by M-685680-01-1, (2020), and are summarised in Table 9.2.4- 10. The overall arithmetic mean formation fraction of M-01 from fluopicolide was 0.8. Where metabolite M-03 was included in the groundwater simulations (i.e. for acidic soils), this was implemented by assuming a molar formation fraction of 0.27 from fluopicolide, with a molar formation fraction of 1.0 from metabolite M-03 (where ffm FLC \rightarrow M-03 = 0.53). Where



M-03 was not included in the simulations (i.e. for alkaline soils), the molar formation fraction of M-01 from fluopicolide was set to **0.8**.

Table 9.2.4- 9: Summary of modelling endpoints derived for M-01 (BAM) under laboratory conditions (after M-685680-01-1,

					<u> </u>
Applied compound	Study	Soil	Model selected	DegT ₅₀ pr- normalised	DegT50 normalised to 20%C and pF2
	M-201230-02-1	Münster	S FO	7000a	1090 0
	2003	Sarotti	SFO	\$\int 1000^a \text{\tin}\text{\tetx{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\text{\texi}\text{\text{\text{\text{\tetx{\texi}\text{\texi}\text{\texi{\texi{\texi}\text{\text{\text{\texi}\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi}	· · · · · · · · · · · · · · · · · · ·
	M-241049-01-1 , 2003a	Abington (non-sterile)	SFO 4	1000° 1000°	1000°
	M-241052-01-1 , 2003b	Lamberton	° SFQ	1000 ^a 0	1000
	M-241051-01-1	Lamberton 🗸	SFO Q	9	√ 1000° a
	, 2003c	Pikeville 💝	SFQ '	<u></u> 173€	₹ 4.0 %
		Albaro Marconcini (ŞFQ	0 417/3 Q	
		Geat Chishill	SFO 6	\$\tag{\psi}000\cdot\tag{\psi}	1000°
	M-550687-01-1		SFQ	5719	\$571.7°
	2016a	Mas du Coq 🕜	S FO	472.2	422.2
Fluopicolide	**	Parcey Meslay	⊕ SFO ∜	908.40	908.4
		Vilobod'Ònxor	SEO	J 323×9 J	323.9
	₩ .4	Dellend TI	, SFO &	(159.7 S	159.7
	M-555570-01-1		SFQ	869.3	869.3
	ر 2016 م		SOFO Q	\$36.2	556.2
	2016			1000a	1000a
Ò		🔊 Abington 🎾 🛭	SFO	¥ 175.6	175.6
		Winderton S	SFO ^	1000a	1000a
	M-6550 6-01-4	Lignæres V	SFO,	1000a	1000a
	, 201/9	A Münster	SFO SFO	294.7	215.6
		Pikeville	S FO	135.9	113.3
		Sarota 2 So	SFO	267.1	237.9
M-01	M-234320-0-1,	Bethany C	SFO	1858.0	2077.6
		North Dakota	SFO	568.8	913.6
№ 203	M-241 88-01	Migoster 💉	SFO	1000a	1000ª
1 V ¥∕03	2003	Pikeville	SFO	1000 ^a	1000ª
				Geometric mean	569.5 ^d
b – Pseudo-SPČ c – Pseudo-SFO	value based on fast	Mase of decline (calculated hase of decline (calculated libs) values from Lamberton so	$n(2)/k_1$ and norm	nalised if applicable)	



Table 9.2.4-10: Overall formation fraction of M-01 (BAM) from fluopicolide

Applied compound	Study	Soil	ffm FLC→M-01	ffm FLC→M-03	ffm M-03→M-01	Overall ffm
	<u>M-201230-02-1</u>	Münster	0.3914	0.6086	0.3892	06,283
	2003	Sarotti	0.798	-	G -	L, 0.798 D
	M-241049-01-1 2003a	Abington (non- sterile)	0.8406	-	- S	0.5006
	M-241052-01-1 2003b	Lamberton	0.74	- Q		0.715 6
	<u>M-241051-01-1</u>	Lamberton	g:#067	0.5933	Ä Q	
	2003c	Pikeville	1	Q'-6°	\$ - &	
		Albaro/Marcomcinf	0.8262		* */O *	© 0.8262
		Great Chishil	Ø\$6013_\P		<u> </u>	0.6013
	M-550687-01-1		0.8963		- O	©0.895 3 %
	2016a	Mas do Coq	9 8075 L			0.8075
Fluopicolide		Parcey Meslay	0.8286	<u> </u>	<u> </u>	0.8286
		Vilobi d'Òœyar 🕈	¥ 0.9 7 % ;			J 0.9776
		Dollendorf II 🛇	Q 819 6			0.819
	M-555570-01-1		0.8773	- \$ - \$	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	0.8773
	2016b 🦋		0.8156	F F		0.8156
			0.802	% - %	Ž -	0.8022
		Abington 2	0,2879	, <u>-</u>	-	0.7879
		Lamberton	70.7252	Ø - 39	-	0.7252
	№65505¥-01-1	Figniere &	(J) 0.6 26 4		-	0.6264
l a	2019	Münster 🔌	0.9701		-	0.9101
		Pikoville O	0.39	9 .4009	1	0.7909
	, Ű, Ĉ	Šarotti 2,	0.6227	y -	-	0.6227
	Q' 4'			Ari	thmetic mean	0.80^{a}

a – Arithmetic mean calculated of overall formation fractions from Lamberton soil prior to calculation of overall arithmetic mean.

Field Dissipation Studies

DegT₅₀ values for M₂0¢ (BAM), normalised to 20°C and pF2, have been derived by M-685675-01-1, (2020a) from five terrestrial field dissipation studies (M-650733-02-1, 2019b). A summary of the modelling endpoint DegT₅₀ values derived for M-01 Table 9.2.4- 11.



Table 9.2.4- 11: Summary of DegT₅₀ values (normalised to 20°C and pF2) derived for M-01 (BAM) from terrestrial field dissipation studies (after M-685675-01-1, 2020a)

	Aerobic field conditions				፟	
Soil type	Location (country)	pH (CaCl ₂)	Depth (cm)	St. (χ²err) (%)	Method of calculation	DegT ₅₀ (d)
Silt loam	Burscheid (Germany)	5.9	0-120	14.68 🔏	SFO 🦠	,9 9 .0 &
Sandy loam	Lignieres de Touraine (France)	6.9	20	7.82	SFO 💍	₹91.1@
Clay loam	St.Etienne du Grès (France)	8.1	ر 0-120	58	SEQ	T 179.9
Clay loam	Albarodi Ronco all'Adige (Italy)	7.7 4	0-120	\$3.93°	\$FO (\$1.8 \$1.8
Sandy clay loam	Vilobi d'Onyar (Spain)	6.9	°0-120		SFO S	1363
	•				eometric mean	€ 46 £°

Degradation in Aerobic Soil: Overall DegT50 value

Degradation half-lives for M-01 (BAM) defived from laboratory and field dissipation studies were compared using the EFSA Deg T_{50} endpoint Selector (EFSA, 2014). This comparison indicated that the field Deg T_{50} values for M-01 were significantly shorter than the laboratory studies, therefore the geometric mean field Deg T_{50} value of 46 days was used in the modelling for M-01 (BAM).

Plant uptake

The plant uptake factor for M-01 was set to 0.5 Residues of fluopicolide M-01 and other metabolites have been found in different plants in a rotational copy study (M240707-03-1, 2003). M-01 is described as high xylem systemic TSCF calculated according a Briggs is 0.49. The uptake of M-01 into potato plants has been investigated in a new study (M-688374-01-1, 2020b) and the transpiration stream concentration factor (FSCF) determined. The mean TSCF was determined as 686 (DAT2), 0.75 (DAT4) and 0.71 (DAT6), thus fully supporting the use of the default value of 0.5 in the PFCgw evaluations.

Adsorption

The adsorption and desorption of M-01 (BAM) has been investigated in ten soils (M-235837-01-1, 2001; M-204926-01-2, 2003 M-686288-04-1, 2020a). A summary of the sorption parameters derived for M-01 from these studies is given in Table 9.2.4- 12. A geometric mean K_{OC} value of 24.2 mL/g; corresponding to a K_{OM} value of 14.0 mL/g (K_{OM} = K_{OC} ÷ 1.724), was used for M-00 in the modelling, with an arithmetic mean 1/n value of 0.914.



Table 9.2.4- 12: Sum	mary of sorption	parameters derived	l for M-01 ((BAM)
-----------------------------	------------------	--------------------	--------------	-------

Report reference	Soil	Soil Code	Texture	pН	OC [%]	K _f (mL/g)	Koc (mL/g)	1/n°
	Connecticut	RL-51	Sandy loam	4.8	0.9	0.241	26*	1941*
M 225027 01 1	North Dakota	RL-81	Sandy loam	7.7	5.7	1.707	31	0.809
M-235837-01-1 (2001)	Florida	RM-014	Sand	6.3	1.4	0.529	38	0.916
(2001)	Washington	RM-019	Sand	4.9	4.2	J1.890	, P	©0.913
	California	RM-022	Sandy clay loam	6.6	0.40	0.208	51	0.992
M-224926-01-2 (2003)	Connecticut	RL-51	Sandy logor	4.8	Ø.9 2	0.35%	39.9**	0 .970* %
	LUFA 2.1	2.1	sand	5.2	0.5	0.AQ3	Õ [®] 17.5⊘	0.958
N. (0(200 01 1	LUFA 2.3	2.3	sandy loam °	6.9	Q.61	J Ø.056	9,30	.0,859
M-686388-01-1 (2020a)	LUFA 5M	5M	s@ndy los@n	₹ 7.1	#.10 _%	0.16	14.8	0.888。
(2020a)	LUFA 6S	6S	🔬 clay loam 🎺	7.3 🖣	1.78	0,2,65	014.9	0.872
	Frankenforst	FF (stity loam	60	2 A	~ 9 .418≾	17.4	29 80
		Q.	. & , "		Geom	etric m@n	2 4.1	O _
		- 10 A			Arithn	netic mean ,	~ ?	0.914

^{*}Excluded from calculations

M-02 (PCA; AE C657188)

Physico-Chemical Properties

Structural formula

Chemical name (ICPAC) - S-chloro-5-(priluoromethyl)pyridine-2-carboxylic acid

Molar mass 2 23.56 gonol-1

Water solubility $\sqrt{115000} \text{ mg V}^{-1}$ at 20°C (M-653965-01-1,

Vapour pressure Assumed 0 Pa as worst case for modelling

Degradation in Aerobic Soil

The aerobic degradation and metabolism of M-02 (PCA) in soil was investigated in the laboratory by M-21982401-1, M-2198240

The overall formation fraction of M-02 (PCA) from fluopicolide was set to 1.0 as a conservative assumption. Where metabolite M-03 was included in the groundwater simulations (i.e. for acidic soils), this was implemented by assuming a molar formation fraction of 0.47 from fluopicolide, with a molar formation fraction of 1.0 from metabolite M-03 (where ffm FLC \rightarrow M-03 = 0.53). Where M-03

^{**}Recalculated and used for calculation



was not included in the groundwater simulations (i.e. for alkaline soils), the molar formation fraction of M-02 from fluopicolide was set to 1.0.

Table 9.2.4- 13: Summary of modelling endpoints derived for M-02 (PCA) under laboratory conditions (after M-685680-01-1, 2020)

Applied compound	Study	Soil	Model selected	DegT50/in- normalised	DegT50 normalised to 20%C and pF2
	M-219824-01-1	Abington	S FO	V 4.4	
		Münster	SFO SFO	3.5	3.5
14.00	2003	Sarotti	SFO	4.4	4.10
M-02 (PCA)		Dollendorf	SFO 👡 🦜	9 1.1 Q	O 4.1 O
(1 0/1)	<u>M-581364-01-1</u>		∘ SFO®		0.9
	2017	♥ .//`	V SKO	9.7	0.7
		, o	øsfo Q	0.7	
				Geometric mean	1.6

Plant uptake

The plant uptake factor for M-02 was set to 0. Residues of fluoricolide M-02 and other metabolites have been found in different plants in a rotational crop study (M-240707-03-1, 2003). M-02 is described as placem mobile

Adsorption

The adsorption and desorption of M-02 (PCA) has been investigated in eight soils (M-219828-01-1, 2003; $\sqrt{1-686}$, $\sqrt{87-01-9}$, 2020b). A summary of the sorption parameters derived for M-02 from these studies is given in Table 2.4-14. A geometric mean K_{OC} value of 5.7 mL/g, corresponding to $\sqrt[3]{K_{OM}}$ value of 3.3 mL/g ($\sqrt[3]{K_{OM}}$ = $\sqrt[3]{K_{OC}}$ + $\sqrt[3]{K_{OM}}$ value of 0.889.

Table 9.2.4- 14: Summary of sorption parameters derived for M-02 (PCA)

<i></i>				10°		`		
Report reference		Soil © Code	Texture \$\infty\$	p.H. (CaCl ₂) ₂	OC [%]	K _f (mL/g)	Koc (mL/g)	1/n
M-219828-01-1	⊗ooungtony y	\$ / 06	Sandy Joan	% 7.2 △	2.6	0.029	1.1	0.725
	Murster C	3/07	Loamy Sand	5,0	1.1	0.116	10.5	0.887
(2003)	Sarotti 0	0 3 ₩€0	Silt loam	7.5	1.3	0.082	6.3	0.709
4	LUFA 🕅 🧠	2.1	Sand	5.2	0.59	0.047	8.0	1.031
M-686387-01-1	LUF 2.3	2.3 💇	Sandy loam	6.2	0.61	0.038	6.2	0.853
M-686389-01-1	LACTA 5M	5M	Sandy Joann	7.1	1.1	0.154	14.0	0.989
(\$20200)	LUFA	∕6S 4	Clay Yoam	7.3	1.78	0.145	8.2	1.105
	Frankenforst	FF@	Silt loam	6.9	2.4	0.059	2.5	0.814
-ô ⁴		W,	&		Geome	tric mean	5.7	_
	LI S L	, <			Arithm	etic mean	-	0.889

M-03 (AE 0608000)

Physico-Chemical Properties Structural formula



Common name

Chemical name (IUPAC)

Molar mass

Water solubility

case for modelling Vapour pressure

Degradation in Aerobic Soil

The aerobic degradation and metabolism of M-03 in soil was investigated in the laborator by Mobserved to form from fluopicolide in three studies (M-201230-02-0), and M-241052-01-1 M-03 (KCA 7.1.2.1.1/10, M-685680-01-1, , **202**0b) is given in Tab 9.2 4 ≥ 15.

The half-lives derived indicate that M. 3 is gransient in alkaling soils, and this metabolite was therefore simulated for acidic conditions only of geometric mean Beg T. o. Value of 17.9 days was used in the groundwater modelling, derived from acidic soils of H. 6), with an arithmetic mean formation fraction from fluopic tide of 9.53 The half-lives derived indicate that M. 93 is fransiero in alkaline soils, and this metabolite was



Table 9.2.4- 15: Summary of modelling endpoints derived for M-03 under laboratory conditions (after **M-685680-01-1**, 2020)

Applied compound	Study	Soil	Soil pH	Model selected	DegT ₅₀ un- normalised (d)	DegT ₅₀ normalised (d)	ffm from
	M-201230-02-1, 2003	Münster	4.9	SFO	62.6	62.6	0.6086
Fluopicolide	M-241052-01-1, 2003	Lamberton	5.9	్త్రి SFO	45/3	545	~ 0.5933°
	M-655056-01-1, 2019	Pikeville	45	SFO	29.3	24.4 Q	0.4009 &
		Abington	7.2	SFQ)	5 10Q	& - 07
	<u>M-241188-01-1</u> ,	Münster	4.9 。	DĘØP	₹ 1000°	₩000° , ×	
	2003	Pikeville 🂍	5 Ø	DFOP	2.76	\$\frac{1}{2}.2\text{b}	- ·
M-03		Sarotti	7.1	SFOQ,	0.1	0.03	\$ - \$
		Brierlow (BL) ~	5.3	ŞÎĐ	2.5, O	42. 5	
	M-565219-01-1, 2016		\$ 5.0 \(\)	SFO			<u> </u>
				ometric m	egn (pH 26)	77.9	_
	~		Ari	Metica	ean (pH->-0)		0.53
	*				(soil/pH ≥6)		-
					ean (p H ≥6)	~ -	-

a – DFOP k₂ parameter fixed to conservative default volue

Plant uptake

As the metaborte May (AF 0608000) has not been detected in the plants from rotational crop studies, the uptake factor was set to a conservative default of 00

Adsorption

The adsorption and desorption of M-03 has been investigated in three soils by M-221107-01-2, (2003) Summary of the sorption Farameters derived for M-03 is given in Table 9.2.4-16. A geometric mean K_0 value of 106 % mL/g, corresponding to a K_{OM} value of 62.0 mL/g ($K_{OM} = K_{OC}$ ÷ 1.724), was used for M-03 in the modelling, with an arithmetic mean 1/n value of **0.971**.

Summary of sorption parameters derived for M-03

Report reference	Soil A	Soil Soule	Texture	pH (CaCl ₂)	OC [%]	K _f (mL/g)	K _{OC} (mL/g)	1/n
M-221107-01-2	\ Ingleby	©2/03	SandPloam	4.1	3.5	2.86	82	0.961
	Timitroseii	~/ n°	Loamy sand	4.7	1.7	2.26	133	1.012
(2003)	Munster	03/07	L oamy sand	5.4	1.1	1.23	112	0.939
		Ž	8		Geomet	ric mean	106.9	-
	4. 5	<i>)</i>			Arithme	tic mean	-	0.971

Physico-Chemical Properties

Structural formula

b - Pseudo-SFO DT50 value derive as DT 3.32 (and normalised if applicable)

c – Geometric mean calculated for Münster soils prior to calculation of overall value



Common name M-05 (AE 1344122)

Chemical name (IUPAC) 3-methylsulfinyl-5-(trifluoromethyl)pyridine-2-earboxylic

acid

Molar mass 253.2 g mol^{-1}

Water solubility 120000 Mg L^{-1} at $20^{\circ} \text{C} (M-500055-01\text{ L}^{-1})$, $(120000 \text{ Mg L}^{-1})$

Vapour pressure Assumed 0 as worst case for modelling

Degradation in Aerobic Soil

The aerobic degradation and metabolism of M05 in soil was investigated in the laboratory by M-241410-01-2, (2003a) and M56523-01 (2005b). It addition, M-05 was observed to form from M-02 in two studies (M-21984-01-1), 2017).

A summary of the modelling endpoints derived for \$1.05 (\$CA 7\$\).2.1.1/10, \$\text{Mo85680-01-1}\$. 2020) is given in Table 9.2.4-17. A geometric mean Deg \$\(\frac{1}{2} \) 50 value of **25.2 days** was used in the modelling for M-05, with an arithmetic mean movement of promotion fraction from M-02 of **0.153**.

Table 9.2.4- 17: Summary of modelling endpoints derived for M-05 under laboratory conditions (after M-68568)-01-1/2014

Applied compound	Study	Soil &		Dog T50 tray	DegT ₅₀ normalised (d)	ffm from M-02 (PCA)
	M-219824-0, ►	& Abington	SFO SFO	29 .4	29.4	0.2581a
	M-219824-034	Manster \	SFO	, O [*] 172.1	172.1	0.1557 ^a
	2003	C' Sarotto «'	SFO A	45.5	42.3	0.1811a
M-02	M-581364-00-1	Dollendorf	SFO	9.3	9.3	0.1528
	M-581364-Q-1		SFO	11.2	9.3	0.0859
	2017		S FO	5.6	5.6	0.1438
4			SFO	8.1	8.1	0.0918
	1V1 2+1+20501 2	Abington Q	⊮ SFO	62.2	62.2	-
*	2003a	Mün s per	SFO	136.1	136.1	-
M-05	2003a 💞	Sarotti &	SFO	34.9	32.5	-
	\$\frac{1}{2}\frac{1}\frac{1}{2}\f		SFO	22.5	22.5	-
, r	2016€		SFO	16.8	16.8	-
	2016©		SFO	19.0	19.0	-
		T	G	eometric mean	25.2	
		<u> </u>	Aı	rithmetic mean	=	0.153

a – Pactored formation fraction: ff M-02-ghost × ff ghost-M-05

Plant uptake

The plant uptake factor for M-05 (AE 1344122) was set to 0. Residues of fluopicolide, M-01, M-02



and other metabolites have been found in different plants in a rotational crop study (M-240707-03-1, 2003).

Adsorption

The adsorption and desorption of M-05 has been investigated in seven soil by M-241 (2003a) and M-587780-01-1, **(26**17). A summary of the sorption parameters derived for M-05 is given in Table 9.2.4-18. These data indicate that the sorption of M-05 is pH-dependent, with greater sorption observed in acidic soils (M-7).

As a conservative approach at Tier 1, a geometric mean K_{OC} value of 14.0 mL/2 was used in modelling, based on alkaline soils (pH \geq 7), with a conceptor of the solution modelling are modelling as \geq 70. A corresponding K_{OM} value of 8.1 mL/g was calculated by dividing the K_{OC} value by

Summary of sorption parameters derived for M-05 **Table 9.2.4- 18:**

			V. 60		\$\text{\tin}\ext{\texi{\text{\texi{\text{\texi}\\ \text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}}\\ \text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\text{\text{\texi}\text{\text{\texi}\text{\text{\text{\texi}\text{\text{\texi}\text{\texi}\tittit{\text{\texi}\text{\texint{\texit{\texi{\texi{\texi{\texi{\texi}\tint{\texit{\texi{\texi}			<u>Uʻ</u>
Report reference	Soil	Soil Code	Pexture	pH (CaCl ₂)	Ж С [Ж]	(mL/g)	Koc (mL/g)	1/m
M-241403-01-2	Abington	n/a ≰	Sandy loam	7.2	£ 6	0.294	18	0.883
	Munster	n/a	Loamy ©' √ sand	°5,4	O 1.1 &	0.544		, and the second
(2003a)	Sarotti	∡n/a	⊗ Silt lowm	₩7.7 <u>~</u>	153	20 .218	1.J?	0.918
		~331 ©	Sandy loan	55	Q.9 Q	0 1.4793	₹7₹.9	0.974
<u>M-587780-01-1</u>		329	Silt loam	\$6.3 Q		0.4915	24.6	0.985
(2017)	Dollendorf	©330 €	L@am '	© 7.3 °	~Q+.5	√0.66 2 ∳	14.7	1.025
		227	Sand		1.6	0.4671	29.2	0.984
	(7) n°		v Š	∜ Geon	netri O mear	(pH <7)	40.7	-
			, .Q		metic mea	(pH <7)	-	0.974
	<i>></i>	%		~ ~ Geom	retric mear	(pH ≥7)	14.0	_
3		O .			meti © mear		-	0.942

M-10 (A)E 134412

Physico-Chemical Prop

Structural formula

CO₂H M-10 (AE 1344123)

Compon name

3-surfo-5-(trifluoromethyl)pyridine-2-carboxylic acid Chemical name

271.17 g mol⁻¹ Molar ma

100000 mg L⁻¹ at 20°C (M-517618-01-1,

Assumed 0 Pa as worst case for modelling

Degradation in Aerobic Soil



The aerobic degradation and metabolism of M-10 in soil was investigated in the laboratory by M-241411-01-2, [2003b] and M-565224-01-1, [2016c]. In addition, M-10 was observed to form from M-02 in two studies (M-219824-01-1, [2003c] 2003; M-581364-01-1, [2017c]

A summary of the modelling endpoints derived for M-10 (KCA 7.1.2.1.1/10, M_685680-01-12)..., 2020) is given in Table 9.2.4- 19. A geometric mean DegT₅₀ value of **35.4 days** was used in the modelling for M-10, with an arithmetic mean molar formation fraction from M-02 of **0.129**.

Table 9.2.4- 19: Summary of modelling endpoints derived for M-10 under laboratory conditions (after M-685680-01-17 2020)

Applied compound	Study	Soil ©	Model selected	Deg T 50 un- normalised		Offm from M-02 (PCA)
	M-219824-01-1	Abington	SFO.	01000	\$5.4 \$1.000	0.1436a
	2003	Münster Sarqti	SFO ?	k 144=10 (′	N° L1D	0.0305 0.0306
M-02		Doll@ndorf,	_ @SFO_ \	3 .5	Q3 5 W	6 .1997
(PCA)	M-581364-01-1		SFO	20.2	16.80	© 0.1265
	2017		SFO SFO	88 .2 ©	led a 'y	0.1502
			SFO SFO	5.8	5.8	0.1686
	<u>M-241411-01-</u>	Abington Abington Münster Sarotti	SPO		₹ 3 \$0.6	-
	2003	A Münster	Ø SFO ♥	241.9	2 41.9	-
M 10	20030	Sarotti	SF ®	21.%	19.8	-
M-10		Survey Survey	SFO SFO	21.6	⁹ 21.6	-
	M-569224-QP1		SFO	8 3.9	83.9	-
	M-569224-0 P1			228.8	228.8	-
			"U" @G	eometric mean	35.4	-
	s. Ø .		S SA	rittimetic mean	-	0.129

a – Factored formation fraction: ff M-02-ghost × fo host-M-05

Plant uptake

As the metabolite M-10 (AP 1344)23) has not been dejected in the plants from rotational crop studies, the uptake factor was set to a conservative default of 0.

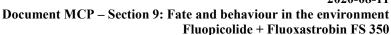
Adsorption

The adsorption and desorption of M-0 has been investigated in three soils by M-241404-01-2, (2003b). A summary of the sorption parameters derived for M-10 is given in Table 9.2.4- 20. A geometric mean K_{OC} value of 1.8 mL/g, corresponding to a K_{OM} value of 1.1 mL/g ($K_{OM} = K_{OC} = 1.72$), was used for M-10 in the modelling, with a default 1/n value of 1.0.

Table 9.24-200 Summary of sorption parameters derived for M-10

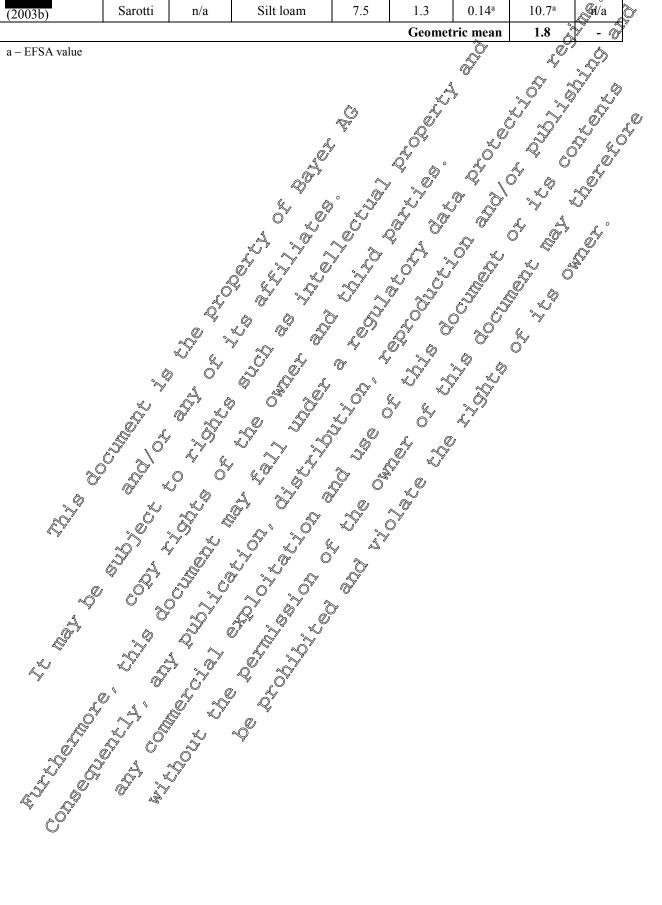
Report	Soil	Soil	Toutumo	pН	OC [%]	Kf	Koc	1/
reference	(QSOII)	Code	Texture	(CaCl ₂)	UC [%]	(mL/g)	(mL/g)	1/n

b - Conservative default value





a – EFSA value					Geomet	F S		
(2003b)	Sarotti	n/a	Silt loam	7.5	1.3	0.14 ^a	10.7 ^a	Ga/a (
	Munster	n/a	Loamy sand	5.4	1.1	0.09a	8.2ª	n/a
<u>M-241404-01-2</u>	Abington	n/a	Sandy loam	7.2	2.6	0.003a	0.07^{a}	n/a





M-11 and M-12 (AE 1344119 and AE 1344120)

Physico-Chemical Properties

Structural formula

Common name M-11 and M-12 (two isomers; AE 1344119 and AE 344129)

Chemical name (IUPAC) 6-hydroxy-3 fulfo-5-(trifluoromethyl)pyridine-2 carbo fulic

acid; 4-hydroxy-3-sulfo-5 (trifluoromethyl)pytidine-2

carboxyko acid

Molar mass 287. 10 g mg/F

Water solubility 1000 mg L-1 at 20°C (default)

Vapour pressure Assumed OP a assorst case for brodelling

Mixture of two isomers $\sqrt[\infty]{40}$ M-11: M-12 \approx 60:40

Degradation in Aerobic Soi

Metabolites M-11/12 were observed to form from M-02 in a study by M-21982-01-1, 2003.

A summary of the modelling endpoints derived for M²V1/12 (KCA 7.1.2 1/10, M-685680-01-1, 2020) is given in Table 9.4-2 A geometric mean DegT₅₀ value of **87.6 days** was used in the modelling for M-1/12, with an arithmetic mean molar formation fraction from M-02 of **0.044**.

Additional supporting information for M-11/12 was obtained from inverse model fitting of lysimeter study data (M-687853-01-1), where on overall ffm value of 0.054 was derived considering a fixed D \$\mathbb{S}_0\$ of \$\mathbb{S}_0\$ 6 days.

M-11/12 is a mixture of two isomers M-11 and M-12 in the ratio M-11:M-12 \approx 60:40. PECgw calculations are conducted for M-11/12 and the results then split in the ratio 60:40 to derive PECgw values for M-11 and M-12.

Table 9.2.4- 21: Supmary of modelling endpoints derived for M-11/12 under laboratory conditions (after M-683680-01-1, 1990)., 2020)

Applied compound	Strady 5		Model selected	DegT ₅₀ un- normalised (d)	DegT ₅₀ normalised (d)	ffm from M-02 (PCA)
M-02	M-219834-01-1	Abington	SFO	31.7	31.7	0.0177
(PCA)	200	Mü@ter	SFO	242.5	242.5	0.0711
<u> </u>				Geometric mean	87.6	-
				Arithmetic mean		0.044

Plant uptake

As the metabolites M-11/M-12 have not been detected in the plants from rotational crop studies, the uptake factor was set to a conservative default of $\mathbf{0}$.



Adsorption

No reliable sorption parameters have been derived for M-11/12. A worst-case K_{OC}/K_{OM} value of **0 mL/g** was therefore used in the groundwater modelling, with a default 1/n value of **1.0**.

M-13 (Fluopicolide-P3)

Physico-Chemical Properties

Structural formula

Common name

M-13 (Fluopie olide-P3)

Chemical name (IUPAC)

3-chloro-4-hydroxy-5-trifluotomethyl)pyridine-2-carboxylic acid; 3@hloro-hydroxy-5-trifluotomethyl)pyridine2-

carboxylic acid

Molar mass

2∄1.55°**g∕**mol-¹

Water solubility

100@mg L[™]at 20°C (default)

Vapour pressure

Assumed 0 Palas worst case for modelling

Degradation in Aerobic Soil

Metabolite M-13 was observed to force from M-02 in a study by 14-219824-01-9

2003.

A summary of the prodelling endpoints derived for M₂D (KCA 7.1.29.1/10, M-685680-01-1, 2020) is given in Table 9.2.4-22. A geometric mean free T₅₀ value of 20.7 days was used in the modelling for M 13, with an arithmetic mean molar formation free ion from M-02 of 0.049.

Additional supporting information for M²13 was obtained from inverse model fitting of lysimeter study data (M-687853-Q1-1), page 150 model from the supporting a fixed D²50 of 20.7 days.

Table 9.2.4- 22: Summary of modelling endpoints derived for M-13 under laboratory conditions (after M-685680-01-1, 2020)

Applied compound Study		Model Selected	Deg T ₅₀ un- normalised (d)	DegT50 normalised (d)	ffm from M-02 (PCA)
	Abington	SFO	13.3	13.3	0.0667
M-02 (PCA) M-219824-01-1	Mürster 🛴	SFO	48.4	48.4	0.0286
(RÇA) 2003 2003	Sarotti 🔎	SFO	14.8	13.8	0.0507
			Geometric mean	20.7	-
	<u>, </u>		Arithmetic mean	-	0.049

Plant uptake

As the metabolite M=13 has not been detected in the plants from rotational crop studies, the uptake factor was set to a conservative default of $\mathbf{0}$.

Adsorption

No reliable sorption parameters have been derived for M-13. A worst-case $K_{\rm OC}/K_{\rm OM}$ value of **0 mL/g** was therefore used in the groundwater modelling, with a default 1/n value of **1.0**.



M-14 (AE 1388273)

Physico-Chemical Properties

Structural formula

Common name M-14 (AE 1388273)

Chemical name (IUPAC) 3-Methylsulfonyl-5-(triffcoromethyl)-Wi-pyridin-2-one

Molar mass $241.19 \text{ g mol}^{-1}$

Water solubility $15800 \text{ mg} \text{ L}^{-1} \text{ at } 20^{\circ}\text{C} \text{ OM} - 505931 - 01 - 1$,

2014

Vapour pressure Assumed & Pa as worst case for modelling

Degradation in Aerobic Soil

The aerobic degradation and metabolism of M-14 in soil was investigated in the laboratory by M-234149-01-2, (2003). In addition, M-14 was observed to form from M-05 in a study by M-241410-01-2, (2003a).

A summary of the modelling endpoints derived for M-14 (ECA 7.1.2.1.140, M-685680-01-1, 2020) is given in Table 9.2.423. A geometric mean Deg 50 value of 9.4 days was used in the modelling for M-14 along with a formation fraction of 9.559 from M-05 and 0.021 from M-02 (PCA). These values represent overall formation fractions for M-04 vig metabolite M-20, which was not included in the groundwater simulations.

Table 9.2.4-23: Summary of modelling endpoints derived for M-14 under laboratory conditions (after M-685680-01-1, 1997) 2020)

Applied compound	Spady	Soil Soil	selected	DegT ₅₀ un- normalised (d)	DegT ₅₀ normalised (d)	ffm from M-20 ^a
M-05	2414 9- <u>01-2</u>	. ' " " " " " " " " " " " " " " " " " "	SFØ	16.4	16.4	1
.4	2003a	Satotti 🧳	F FO	21.7	20.1	1
M-14	M-234149©01-2 🔏	A Advington	Ş SFO	4.9	4.9	-
M-14		^V → Münster , ♀	SFO	8.2	8.2	-
\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \	, 2063	Sarot@(SLS)\$	SFO	5.8	5.4	-
	@ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		G	eometric mean	9.4	-
	<i>\$ A B</i>		Aı	rithmetic mean	-	1

a – Metabolite M-20 is formed from M-05 with an arithmetic mean formation fraction of 0.559, and from M-02 (PCA) with an arithmetic mean formation fraction of 0.21 (M-685680-01-1, 2020). As shown above, metabolite M-14 is formed from M-20 with a formation fraction of 1.0. The overall formation fractions of M-14 were therefore set to 0.559 and 0.021, respectively, from M-05 from M-05. Metabolite M-20 was not included in the simulations.

Plant uptake

As the metabolite M-14 (AE 1388273) has not been detected in the plants from rotational crop studies, the uptake factor was set to a conservative default of $\mathbf{0}$.



Adsorption

The adsorption and desorption of M-14 has been investigated by OECD 121 and in nine soils by M-223531-01-2, (2004), M-572869-01-1, (2016) and M-686386-02-1, (2020c). A summary of the sorption parameters derived for M-14 is given in Table 9.2.4-24.

A geometric mean K_{OC} value of **9.9 mL/g**, corresponding to a K_{OM} value of **50 mL/g** (K_{OM} K_{OC} 1.724), was used for M-14 in the modelling, with an arithmetic mean 1/n value of **0.942**.

Table 9.2.4- 24: Summary of sorption parameters derived for MAT4

	•	• •	(CA)	₩		41 ~	
Report reference	Soil	Texture	PH (CaCl ₂)	OC [S]	K _f (mL/g) _k ((ml/g)	1 //n
<u>M-223531-01-2</u>	n/a	n/a	V 6	om∕a .	n/a©		n/a
(2004)	n/a	n/a	2.5	n/a	ńQa"	ŐŽ.13*₺	W a
N 5720 (0 01 1		Loan	@°5_\$	j K.86° .	J 9.1765	9:8	×0.964
<u>M-572869-01-1</u>		Silt loam		21.9 °	0.2834	O14.9	0.937 Q.941
(2016)	Dollendorf II	Clay loam	7.3	× 4,8	, © 56014	11.7	Q :941
(2010)		Sandy Joan «	6.5	Q.5 ×	J0.1848	A2.3 (0.956
	LUFA 2.1	Sand S	\$3	©0.525°	0.631	S 3 %	1.022
M (0(20(01 1	LUFA 2.3 Q	Sandy loam	A 62 4	0.59	Ø.028 É	4.6	0.908
M-686386-01-1 (2020c)	LUFA 5M@ ,	Sandy Wam #	7.10	1 1 1	0.14	£1 0.7	0.892
(20200)	LUFA 65	Clayloam	73	√1.78 ©	Q.3	©16.9	0.936
	Frankenforst O	Silt load	6.9	2,4	Q.3 V.238	9.9	0.923
_	~ A	Silt load		€ Geome€	vic mean	9.9	-
				Arithme	tic mean	-	0.942

^{*} Excluded from calculations

M-15 (AE 1413903)

Physico-Chemical Properties

Structural Jormula

Common name

M-15 AE 14 3903; BCS-BA91072)

Chemical name (IUPAC)

35-dichoro-4-({[3-chloro-5-(trifluoromethyl)57yridine-2yl]metryl}carbamoyl)benzenesulfonic acid

Molar mass

469.64 g mol⁻¹

Water solubility

160000 mg L⁻¹ at 20°C (<u>M-633477-01-1</u>, 2018)

Vapour pressure

Assumed 0 Pa as worst case for modelling

Degradation in Aerobic Soil

The aerobic degradation and metabolism of M-15 in soil was investigated in the laboratory by $\underline{\text{M-}}$ 585202-01-1, (2016d).



A summary of the modelling endpoints derived for M-15 (KCA 7.1.2.1.1/10, M-685680-01-1, 2020) is given in Table 9.2.4- 25. A geometric mean Deg T_{50} value of **145 days** was used in the modelling for M-15.

A molar formation fraction of **0.0016** from fluopicolide was estimated by inverse modelling of all lysimeter study (M-687165-01-1, 2020c) based on a fixed DT₅₀ of 145 days.

Table 9.2.4- 25: Summary of modelling endpoints derived for M-15 under laboratory conditions (after M-685680-01-1, 20020)

Applied compound	Study	Soil	Model selected	normalised (d)	Deg Dso normalised
M-15	<u>M-585202-01-1</u>	Dollendorf II		1379°a	272.5aV 137.9V
	2016d		DE OP	39.6° 0 132.4°	132.4ªV
			, Y . 4	Geometric mean	

a – Pseudo-SFO value based on slow phase of Qecling (calculated as ln(2)/k2)

Plant uptake

As the metabolite M-15 (AE 1403903) has not been detected in the plants from totational crop studies, the uptake factor was set to a conservative default of 0.

Adsorption

The adsorption and desorption of M-15 has been investigated in four soils by M585208-01-1, (2017). Summary of the sorption parameters derived for M-15 is given in Table 9.2.4-26

A geometric mean $K_{\rm OC}$ value of 18.8 mL/g corresponding to a $K_{\rm M}$ value of 10.9 mL/g ($K_{\rm OM} = K_{\rm OC} \div 1.724$), was used for M=15 in the modelling with an arithmetic mean 1/n value of 0.937.

Table 9.2.426: Summary of sorption parameters derived for M-15

					1		
Report reference	Soil &	T'exture.	ṕľi (CaCl₂)≤	≫OC [%]	K _f (mL/g)	Koc (mL/g)	1/n
		, loamy@sand	0 5.4	1.8	0.431	23.9	0.953
<u>M-585208-01-1</u>	Døllendom II ≥	clay loams	7.5	5.2	0.728	14.0	0.920
(2017)		silt logner	6.0	2.4	0.500	20.8	0.923
		sandy loam	5.1	2.1	0.380	18.1	0.950
. //				Geomet	ric mean	18.8	-
4		Q		Arithme	etic mean	-	0.937

^{*} Excluded from calculations

II. Results and Discussion

Modelling reports utilising the core info document should have the substance data presented in the form as shown in Table 9.2.4-1 and Table 9.2.4-2.



Table 9.2.4- 27: Compound input parameters for fluopicolide and its metabolites – without aged sorption

D .	T T •.	F1 . 1.1	3.5.01	34.02	3.5.02±	
Parameter	Unit	Fluopicolide	M-01	M-02 (AE C657188)	M-03*	M-05 (AE 13≹¥122) #
			(AE C033711)	(AE C03/100)	(AE 0008000)	(AL 1344122)
Common						
Molar mass	(g/mol)	383.59	190.03	225.56	9 99.58	253.2
Solubility	(mg/L)	2.8	2220	115000	10	1200000
at temp.	(°C)	20	20	20		7 20
Vapour pressure	(Pa)	0 (default)	0 (default)	0 (default)	0 (default)	0 (defaulto)
at temp.	(°C)	20	20	20	20 🧷	₩ 20 ₩
Freundlich exponent	(-)	0.888	0.914	0.889	0.97	Q 0.9 0 2 4
Plant uptake factor	(-)	0.5	0.5	Q' (· 40° 4	
Walker exponent	(-)	0.7	Ø.7	0.7	₩ .7 √0°	© 0.7 💇
PEARL parameters			/ · · · · · · · ·			
Substance code	(-)	FLC	MQ	MQQ M	₩ M@\$*	M05
DT50	(days)	182.0	1.46.0) 406 E	1799	25.2 °
Molar activ. energy	(kJ/mol)	65.4	√95.4 √	65.4 4	Ø5.4 [©]	65.4
Kom	(mL/g)	155.3	\sqrt{14.0}	3.3	62.0	8.1
PELMO parameters		<i>\C</i> ' ,		,° ,		
Substance code	(-)	Fluopicolide	MÇ-01 ,<Ç	″ My 02 €	№ 603 @	M-05
Rate constant	(1/day)	0, 6 93809 O	0.004749	0.43321	0.938723°	0.027506
Q10	(-)	~ 2.58 ₺	0.004740	2.580	<u></u> 2.580°	°≫ 2.58
Koc	(mL/g) *	@ 26 <u>7</u> .\$\frac{1}{2}	2.5 15 2.5 15 4		O 1069 (14.0
MACRO parameters	*					
Substance code	(<u>-</u>)©	Fluopicolide	🍣 - ,	-27	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-
Exponent moisture	(-)	4 0.49	0.49	\$ 0.49 °	(° 02)	0.49
Exponent temperature	% (1/K) €	0,0 9 48 (0,00948	0.0948 &	0.0948	0.0948
Parameter	Unit	₩-10~	M-11/12	. Ø M-13	M-14	M-15
J. J.		(AE 1344 23)		Fluopicolide		
	%		AE 1344120)	(P3)		
	\$,0	0, 4				
Common	(/ 1)	Q271 14	287.19	24185	241 10	462.64
Molar mass	(g/mol)	2/1,5/8	28/.17	© 241.65	241.19	463.64
Solubility		100000	P BO S	, * \$000	15800	160000
at temp.	(,C):>	$\sum_{i=1}^{20}$	\$ 11 C \$ \$ \$	\$\frac{1}{2}\left(1 - C - 1\left(1)	20	20
Vapour pressure	(Pa)%	Ordefault)	default)	(default)	0 (default)	0 (default)
at temp.	(30)	200		20	20	20
Freundlich exponent				1.0	0.942	0.937
			0.7	0 0.7	0	0
Walker exponent				0.7	0.7	0.7
PEARL parameters				M13	N/1/	M15
Substance code	(-) `` (da*	WIIU S	V 1V1-2		M14	M15
DT50	(days)	65.4Q	×8/.6	20.7	9.4	145.0
Molar activ. energy	(kJ/mol) (mL/g)	&	65.4	65.4	65.4	65.4
Kom PELMO parameters	(mL/g)		V	0	5.7	10.9
Substance code	4"&	W 10 ~	M-11/12	M-13	M-14	M-15
	(1/ da y)	Mi-10 @ .≪0.0195 © 0	0.007913	0.033485	0.073739	0.004780
Rate constant	(1/dayy)	2.58	2.58	2.58	2.58	2.58
Q10 V V	(mI /a)	2.58 1.8	2.58	2.58	2.58 9.9	2.58 18.8
	MmL/g)	1.8	U	U	7.7	10.8
MACRO parameters						
Substance code	(1)	- 0.40	- 0.40	- 0.40	- 0.40	- 0.40
Exponentonoisture	(-)	0.49	0.49	0.49	0.49	0.49 0.0948
Exponent temperature	(1/K)	0.0948	0.0948	0.0948	0.0948	

^{*} Metabolite M-03 not simulated in alkaline soils



Table 9.2.4- 28: Compound input parameters for fluopicolide and metabolites – with aged sorption

Parameter	Unit	Fluopicolide	M-01	M-02	M-03*	M-05
1 ar ameter		Tuopiconac		(AE C657188)		
Common						
Molar mass	(g/mol)	383.59	190.03	225.56	9 99.58	753 2
Solubility	(mg/L)	2.8	2220	115000	△ 10	233.2
at temp.	(°C)	20	20	20	20	
Vapour pressure	(Pa)	0 (default)	0 (default)	0 (default)	0 (default)	0 Nefaulto
at temp.	(°C)	20	20	20	20 W	20 \$
Freundlich exponent	(-)	0.888	0.914	0.889	0.975	0 0 0 0 W
Plant uptake factor	(-)	0.5	0.51	i y		
Walker exponent	(-)	0.7	6	0.7 °	Q 7 0	
PEARL parameters	(-)	0.7	Q . /		4 ./	
Substance code	(-)	FLC	∠ MO1©°	√ Moo ^o v′	Mas Mas	MOS"
DT50	(days)	121.0	0 1460 (179 4	W103
Molar activ. energy	(kJ/mol)	65.4	140.0 °C		\$ 17.9 \$65.4	Ø51 &
Kom	(mL/g)	155.3	\$ 300.4 \$14.0 \$	₹ 3 3 €	062 04	8 1/2
k _{des}	(1/day)	0.035	14.0		02.0	
F _{ne}	(1/day)	0.0334				
PELMO parameters	(-)	0.5y8 ×			Į Š L	
Substance code	(-)	Flüopicolide	Ø M-010°	M-020	M-070	°≫ M-05
Rate constant	(1/day)			0 0 4325 17	0 038923 4	0.027506
Q10	(-) ×	Ç 0.00 5 √28	0.0040748		2 58 0	2.58
Koc	(mL/g)	2.58 267.7.S	Q.58 Q24.1	5.7	906.9	14.0
MACRO parameters	2	- Q				
Substance code	≪ (-) •	Fluopfeolide	o 8 .	P' 🖳 🗸		_
Exponent moisture	\$ (-) °	~ 49 @	\$ 49 V		₹ 0.49	0.49
Exponent temperature	(1/ K \$)	. 0.0948	0.0948	©0.0948	@ ₁ 0.0948	0.0948
Parameter	Nnit	√ M≰10 ″	M-41/12	M-13 &	M-14	M-15
		(AE Q44123)	(AE) 3441/19/	(Flappicolige-	(AE 1388273)	
		\(\hat{\phi}\)	AE 1344(20)	P3)*		
	L		-0-1011 <u>0</u> -0)			
Common C				, 0, 1		
Molar mass	g/mol/	271.17	287.17	241.55	241.19	463.64
Solubility	(mg/ f)	\$0000Q	1000	1000	15800	160000
at temp.	(<u>C</u>)	20	20	20	20	20
Vapour pressure	(Pa)	0 (default)	0 (default)	0 (default)	0 (default)	0 (default)
	$\mathcal{O}(\mathcal{C})$	20	20	20	20	20
Freundlich exponent	(-6)	1.0 Q		1.0	0.942	0.937
Plant uptake factor	(-)			0	0	0
Walker exponent	(-) <u>*</u>	0.7 M10Q 35A	§ _ 0 %7	0.7	0.7	0.7
PEARL parameters			Sy.			
Substance code		M10Q	№ M11-2	M13	M14	M15
DT50	(days)	\mathcal{C} 35 \mathcal{A}	87.6	20.7	9.4	145.0
DT50 Molar activ. energy Kom	(kJ/mol)	/ 165 5.4 <	65.4	65.4	65.4	65.4
120111	mL/	1.1 0	0	0	5.7	10.9
k _{des}	(1/day)		0	0	0	0
Fne V PELMO Parameters	(4) (a)		0	0	0	0
Substance code		M-10	M-11/12	M-13	M-14	M-15
Rate onctand	(1/4	0.019580	0.007913	0.033485	0.073739	0.004780
Q10	(1/day) (-)	2.58	2.58	2.58	2.58	2.58
Q10 Koc C	(mL/g)	1.8	0	0	9.9	18.8
IXOC W	(IIIL/g)	1.0	l o	l o	2.7	10.0



MACRO parameters						
Substance code	(-)	-	-	-	-	-
Exponent moisture	(-)	0.49	0.49	0.49	0.49	0.49 , °
Exponent temperature	(1/K)	0.0948	0.0948	0.0948	0.0948	0.094

^{*} Metabolite M-03 not simulated in alkaline soils

III. Conclusion

For the groundwater risk assessment of fluopicolide and its metabolites M-01, M-02 M-10, M-11/M-12, M-13, M-14, and M-15 the input parameters presented in this summary used in all calculations.

Assessment and conclusion by applicant:

This core modelling report was conducted according to FOCUS Degradation Kinetics (2006, 2010) and is considered valid to assess trigger and modelling endpoints for fluoricolide and its metabolites in groundwater.

PEC_{gw} for fluopicolide

metabolites in groundwa	ter.
$\mathbf{PEC}_{\mathbf{gw}}$ for fluopicolide	
Data Point:	KCPQ9.2.4.17692
Report Author:	
Report Year:	2 0020
Report Title:	2020 Fluopicolide (FLC) and metabolites PECgw FOCUS PEARL, PELMO and
₩	MACRO - Ge as seed treatment application in WOSR in Larope
Report No:	
Document No: Guideline(s) followed in	M-688 92-01-17
Guideline(s) followed in	M-68892-01-17 FOCUS 2014
study: Deviations from current	FOCUS 2014
	Mone . " " " " " " " " " " " " " " " " " "
test guidelin@	
Previous chaluation:	No not prevaously submitted
GLP/Officially 20	No, not conducted under GLP Officially recognised testing facilities
recognised testing	
GLP/Officially recognised testing facilities:	No, not conducted under GLP Officially recognised testing facilities
Acceptability/Rehability.	Y W W W

Executive Summary

Predicted environmental concentrations of the active substance fluopicolide and its metabolites M-01, M-02, M-03, M-05, M-10, M-11/M-12, M-13, M-14, and M-15 in groundwater recharge (PECgw) were calculated for the use in winter silseed rape in Europe, using the simulation models FOCUS PEARL 4.4.7 (Lostra et al. 2001), FOCUS PELMO 5.5.3 (Jene 1998; Klein 1995, 1999, 2011), and FOCUS MACRO 554.4 (Janvis 1994; Jarvis and Larsbo 2012). PECgw were evaluated as the 80th percentile of the mean annual leachate concentration at 1 m soil depth. Model parameters and scenarios consisting of weather, soil, and crop data were used as proposed by FOCUS (2014b).

I. Materials and Methods

Use of fluopicolide in winter oilseed rape was investigated in the report. Detailed application parameters are presented in Table 9.2.4-29



Table 9.2.4- 29:	Application data of	of fluopicolide according	to the use	pattern in Europe

Individual crop	FOCUS crop	Rate g/ha	Interval (days)	Plant interception (%)	BBCH stage (-)	Amount reaching soil	(())
Winter oilseed rape	Winter oilseed rape	12	-	0	Seed Featment	¥12 , \$\frac{1}{2}	

The calculations were based on the maximum intended application rate together with the maximum intended number of applications per season and the minimum interval between applications (where applicable).

The relative application dates were taken as the 7 days before the emergence date of winter oilseed rape. For winter oilseed rape, an injection depth of 3cm was used to simulate seed treatment applications.

Input parameters for PEC groundwater modelling are fully valuated and derived in the Core Modelling Information document (M-688306-01-1) 2020) and are summarised in Table 9.2.4-30 and Table 9.2.4-31.

Table 9.2.4- 30: Input parameters related to active substance fluopicobide and metabolites for PEC_{gw} calculations – with aged-sorption

					~~~		<u></u>
Parameter		Unit	Fluepicolide	MS01 (AE C6537fY)	M-02 (AF-057138)	(AE 0608000)	M-05 (AE 1344122)
Molar mass		(ggmol)	© 383,59°	<b>2</b> 190.03	225.56	°> 399.58	253.2
Solubility		(mg/L)	2.8	22570	115000	× ~(1)0	120000
at temp.	4	· (°CX	/ <u>@</u> 20 O	<b>~</b> 50°.0	\$\frac{1}{20} \text{ (c)}		20
Vapour pressure		(Pa)	(defautt)	Ø (defagAt)	(defarat)	(default)	0 (default)
at temp.	<i>\Q'</i>	(1 a) (C)	260	200	© 20	20	20
Freundlich		$\mathbb{O}^{\mathbb{Z}}(2)$	7 0 888 ~	v 0.014 °	D 0589	0.971	0.942
exponent			\$0.5 ×	\$0.5		0.571	0.542
Plant uptake			0 7 %	0.7	0.70	0.7	0.7
factor		<b>₩</b> Ū	0.7 v			0.7	0.7
Walker exponent		W () &		MO1	NAMO2	M03	M05
PEARL		(dayo)	\$10	A46.0	01.6	17.9	25.2
	~ ~	(kJ/mol)	\$21.0 \ \$\infty 65.45\$	65.4	65.4	65.4	65.4
Substance code		$(mL/g)_{\alpha}$		1400	3.3	62.0	8.1
DT50		(IIIL/g)	0.0456	. (	0	0	0
Molar activ.	a Q	VI/uay	, © .508		0	0	0
			. \$	* A	U	U	U
energy $\sim$ Kom			Fluopicolide @	Mæ01	M-02	M-03	M-05
		(1/day)	o most 720	0.094748	0.433217	0.038723	0.027506
k _{des}	~~		0.003/20	2.58		2.58	
F _{ne}		(-) *	2.38		2.58		2.58
PELMO	W.	(ph)/g).	© 267 V	24.1	5.7	106.9	14.0
parameters		<i>"O"</i>	, , , , ,	<b>)</b> •			
Substance code Rate constant		<i>6</i> 7					
Q10	W 7						
Koc 👸	Ş (	Š	» »				
MACROS parameters	.4						
parameters O		, *(J)*	Fluopicolide	-	-	-	-
Substance code	O,	<b>(-)</b>	0.49	0.49	0.49	0.49	0.49
Exponent C		(1/K)	0.0948	0.0948	0.0948	0.0948	0.0948
moisture "							
Exponent temp							
. г					l	l	



# Document MCP - Section 9: Fate and behaviour in the environment Fluopicolide + Fluoxastrobin FS 350

Parameter		Unit	M-10	M-11/12	M-13	M-14	M-15
			(AE 1344123)	(AE 1344119/	(Fluopicolide-	(AE 1388273)	(AE 1413903)
				AE 1344120)	P3)		$\mathscr{Q}^{\circ}$
Molar mass		(g/mol)	271.17	287.17	241.55	241.19	463-64
Solubility		(mg/L)	100000	1000	1000	<b>25</b> 800	1,590000
at temp.		(°C)	20	20	20	<b>\$ 20</b>	L 20 L
Vapour pressure		(Pa)	0 (default)	0 (default)	0 (default)	(default)	0 (default)
at temp. Freundlich		(°C)	20 1.0	20 1.0	20	20 0.942	
exponent		(-) (-)	0	0 0	0 0	0.942	
Plant uptake		(-)	0.7	0.7	0.7	0.70	
factor		( )	0.7		L		2 . 6 4
Walker exponent		(-)	M10	MA 1-2	20.7 ©	₩14 🛴	M15 (
PEARL		(days)	35.4	®7.6	~ 20.7 Ø	° 9.4√°	\$\frac{\pmatrix}{145.00}\tag{\tag{\tag{2}}}
parameters		(kJ/mol)		65.4	65,4	© 65€4 ^N ∘	65,4
Substance code		(mL/g)	1.1				10.9
DT50		(1/day)	0				
Molar activ.		(-)					
energy Kom		(-)	MQV0 L	" M-1\$\"12 %	$\sqrt{2}$ $\sqrt{2}$	Massa . A	
k _{des}		(1/day)	0.019580	0-007913	02933485	0.073739	0.004780
F _{ne}		(-)	\$ 2.58 °	2.58	2.58	2.58	<b>₹</b> 2.58
PELMO		(mL/g)	1.86	Q Q		<b>9</b>	≫ 18.8
parameters							
Substance code		<b>V</b>					
Rate constant		, Ø		Õ O			
Q10		~~~					
Koc	~	, <del>,</del>			<b>* * * * *</b>		
MACRO	Ñ	(O)		\$ 2"		4	
parameters Substance code		(-)			h who -	0.49	0.49
Exponent Exponent		(1/K)	0.49 <b>Q</b> .0948	\$ \$4.0048 \$	0048	0.49	0.49
moisture $\nearrow$		(1/K)		\$ 500 TO	0,0740	0.0740	0.0740
Exponent temp	O ^y	W.	\$ 4 A				
	M-03 not	şimulated)	n alkaline soils			I	
	~_@				, O'		
v					À Y		
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* Merabolite							
	<b>U</b>	À"					
$\bigcup$							

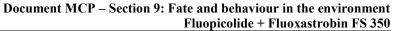




Table 9.2.4- 31: Input parameters related to active substance fluopicolide and metabolites for PECgw calculations – without aged-sorption

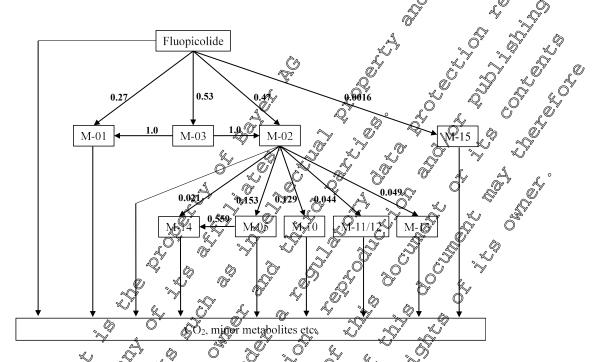
_			35.04	75.00	75.001	o - @/
Parameter	Unit	Fluopicolide	M-01	M-02	M-03*	M-05 (AE 13Å¥122) ∂
			(AE C053/11)	(AE C657188)	(AE 0608000)	(AE 134#122)
Molar mass	(g/mol)	383.59	190.03	225.56	399.58	253.2
Solubility	(mg/L)	2.8	2220	115000	<b>©</b> 10	120000
at temp.	(°C)	20	20	20	<b>2</b> 0	200
Vapour pressure	(Pa)	0 (default)	0 (default) 🔈	0 (default) ຼື	♥ 0 (default) 🕺	y 0 (default)
at temp.	(°C)	20	20	20 🔊	رُّم 20	20
Freundlich exponent	(-)	0.888	0.914	0.889	0.971	<b>3</b> 0.94 <b>2</b>
Plant uptake factor	(-)	0.5	0.5	0,	0	Q 6 4
Walker exponent	(-)	0.7	0.1	0Q"	· 947 4	, ° 6.7
PEARL parameters			DO"		Q' \0'	& _W
Substance code	(-)	FLC	, M01 o	©M02, ♥	∞ M03	、,≪ຶM0 <i>5</i> °♥
DT50	(days)	182.0	146 <b>9</b>	1.60	17.0	25.2
Molar activ. energy	(kJ/mol)	65.4	63A (	) 6 <b>5</b> 04 6	65.4	∕ <b>6</b> 5.4 , °
Kom	(mL/g)	155.3	<b>1</b> 24.0 ~	<b>3</b> 4.3	<b>∞</b> 2.0 ○	8.1 Ø
PELMO parameters					, O' &	
Substance code	(-)	Fluopicolide	M-0♥	, M-0Q″ ≤	Ć [™] M <b>-β</b> β [™] ,	Men 5
Rate constant	(1/day)	0.003809 %	0.000740	0.433217 S	0.0 <b>\$</b> \$723 @	0,027506
Q10	(-)	<b>\$</b> 258 €	0.104/48	2.58	2.58	<b>€</b> 2.58
Koc	(mL/g)	<b>2</b> 67.7₺	\$ 2.58\$	5.7 ₆ °	0 106 <b>Ú</b>	*> 14.0
	, ,		6° 24.10°		Ö 20 (	<b>,</b>
MACRO parameters	L	9 , 7 ,				V
Substance code	(-)	Flutpicolide	#- o		~ Q - B	-
Exponent moisture	(-)©	©0.49	0.49	0.49	0.49	0.49
Exponent temperature	(1/K)	△ 0.0948	£ 0.0948	\$ 0.0948	© 0.0 <b>294</b> 78	0.0948
Parameter	Unit (	M-10 a	MC11/12	M-13	M-14	M-15
(		(A 10 2 4 4 10 2)		- 0		
	<b>F</b> 1.	(AE 1344123)	(AF 1344 ₹ 9/	(FOManicalide_	(AE 1388273)	(AE 1413903)
Į Š		(AB)13444(20)	(AE 1344119/	(FCdopicolide-	(AE [*] 1388273)	(AE 1413903)
			(AE 1344119/ AE 1344120)	Pay	<b>7</b>	,
Molar mass	@mol)	20.17	7 M(J)	P P N N	241.19	463.64
Molar mass Solubility	g/mol) (mg/E)		7 M(J)	Pay	241.19 15800	463.64 160000
Solubility at temp.		201.17 (7 100000 207	7 M(J)	P P N N	241.19 15800 20	463.64 160000 20
Solubility at temp. Vapour pressure		20.17	7 M(J)	P P N N	241.19 15800 20 0 (default)	463.64 160000 20 0 (default)
Solubility at temp. Vapour pressure at temp.		201.17 (7 100000 207	AE 1344120) 287.17 0 1000 20	P25 201.55 1000 200	241.19 15800 20 0 (default) 20	463.64 160000 20 0 (default) 20
Solubility at temp. Vapour pressure at temp. Freundlich exponent		201.17 (7 100000 207	AE 1344120) 287.17 0 1000 20	P25 201.55 1000 200	241.19 15800 20 0 (default)	463.64 160000 20 0 (default)
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor		201.17 (7 100000 207	AE 1344120) 287.17 0 1000 20	P2 P3	241.19 15800 20 0 (default) 20 0.942 0	463.64 160000 20 0 (default) 20 0.937 0
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent	(mg/E) (*C) (*C) (*C) (-)* (-)*	201.17 (7 100000 207	AE 1344120) 287.17 0 1000 20	Po P	241.19 15800 20 0 (default) 20 0.942	463.64 160000 20 0 (default) 20 0.937
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters	(mg/E) (2G) (Pa) (°C) (-) (-)	201.17 (7 100000 207	AE 1344120) 287.17 0 1000 20	20 1.00 0 0.7	241.19 15800 20 0 (default) 20 0.942 0	463.64 160000 20 0 (default) 20 0.937 0
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code	(**C)**  (**C)*  (**C)**  (**C)*  (**C)*	201.17 (1) 1000000 207	AE 1344120) 287.17 0 1000 20	1.55 1000 20 20 0 (default) 20 1.0 0 0.7 M13	241.19 15800 20 0 (default) 20 0.942 0 0.7	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters	(days)	201.17 (1) 1000000 207	AE 1344120) 287.17 0 1000 20	1.55 1000 20 20 1000 1.0 0 0.7 M13 20.7	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4	463.64 160000 20 0 (default) 20 0.937 0
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar acciv. energy	(**C)**  (**C)*  (**C)**  (**C)*  (**C)*	201.17 (1) 1000000 207	AE 1344120) 287.17 0 1000 20	1.55 1000 20 20 0 (default) 20 1.0 0 0.7 M13	241.19 15800 20 0 (default) 20 0.942 0 0.7	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom	(days)	201.17 (1) 1000000 207	AE 1344120) 287.17 0 1000 20	1.55 1000 20 20 1000 1.0 0 0.7 M13 20.7	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters	(mg/b) (%C) (Pa) (°C) (-) (days) (kg/mol) (mL/g)	201.17 1000000 20 0 (deSault) 20 1.0 0 0 0 0 0 35 4 65.4	AE 1344120) 287.17 0 1000 20	1.55 1000 200 1000 0 (default) 200 1.0 0 0.7 M13 20.7 65.4	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar accordent PELMO parameters Substance code	(mg/b) (Pa) (°C) (-) (days) (hJ/mol) (mL/g)	20.17 100000 20 0 (deStult) 20 1.0 0 0 0 0 35,4 65.4 1.1	AE 1344120) 287.17 1000 20 0 (default) 20 1.0 0 M11-0 87.4 0 M-11/12	1.55 1000 200 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar accor, energy Kom PELMO parameters Substance code Rate constant	(mg/b) (%C) (Pa) (°C) (-) (days) (kg/mol) (mL/g)	20.17 1000000 20 0 (deSault) 20 1.0 0 0 0 35,4 65.4 1.1 M-10 0.049580	AE 134420) 287.17 1000 20 0 (default) 20 1.0 0 67  M11-3 87-6 65:4 0 M-11/12 0.007913	1.55 1000 200 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar acciv. energy Kom PELMO parameters Substance code Rate constant Q10	(mg/ls) (Pa) (Pa) (°C) (days) (kg/mol) (mL/ga) (1)	20.17 1000000 20 0 (deSault) 20 1.0 0 0 0 35,4 65.4 1.1 M-10 0.049580	AE 134420)  287.17  1000  20  0 (default)  1.0  0  M11-  87.6  63.4  0  M-11/12  0.007913  2.58	1.55 1000 200 0 (default) 200 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar accor, energy Kom PELMO parameters Substance code Rate constant	(mg/b) (Pa) (°C) (-) (days) (hJ/mol) (mL/g)	20.17 100000 20 0 (deStult) 20 1.0 0 0 0 0 35,4 65.4 1.1	AE 134420) 287.17 1000 20 0 (default) 20 1.0 0 67  M11-3 87-6 65:4 0 M-11/12 0.007913	1.55 1000 200 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc	(mg/ls) (Pa) (Pa) (°C) (days) (kg/mol) (mL/ga) (1)	20.17 1000000 20 0 (deSault) 20 1.0 0 0 0 35,4 65.4 1.1 M-10 0.049580	AE 134420)  287.17  1000  20  0 (default)  1.0  0  M11-  87.6  63.4  0  M-11/12  0.007913  2.58	1.55 1000 200 0 (default) 200 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc MACRQ arameters	(mg/ls) (Pa) (Pa) (°C) (days) (kg/mol) (mL/ga) (1)	20.17 1000000 20 0 (deSault) 20 1.0 0 0 0 35,4 65.4 1.1 M-10 0.049580	AE 134420)  287.17  1000  20  0 (default)  1.0  0  M11-  87.6  63.4  0  M-11/12  0.007913  2.58	1.55 1000 200 0 (default) 200 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc MACRO parameters Substance code	(mg/ls) (Pa) (Pa) (°C) (days) (ls/mol) (mL/g) (l/day) (ml/g)	201.17 1000000 20 0 (deSault) 20 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	AE 134420)  287.17  1000  20  0 (default)  1.0  0  M-11/12  0.007913  2.58  0	1.55 1000 200 0 (default) 20 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58 0	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58 9.9	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58 18.8
Solubility at temp. Vapour pressure at temp. Freundlich exponent Plant uptake factor Walker exponent PEARL parameters Substance code DT50 Molar activ. energy Kom PELMO parameters Substance code Rate constant Q10 Koc MACRO arameters	(mg/ls) (Pa) (Pa) (°C) (days) (kg/mol) (mL/ga) (1)	20.17 1000000 20 0 (deSault) 20 1.0 0 0 0 35,4 65.4 1.1 M-10 0.049580	AE 134420)  287.17  1000  20  0 (default)  1.0  0  M11-  87.6  63.4  0  M-11/12  0.007913  2.58	1.55 1000 200 0 (default) 200 1.0 0 0.7 M13 20.7 65.4 0 M-13 0.033485 2.58	241.19 15800 20 0 (default) 20 0.942 0 0.7 M14 9.4 65.4 5.7 M-14 0.073739 2.58	463.64 160000 20 0 (default) 20 0.937 0 0.7 M15 145.0 65.4 10.9 M-15 0.004780 2.58

^{*} Metabolit M-03 not simulated in alkaline soils



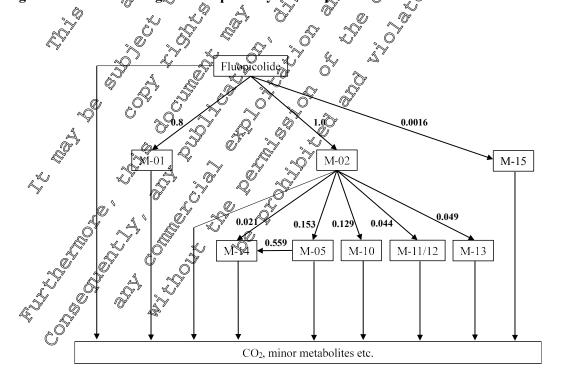
In acidic soils, the principle breakdown of fluopicolide in soil proceeds via formation of the M-03 metabolite, which splits to form the M-01 and M-02 metabolites, with M-01 and M-02 additionally being formed direct from fluopicolide [Figure 9.2.4-5].

Figure 9.2.4- 5: Degradation pathway for fluopicolide in acidic soils



In alkaline soils, degradation of M-03 is very rapid (DT $_{50}$  < 1 day) and no kinetic formation information can be derived. Therefore simulations for alkaline soil conditions are made assuming only direct formation of M-01 and M-02 from fluoricolide Figure 9.2.4-6.

Figure 9.2.4-©: Degradation pathway for fluopicolide in alkaline soils





These two pathways can be fully parameterised directly in FOCUS PEAR 4.4.4. However, due to the pathway limitations in FOCUS PELMO 5.5.3, three separate evaluations are required for each. Aged-sorption is significant for fluopicolide, and thus two sets of evaluations are conducted – with/without the use of aged-sorption. Thus, for PEARL four sets of model evaluations are conducted per SAP, whereas twelve sets of model evaluations are required for PELMO.

Table 9.2.4- 32: Degradation pathway related parameters for fluopicolide and its metabolites

metabolites	
Degradation fraction from → to	$FLC \rightarrow M01: 0.27$
(-) (FOCUS PEARL): acidic soils	$FLC \rightarrow M02: 0.77$
	$FLC \rightarrow M03 r 0.53$
	$FLC \rightarrow M1620.0016$
	$ M03 \rightarrow M01: 1.0$
	$M03 - M02 \cdot 10$ $\sim$ $V$
	$M02 \rightarrow M05 = 0.153$
	$MO2 \rightarrow MO0 \cdot 0.1240$
	$M02 \rightarrow NH1-2:69044$
	1102 / 11-2. W044 2 1 2 2 2 2 4 13:40:40 .
Į.	M02 × M14; 0021; 0
	M65→ M44: 0.559
Degradation fraction from → to (-) (FOCUS PEARL): alkaline soils	FLC → M01: 0.27 FLC → M03; 0.53 FLC → M16; 0.0016 M03 → M04: 1.0 M02 → M05; 0.153 M02 → M16; 0.129 M02 → M13; 0.049 M02 → M14; 0.021 M03 → M4: 0.539 FLC → M01: 0.89 FLC → M01: 0.89 FLC → M10: 0.129 M02 → M15; 0.044 M02 → M15; 0.049 M02 → M16; 0.0016 M02 → M16; 0.0016 M02 → M16; 0.0016 M02 → M16; 0.044 M02 → M16; 0.044 M03 → M17; 0.044 M03 → M17; 0.044 M04 → M14; 0.591 M05 → M14; 0.591
(-) (FOCUS PEARL): alkaline soils ©.	FLC # M02 10 2 0 2
(-) (FOCUS PEARL): alkaline soils &	IFLOW MISO 001
	$M02 \rightarrow M95 \cdot 0.143$
	MO2 →M10: 0.129
	M02 M11-2: 0.044
	$\begin{array}{c} M_1 & M_2 & M_3 & M_4 & M_5 & M_6 &$
	M92 → M14: 0:021
	$ \begin{array}{c} M02 \rightarrow M 3.0.049 \\ M92 \rightarrow M14:0.021 \\ M05 \rightarrow M14:0.559 \end{array} $
	Pull 1.000
Partial DT ₅₀ /Degradation rate from to	Pathway 1: Active Substance M-02/387,234 / 0.0017900
(day or 1/day) (FOGUS PALMO) Sacidic	Active Substance M-02/38/134/0.001/900
soils PACIONE	Active Substance — M. 33: 343.396 / 0.0020190
	Active Substance (TDS) -> M-02: 257.447 / 0.0026920
	Active Substance (TDS) — M-03: 228.302 / 0.0030360
	Active Substance BRACO2: 0
	101-03 → 101-02: 17.9 / 1038/230
	M-02 M-03 10.439 / 0.0002/90
	M-02 → M-10: 12-03 / 0.0558850
	$100 + 102 \rightarrow 100 + 100 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 10000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 1000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 100000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 10000 = 100000 = 10000 = 10000 = 100000 = 100000 = 10000 = 100000 = 100000 = 100000 = 100000 = 100000 = 100000 = 100000 = 100000 = 100000 = $
	M-02 BR/CO2: 2.296 / 0.3018930
	$[M-0.5] \rightarrow M-10.45.081 / 0.0153/60$
	$M_{\bullet}00 \rightarrow B_{\bullet}CO2: 57.143 / 0.0121300$
	M*10 → M/K/CO2: 35.4 / 0.0195800
	Active Substance  M-02/387, 234 / 0.0017900  Active Substance  M-03: 343.396 / 0.0020190  Active Substance  (TDS)  M-02: 257.447 / 0.0026920  Active Substance  BR  O2: 0  M-03  M-02: 17.9 / 0.0387230  M-02  M-05: 10.458 / 0.0662790  M-09  M-10: 12/03 / 0.0558850  M-02  BR/CO2: 2.296 / 0.3018930  M-05  M-10: 45.081 / 0.0153760  M-05  M-10: 45.081 / 0.0121300  M-07  BR/CO2: 35.4 / 0.0195800  M-14  BR/CO2: 9.4 / 0.0737390  Pathway 2:  Active Substance  M-02: 387.234 / 0.0017900
	D. ( ) - 2
	Painway 2:
	Active Substance $\rightarrow$ M-02: 38/.234 / 0.001/900
	Active Substance → M-02: 387.234 / 0.0017900 Active Substance → M-03: 343.396 / 0.0020190 Active Substance (TDS) → M-02: 257.447 / 0.0026920
	Active Substance (TDS) $\rightarrow$ M-02: 257.447 / 0.0026920
	Active Substance (TDS) → M-03: 228.302 / 0.0030360 Active Substance → BR/CO2: 0
	$M-03 \rightarrow M-02$ : 17.9 / 0.0387230
	$M-03 \rightarrow M-02$ : 17.9 / 0.0387230 $M-02 \rightarrow M-11/12$ : 36.364 / 0.0190610
	$M-02 \rightarrow M-11/12: 36.364 / 0.0190610$ $M-02 \rightarrow M-13: 32.653 / 0.0212280$
	$ VV-UZ  \rightarrow  VV-V  = 1.5.52.035 / 0.0212280$  VV-UZ  = 1.764 / 0.3030410
	$M-02 \rightarrow BR/CO2$ : 1.764 / 0.3929410 $M-11/12 \rightarrow BR/CO2$ : 87.6 / 0.0079130
	$M-11/12 \rightarrow BR/CO2: 87.6 / 0.0079130$ $M-13 \rightarrow BR/CO2: 20.7 / 0.0737390$
	IVI-13 → DIV/CO2, 20.7 / U.U/3/390



	Pathway 3:
	Active Substance → M-01: 674.074 / 0.0010280
	Active Substance $\rightarrow$ M-03: 343.396 / 0.0020190 Active Substance $\rightarrow$ M-15: 113750 / 6.09E-06 Active Substance $\rightarrow$ BR/CO2: 917.339 / 0.000756 Active Substance (TDS) $\rightarrow$ M-01: 448.188 / 0.0015470 Active Substance (TDS) $\rightarrow$ M-03: 228.02 / 0.0030366 Active Substance (TDS) $\rightarrow$ M-15: 75625 / 9.17E-06 Active Substance (TDS) $\rightarrow$ BR/CO2, 609.879 / 0.0011370
	Active Substance → M-15: 113750 / 6.09E-06
	Active Substance $\rightarrow$ BR/CO2: 917.339 / 0.000756
	Active Substance (TDS) $\rightarrow$ M-01: 448.1 $\langle 8 \rangle$ / 0.0015470 $\langle 6 \rangle$
	Active Substance (TDS) → M-03: 228 302 / 0.0030366
	Active Substance (TDS) → M-15: 75675 / 9 17E-06
	Active Substance (TDS) $\rightarrow RR/CO$ 609 879 / 0 00 1370
	$\begin{array}{c} \text{In the two substance (1DB)} & \text{Did cos 2,000} & \text{1.07} & \text{1.03} & \text{1.15} & \text{1.0} \\ \text{Im } 0.3 \rightarrow \text{M} & 0.1 \cdot 15 & 0.7 & 0.387230 & \text{1.05} & \text$
	$M \cdot 01 \rightarrow PP / Cos \cdot 1.46 / 0.00470 $
	M 15 \ DD/CO2: 145 / 0.004 900
	$\frac{101-13 \rightarrow BK/CO2. 143 / 0.004 / 600}{2}$
Partial DT ₅₀ /Degradation rate from $\rightarrow$ to	Active Substance (TDS) → M-01: 448.148 / 0.0015470  Active Substance (TDS) → M-03: 228 / 02 / 0.0030366  Active Substance (TDS) → M-15: 75625 / 9.17E-06  Active Substance (TDS) → BR/CO2 / 609.879 / 0.0011370  M-03 → M-01: 17.9 / 0.0387230  M-01 → BR/CO2: 146 / 0.004 / 480  M-15 → BR/CO2: 145 / 0.004 / 800  Pathway 1 / Active Substance → M-02: 182 / 0.0038090  Active Substance (TDS) → M-02: 121 / 0.0037280  Active Substance → BR/CO2: 0
(day or 1/day) (FOCUS PELMO) ^a : alkaline	Active Substance → M-02. 182 0.0038090  Active Substance (TDS) → M-02: 121 / 0.0037280
soils	Active Solbstance (TDS) $\rightarrow$ M=52: 121/0.0057280 $\sim$
	Acting Substance → BR/CQ2:0 & S
	$M-Q^2 \rightarrow M^2$ 05: 10 458 / 0 0662790
	$M-02 \rightarrow N-10$ : $2.403  Q.0558850  $
×	M-02, → M-14:76.190√0.0099980 0 √ √,
	M-02 >> BR0CO2; 20296 / 03018930
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
l	M-05 → BR/C@2. 57 A49 / 0.QA21300 \$ . Q .
	M-10→ BR/CO2: 35 4/0.0155800
	$M-14 \rightarrow BRCCO2: 94/0.0437390$
	Active Substance — \$\mathbb{B}R/CO2\cdot 0 \\ M-\O2\cdot M-\O5\cdot 10\cdot \( \delta \) \( \del
	Active Substance $\rightarrow \mathbb{B}R/CO2.0$ $M-02 \rightarrow M-05: 10.458 / 0.0662790$ $M-02 \rightarrow M-10: 47.403 / 0.0558850$ $M-02 \rightarrow M-14: 76.190 / 0.0096980$ $M-02 \rightarrow BR/CO2: 24.296 / 0.3018930$ $M-05 \rightarrow M-14: 45.81 / 6.0153760$ $M-10 \rightarrow BR/CO2: 57.443 / 0.0421300$ $M-10 \rightarrow BR/CO2: 35.34 / 0.0437390$ $M-14 \rightarrow BR/CO2: 37.34 / 0.0437390$
	Active Substance $\rightarrow$ M-02: 182 / 0.0038090
	Active Substance (QDS) $\rightarrow$ M-02. 121 / 0.0057280
	Active Sinstance $\Rightarrow$ BR CO2: 0
	M-02 -M-11 12: 36.364 / 0.67 90610
	791-02 <del>- 301-11 18/2: 30.304 / 0.00 90010</del>
	$M-02 \xrightarrow{\sim} M_{-1}$ 32.6 $\bigcirc / 0.0212280$
	M-0\( \rightarrow \rightarrow \text{BR/CO2}; \frac{1}{2},764 \rightarrow \text{339294\( \text{50} \)}{0}
	M-11/12 → BR/CÖ2: 87 5 / 0.0079130
	M-13 BR/C 2: 20 7 0.07 7 390
	Pathway 3:
	Active Sobstance $\rightarrow M$ -Q: 227.500 / 0.0030470
	Active Substance → M-15: 113750 / 6.09E-06
	Acting Subs@nce → BR/CO2: 917.339 / 0.000756
	Active Substance (PDS) → M-01: 151.250 / 0.0045830
	Active Sobstance (TDS) → M-15: 75625 / 9.17E-06
	Active Substance (TDS) → BR/CO2: 609.879 / 0.0011370
	M-005 → BROCO2: 146 / 0.0047480
	Pathway 3:  Active Substance → M-O: 227.500 / 0.0030470  Active Substance → M-15: 113750 / 6.09E-06  Active Substance → BR/CO2: 917.339 / 0.000756  Active Substance (TDS) → M-01: 151.250 / 0.0045830  Active Substance (TDS) → M-15: 75625 / 9.17E-06  Active Substance (TDS) → BR/CO2: 609.879 / 0.0011370  M-02 → BR/CO2: 146 / 0.0047480  M-75 → BR/CO2: 145 / 0.0047800
Conversion factor from to	
(_) (FOOTIS MACRON) asides sails	
Conversion factor from to to (-) (FOCUS MACRO): acidic soils  Conversion factor from to (-)	
	- 4
(-) (FOCUS MACRO) ^b alkaling soils	4
a Calculated as (Q2) / PSO × formation fraction	

^a Calculated as  $\mathcal{Q}(2)$  /  $\mathcal{D}(5)$  × formation fraction  $\mathcal{Q}(2)$ 

Plant uptake parameters, in different leaching models, define the ability of plant roots to transport a solute into the plant, in comparison to the water uptake (that is, the ratio between pesticide mass uptake flux and water volume uptake flux, normalised to the aqueous concentration of the pesticide outside the root). For fluopicolide and M-01 the plant uptake factor was set to the value of 0.5; for all the other metabolites the plant uptake factors were set at 0.

b Calculated as molar mass predecessor × formation fraction



M-11/12 is a mixture of two isomers M-11 and M-12 in the ratio M-11:M-12  $\approx$  60:40. PECgw calculations are conducted for M-11/12 and the results then split in the ratio 60:40 to derive PECgw values for M-11 and M-12. Groundwater simulations using MACRO 5.5.4 was carried out for fluopicolide only.

Following the proposal of the FOCUS working group on groundwater scenarios (FOCUS 2014), the concentrations in the percolate at 1 m depth were evaluated. This shallow depth reflects a worst case with respect to the assessment of a potential groundwater contamination. The effective long-term groundwater concentrations will be even lower due to dilution in the upper groundwater (ayer.

# II. Results and Discussion

An overview of the PECgw values obtained with individual FOCUS models is given in Table 9.2.4-33 to Table 9.2.4-36 (PEARL), Table 9.2.4-37 to Table 9.2.4-400 ELMO).

Table 9.2.4- 33: Maximum FOCUS PEARL PECgw results of fluopicolide and its metabolites in μg/L for the uses assessed—acidic soils, with aged-sorption

Uga mattaun			80 th percentile PE						,
Use pattern	FLC		M-02 M-03 M						
WOSR, 12 g/ha	0.006	0.752	0.002 0.065 0.0	0.150	0.028	0.019	£0,222	<b>40</b> .008 <b>43</b> 0.0	006

Table 9.2.4- 34: Maximum OCUS PEARL PECgw results of fluoricolide and its metabolites in µg/L for the uses assessed—accidic oils, without aged-sorption

Ugo nottown		86 percentile PECgw at 1 m soil depth (μg/b) - PEARL									
Use pattern								M-12 M-13			
WOSR, 12 g/ha	$0.043_{\ell}$	, 0.77	0.00%	0.020	03052	<u>0</u> 225	&Q.092 ₀	0.061 0.049	0.023	0.006	

Table 9.2.4-35: Maximum FOCUS PEARL PLCgw results of fluoricolide and its metabolites in ug/L for the uses assessed alkaline soils, with aged-sorption

Usa nattann s										
Use pattern	FLC		M-02	<b>№</b> 205	″M-10 @	/ M-140°	M-12	M-13	M-14	M-15
WOSR, ∤€g/ha	0.00	0.230	<b>Q</b> \$ <b>0</b> 01	0.061	0.218	0.089	0.060	0.047	0.021	0.006

Table 9.2.4- 36: Maximum FOCUS PEARL PECgroresults of fluopicolide and its metabolites in fug/L for the uses assessed – alkaline soils, without aged-sorption

Uga natta	(	80 th percentile PECgw at 1 m soil depth (μg/L) - PEARL									
Use pattern	FL C	MQ01	M-02 M-05	M-10	M-11	M-12	M-13	M-14	M-15		
WOSR, 12 g/ha	0. <b>Q</b> 43	<b>Q</b> .752	0.003 0.067	0.222	0.091	0.061	0.048	0.022	0.006		

Table 9.2.4- 37. Maximum FOCUS PELMO PECgw results of fluopicolide and its metabolites in µg/L for the uses assessed – acidic soils, with aged-sorption

80 th percentile PECgw at 1 m soil depth (μg/L) - PELMO												
	Use pattern	FLC		M-02								M-15
	WOSR, 12 g/ho	0.006			0.009		0.184		0.052	0.015	0.020	0.005



Maximum FOCUS PELMO PECgw results of fluopicolide and its **Table 9.2.4-38:** metabolites in µg/L for the uses assessed – acidic soils, without agedsorption

II 0440		80 th percentile PECgw at 1 m soil depth (μg/L) - PELMO								
Use pattern	FLC	M-01						M-12 M-13		
WOSR, 12 g/ha	0.038	1.021	0.008	0.018	0.067	0.186	0.078	0.052 0.015	0.021	0,063

Maximum FOCUS PELMO PECgw results of flyopicolide and its Table 9.2.4- 39: metabolites in μg/L for the uses assessed – alkaline soils, with aged-sorption

Use pattern		80 th percentile PECgw at 1 m soil depth (μg/L) - PSLMO								
	FLC	M-01	M-02	M-05 M-10	M-Q	M-12	M-13	M-14℃	ĭM-1 <b>©</b> ″	
WOSR, 12 g/ha	0.006	1.002	0.003	0.0580 0.180	0.077	<b>9</b> ,052	<b>Q</b> .0050	0.015	0.039	

Maximum FOCUS PELM@PECgw results of Quopicolide and its metabolites in µg/L-for the uses assessed alkaline soils, without aged-

WOSR, 12 g/ha	0.006	1.002	0.003	0.0580	0.180	0.077	<b>9</b> ,052	Q.005 Ó	0.015	0.039
				(4 .	~~~			picolide a		
<b>Table 9.2.4- 40:</b>	Ma	vimum 1	FOCUS	PP MA	\$ \$\text{FC}	v recial	of Maria	nica ida a	ødite ≜	-
1 auto 7.2.4- 40;	mei	tabolites	in µg/I∉	for the	ises asse	essed – 2	alkaline	piconue a soils, with	noutæse	ed- Ø
	sor	ption	<b>FB</b>						J.,	
	1	•	Oth Dorgon	4616 DE C	Su at 1	m soil Mo	)` <u>√_″</u> opth (ita/i	L) FELM		
Use pattern	FLC	M-01	M-02	M-05/	M-HO	M-11	VI-12	M-13	M ₇ 1,4	M-15
WOSR, 12 g/ha	0.038	1.001	0.005	0.063	<b>%</b> 82	<b>9</b> .077	0.052	0.065	0.020	0.005
		<i></i>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		V Q	<b>/</b>		<u> </u>	
Detailed results f	or all so	cenarios	for FOC	US PEA	RL, FO	CUSZPI	ELMJO 8	and FOCK	DS MAC	CRO are
listed in the follow	ving sub	sections	Mable 95	2.4- 41 to	Takone S	9.2.4- 49				
	<b>%</b>	Y	(Q) .a.		Ť á					
			Z,				<b>W</b>			
Use pattern  WOSR, 12 g/ha  Detailed results f listed in the follow		L Ô		' J		. O .		<b>"</b> \		
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# Winter oilseed rape 12g / ha

# **Annual application**

Table 9.2.4- 41: FOCUS PEARL, PECgw results of fluopicolide and its metabolites — 12 g/ha annual seed treatment application — acidic soils with aged-sorption

Cuan	Camaria		80th percentile PECgw at 1 m soil depth (µg/L) - PEARL									
Crop	Scenario	FLC	M-01	M-02	M-03	M-05	M-10	M-11 _₄	<b>M-12 M</b>	M-13	M-14	M-15@
WOSR	Chateaudun	< 0.001	0.663	< 0.001	0.025	0.009	0.150	0.018	0.006	0.106	0.000	0.006
	Hamburg	0.005	0.752	0.002	0.065	0.022	0.147	0.028	0.019	0.222	0.008	0.005
	Kremsmunster	0.003	0.546	0.001	0.037	, 0.012	0.076	<b>Q</b> 013				0.003
	Okehampton	0.006	0.509	0.002	0.044	0.014	0.073	0.014	0.009	0.11 <b>3</b> ©		0.003
	Piacenza	0.003	0.448	0.001	0.024	0.007	0.05%	$0.097^{\circ}$	0.065	0.064	0.004	0.003
	Porto	0.001	0.443	0.002	<b>20</b> 933	0.010	0.071	0.01	0.007	<b>1</b> 999	00004	Q <b>Ø</b> Ő3

Table 9.2.4- 42: FOCUS PEARL, PECgw results of fluopicolid and its metabolites 12 g/ha annual seed treatment application – acidic soils, without aged sorption

Cron	Scenario		80th percentile PECgwat 1 m soil depth (μgC) - PLO								RL 🙈	
Crop	Scenario	FLC	M=01	MØ2	M-03	M-05	<b>M</b> 10	Mo 1	M-12	<b>M</b> -13	<b>M</b> -14	M-15
WOSR	Chateaudun	0.005	0.698	<b>6</b> 0.001	<b>3</b> 9.003	©∕:029 ₍	<b>3</b> .111 _.	@0.092 _×	<b>3</b> .061	ÇŎ.017°	<b>%</b> .010	0.006
	Hamburg	0.043	0.771°	$ eq 0.004$ $^{\circ}$	0.020	0.072	0.2250	$0.087^{\circ}$	®0.0 <b>5</b> %	0.049	0.023	0.005
	Kremsmunster	0.030	0.560	0.002	0.012	0.041	0.143	0.045	0,030	0.022	0.013	0.004
	Okehampton	0.041	0.515	0.903	<b>6</b> ,018	09047	0.115	0.044	Q 029	<b>3</b> .024	0.015	0.003
	Piacenza	Ø.022	0.465	Ø.002 &	0.010	0.027	₈ 0.066°	Ø.035 <i>/</i>	90.023	0.013	0.008	0.003
	Porto	0.017	ა.45%	0.00	0.01	0.036	0.095	0.043	0.025	0.019	0.011	0.003

Table 9.2.4- 43: FOCUS REARL PECgw results of Euopicolide and its metabolites – 12 g/ha annual seed treatment application – alkaline soils, with aged-sorption

Cwan	Scenario 🐥	<b>V</b>	80 ³ \; I	oercentile	e PECgv	vat 1 m	soji dej	oth (μg/L	) - PEA	RL	
- &	(A)	ECC	<b>M</b> -01			M-10		M-12	M-13	M-14	M-15
WOSR	Chateaudun	×0.001	0.644	×0.001	0.023	0.105	0.089	0.060	0.016	0.008	0.006
		√0.00 <u>5</u> ⊘	0.730	0.004	0.061	0.218	0.088	0.058	0.047	0.021	0.005
	Kremsminster 4	0.009	0.\$30	<b>Q.</b> 000	0.034		0.045	0.030	0.020	0.011	0.003
	Okehampton &	Q <b>3</b> 006	<b>9</b> 494	<b>%</b> .001	90.041	<b>0.111</b>	0.044	0.029	0.023	0.013	0.003
	Piaconza 💍		√0.43 <i>5</i> √	70.000	0.023	0.064	0.034	0.023	0.013	0.007	0.003
	Porto	7 0.0Qb	0.439	0.001	0,30	0.090	0.043	0.028	0.017	0.010	0.003

Table 9.2.4- 44: FOCUS PEARL ÆECga results of fluopicolide and its metabolites – 122/ha annual seed treatment application – alkaline soils, without aged-sorption

Cron	Scenario		80 th percentile PECgw at 1 m soil depth (μg/L) - PEARL										
Crop	. 17, 2, 0	FL@	M-0₽	M-02	M-05	M-10	M-11	M-12	M-13	M-14	M-15		
WOSR	Chate dun U	0,005	0.670	< 0.001	0.026	0.108	0.091	0.061	0.017	0.009	0.006		
	Handburg 🗐	<b>^©</b> ,043	0.752	0.002	0.067	0.222	0.087	0.058	0.048	0.022	0.005		
4		0.030	0.544	0.001	0.038	0.111	0.045	0.030	0.021	0.012	0.004		
	Akehampton &	0.041	0.503	0.002	0.044	0.113	0.044	0.029	0.024	0.014	0.003		
	Piacenza	0.022	0.451	0.001	0.026	0.066	0.034	0.023	0.013	0.008	0.003		
	Porto	0.017	0.444	0.003	0.034	0.094	0.043	0.029	0.019	0.011	0.003		



Table 9.2.4- 45: FOCUS PELMO, PECgw results of fluopicolide and its metabolites – 12 g/ha annual seed treatment application – acidic soils, with aged-sorption

Crop	Scenario		80 ^t	^h percen	tile PEC	gw at 1	l m soil	depth					
Crop	Scenario	FLC	M-01	M-02	M-03	M-05	M-10	M-11					
WOSR	Chateaudun	< 0.001	0.979	< 0.001	< 0.001	0.021	0.095	0.078	0.052			$0.005^{\circ}$	
	Hamburg	0.003	1.024	0.003	0.006	0.062	0.184	0.073	0.049		0.020		
	Kremsmunster	0.002	0.776	0.001	0.003	0.037	0.119	0.049	0.033	0.007			
	Okehampton	0.006	0.624	0.002	0.009	0.046	0.114	0.044	0.030	0.00%	0.015	ð.003¢	
	Piacenza	0.002	0.644	0.002	0.004	0,931	0.076	0.041	0.027	0,006	0.040	0.003	
	Porto	0.003	0.575	0.005	0.008	0.042	0.098	0.044	0.030	<b>@</b> 009	<b>0</b> -012	9.003	

Table 9.2.4- 46: FOCUS PELMO, PECgw results of fluopicolide and its metabolites—

12 g/ha annual seed treatment application—acidic soils, without aged—sorption

Cron	Scenario		80	th percen	rcentile RECgw at 1 m wil depth (μg/L) – PELMO							
Crop	Scenario	FLC	M-01	M=02			M-10			M-13		
WOSR	Chateaudun	0.001							<b>9</b> .052			
	Hamburg	0.029	1.021	©0.00 <b>6</b>				0.07≰	/ 0.04 <b>&amp;</b> }	0.016	0.020	0.005
	Kremsmunster	0.021	0.774	0.0 <b>02</b> ″		0.047		0.048		0,007	0.013	0.004
	Okehampton	0.038	0 <b>£¥</b> 0		0.018					<b>.0</b> 0010		
	Piacenza	0.018		<b>. 20</b> .003	<b>30</b> .010	@.033	<b>0</b> 0.077,	0.040	©.027	o.007°	0.010	0.003
	Porto	0.025	0.56%	0.008	0.01	$0.043^{\circ}$	0.104	0.044	0.030	0.009	0.013	0.003

Table 9.2.4- 47:

FOCUS PELMO, PECow results of fluopicolide and its metabolites –
12 g/ha annual seed ocatment application – alkaline soils, with agedsorption

Cuon	Scenario		80th p	ercentile					) - PEL	MO	
Crop	Scenario	FEC	<b>M</b> -01	^M-02 ↓	M-05	<b>₩I-10</b>	%M-11€	M-12	M-13	M-14	M-15
WOSR	Chateaudun,	€9.001	®.953&	<b>(</b> 0.00 <b>)</b>				0.052	0.005	0.003	0.007
	Hamburg 💇	9.003	1.002	0.002	0,058	0.180	0.073	0.049	0.005	0.015	0.019
	Kremsmunster 🖔		0.756	<0.0001	0.034		<b>@</b> 049	0.033	0.004	0.007	0.012
Ê	Okehampton Piacenza	0.006	<b>6</b> 614	Q.001	0.044	0.112 ₀	0.044	0.029	0.003	0.009	0.014
4	1 Ideeliza	°°9.002 €	$_{J}0.628$	$\sqrt[8]{0.00}$	0.029	0.076	0.041	0.027	0.003	0.007	0.009
	Porto 💝 .	¥0.00 <b>3</b> Ş	0.564	0.003	0@39	0.095	0.044	0.029	0.003	0.008	0.012

Table 9.2.4-48: FOC S PELMO, VECgov results of fluopicolide and its metabolites –
12 g/ha agriculture of the supplication – alkaline soils, without agedsorption

Crop [≪]	Scenario	4	<b>80th</b>	percentil	e PECg	w at 1 n	n soil de	pth (μg/I	L) - PEL	MO	
Crop	Scenario V	FLÇ	″M-0∙Q	M-02	M-05	M-10	M-11	M-12	M-13	M-14	M-15
WOSR	Chateaudun	0.001	0.959	< 0.001	0.022	0.094	0.077	0.052	0.003	0.008	0.005
	Hamburg 🐧 🐧	<b>QQ</b> 029	<b>7</b> 0001	<b>%</b> 004	0.063	0.182	0.071	0.048	0.015	0.020	0.005
	Kremsmunster	<b>3</b> 0.021	0.756@	0.001	0.038	0.117	0.048	0.032	0.007	0.012	0.004
	Okehampton C	0.038	0.60	0.003	0.046	0.112	0.043	0.028	0.009	0.015	0.003
	Piacenta	0.018	0.633	0.002	0.032	0.076	0.040	0.027	0.007	0.010	0.003
	b _ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0.025	0.559	0.005	0.041	0.101	0.044	0.029	0.009	0.012	0.003



# Table 9.2.4- 49: FOCUS MACRO, PECgw results of fluopicolide – 12 g/ha annual seed treatment application

Crop	Scenario	80 th percentile PECgw at 1 m soil depth (µg/L) - MACRO Fluopicolide
WOSR	Chateaudun	< 0.001

#### III. Conclusion

The predicted environmental concentrations in groundwater (PEC_{gw}) of the active substance fluopicolide and its metabolites M-01, M-02, M-03, M-05, M-10, M-11, M-11, M-14, and M-05 were calculated for use in oil seed rape (winter).

The overall maximum PEC_{gw} value for fluopicolide was 0.042 µg/L. The metabolites M-02, M-03, M-05, M-11, M-12, M-13, M-14 and M-15 were also predicted to feach groundwater at concentrations below 0.1 µg/L. Two metabolites M-01 and M-10, were predicted to reach groundwater at concentrations in excess of 0.1 µg/L. The overall maximum concentrations were 1024 µg/L for M-01 and 0.225 µg/L for M-10. The non-relevance of these metabolites has been addressed in Document N4 using the assessment scheme described in the Suidance Document On The Assessment Of The Relevance Of Metabolites In Groundwater Of Substances Regulated Index Council Directive 91/414/EEC (Sanco/221/2000 —Revision 10 —Final 25 February 2003).

# Assessment and conclusion by applicant

The risk assessment report was conducted according to POCUS (2013) and is considered valid to assess predicted environmental concentrations in groundwater (PEC_{GW}) for fluopicolide and its metabolites in oil seed rape (winter).

#### PECgw for Quoxastrobin

No groundwater assessment was coquired for flaw xastrobin

# CP 9.2.4.2 Additional field tests

Given the results of the calculations for predicted environmental concentrations in groundwater for this seed treatment show no concerns for fluoricolide and its metabolites no further field tests are needed or required for this formulation.

# CP 9.2.5 Stimation of consentrations in surface water and sediment

Predicted environmental concentrations fluopicolide and its metabolites M-01 (AE C653711), M-02 (AE C657188) and M-03 (AE 0608000) in surface water (PECsw) and sediment (PECsed) were calculated for the use in Europe using the tiered FOCUS Surface Water approach. All relevant entry routes of a compound into surface water (principally a combination of spray drift and runoff/erosion or drain flow) were considered in these calculations. FOCUS Steps 1-3 calculations were performed for



fluopicolide and M-03 (AE 0608000) and FOCUS Step 1-2 calculations for the metabolites M-01 (AE C653711) and M-02 (AE C657188).

Metabolites M-01, M-02 and M-03 are relevant for the aquatic risk assessment. No metabolic is relevant for sediment risk assessment.

M-01 was the only major metabolite detected in water sediment systems reaching a maximum of 20.3% in the total system (sediment compartment maximum 3.9%, water compartment maximum 18.2%). M-02 (AE C657188) was also detected as a significant minor metabolite >5% at 3 consecutive timepoints and increasing at final timepoint, reaching a maximum of 8,2% in the total system (sediment compartment maximum 0.8%, water compartment maximum 7.4%). The wetabodite M-03 (AE 0608000) was not detected as an aquatic metabolite. All three metabolites have been of included in FOCUS surface water and sediment modelling, as exposure from formation of metabolite in soil, with subsequent exposure of surface water and sediment from drainage or runoff from soil, has to be considered in addition to the formation of a metabolite in aquatic systems. However, M-03 is unstable in aquatic systems making aquatio ecotoxicological testing unteasible (see KCA 7.2.1.1/03 and KCA 8.2.6.2/11 for further details).

KCA 7.2.1.1/03 and KCA	A 8.2.6.2/11 for further details).
	A 8.2.6.2/11 for further details).
Predicted environmenta	al concentrations in surface water (PECQ)
	A 8.2.6.2/11 for further detalls).  A concentrations in surface water (PECsw)
PEC for fluonicolide	
1 Lesw for mappeonae	
Data Point:	
Report Author:	KCP 9.2.5/01
Report Author.	
Report Year:	2020 Cluopic Orde (FQC): Core PEC W EUR Modelling core info document for surface
Report Year: Report Title:	Touopiconae (risc): Core PECSW EURG Modelling core into document for surface
	water risk assessment in Europe
Ticpoit ivo.	VC/19/041k
Document No: Suideline(s) Collowed in	
Guideline(s) collowed in	FOCUS 2014 Generic anidance for FOCUS Surface Water Scenarios Version 1.4
study:	May 2015
Deviations from current	None Control of Contro
test guideline:	
Previous evaluation	No, not previously subtritted $\circ$
()	
GLP/Officially @cognised	No, not conducted ander QLP/Officially recognised testing facilities
testing facilities.	
Acceptability/Reliability:	Yes 3 4 5

#### **Executive Summary**

This summary summarises the substance data for fluopicolide and its metabolites as used for the purpose of surface water risk assessment employing the following deterministic pesticide fate models:

- STOP 4 in POC

The parameters correspond to standard EU requirements.

Modelling reports utilising the core info document should have the substance data presented as shown in the following tables.



Table 9.2.5-1: Substance parameters used at FOCUS Steps 1-2 level

Parameter	Unit	Fluopicolide	M-01 (AE C653711)	M-02 (AE C657188)	M-03 (AE 0608000)
Molar mass	(g/mol)	383.59	190.03	225.56	399,58 1
Water solubility	(mg/L)	2.8	1830	9721	(b)
Koc	(mL/g)	267.7	24.1	5.75	1906.9
Degradation					
Soil	(days)	182	146	√ <del>1</del> v.6	, O' 170 V
Total system	(days)	1000	<b>10</b> 00	L 1000	
Water	(days)	1000	<b>70</b> 00	1000	7.9 V
Sediment	(days)	1000	1000	Ô♥ 1000 🎺	≈ 1000 × 1
Max occurrence				,0	
Water / sediment	(%)	100	20.3	©°8.20 €	\$ 0.001 £
Soil	(%)	100 🔍	48	16.4	90.6 °

Table 9.2.5- 2: Substance parameters used for flavopic of de and its metabolité M-05 (AE 0608000) at Step 3/4 level

Parameter	Unit	Parent 5	Metabolite
Substance	6 'N	Fluopicolide	Metabolite M-95 (AE 0608000) M93
SWASH code	Ĉ	FLC O	M93
General Molar mass Water solubility (temp.)	O a	TLC O	\$ \$400.50
Molar mass	(g/mol)	√ 38 <b>305</b> 9 €	399.58
water solubility (temp.)	©(mg/L∳/	ი 2.8∜ <b>2</b> 0 °C)∀ ა. [©]	∂ 10 (20 °C)
Vapour pressure (temp.)	(Pa)	3.03E-07 (20°C)	0 (20 °C) 0 (20 °C)
Crop processes	ZZ ~ (	3.03 E-07 (20°C)	Z
Coefficient for uptake by plant (\$5CF)	(-) Ö		0
Wash-off factor	(1/m)	50 ()	50
Crop processes Coefficient for uptake by plant (SCF) Wash-off factor Sorption Koc		\$ 267.04	
Koc & & &	(mL/g)	Y 267 <b>9</b> 4 29	106.89
KOM & O O'	@mL/g		62
Freundlich exponent ( )	(F)Q	0.888 U	0.971
Transformation DT ₅₀ in soil temperature moisture content (pt) formation fraction in soil DT ₅₀ in water	**************************************		
DT ₅₀ in soil	(days)	× 2 1821	17.9
temperature	(°C)_O'	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	20
moisture content (pt)	(log(cm))	\$\frac{1}{2} \\ \frac{1}{2} \\ \frac	2
temperature moisture content (pt) formation fraction in soil  DT ₅₀ in water temperature formation fraction in water  DT ₅₀ in sediment temperature formation fraction in sediment  DT ₅₀ on canopy	(log(&m)) (v) (days) (°G)	1000	0.53
DT ₅₀ in water	*(days)	1000	1.9
temperature	$\mathbb{O}(\mathcal{C})$	20	20
formation fraction in water	" ( <b>4</b> )"	_	-
DT ₅₀ in sed <del>in</del> aent	(days) 🔏	1000	1000
temperature Q	&(°C) 🔊	20	20
formation fraction in Sediment  DTs on canopy	D. ( ) ( )	-	-
= 130 %= 1 m= 1 m	(dstys)	10	10
Exponent for the effect of moistaire  PRZM and TOX WA (Walker or p.)  MACRO (calibrated value)	Q (-)		
PRZM and TOXSWA (Walker p.)	Q, (-)	0.7	0.7
MACRO (calibrated xatue)	, (-)	0.49	0.49
Effect of temperature &			
TOXSWA (prolar activation energy)	(kJ/mol)	65.4	65.4
MACROS (effect of temperature)	(1/K)	0.0948	0.0948
PRZM Q (Q ₁₆ ) y v v	(-)	2.58	2.58

#### I. Materials and Methods

Calculation of the substance parameters for fluopicolide and its metabolites M-01, M-02 and M-03 is detailed as follows: -



#### Fluopicolide (AE C638206)

**Physico-Chemical Properties** 

Structural formula

CI CI CI N CI CI

Common name

Chemical name (IUPAC)

Water solubility

Molar mass

Vapour pressure

Fluopicolide (AE C638206

2,6-dichloro-N-[[3-choro-5-trifluoromethyl)-2

3.59° mol-k

 $2.8 \text{ mg L}^{-1}$  at  $20^{\circ}$  C (M-234496-6) -1,

 $3.03 \times 10^{-7}$  Pa at  $20^{\circ}$  (M-107457 91-1,

#### **Degradation in Aerobic Soil**

#### Laboratory studies

The aerobic degradation and metabolism of thropic orde in oil was investigated in the laboratory by M-201230-02-1, (2003) M-24049-0-1, (2003a) M-241052-0-2, (2003b); M-241051-01-1, (2016b) and M-655056-010, (2019b) A summary of the modelling endpoint DegT₅₀ values derived for fluoricalide (VCA 7.1.281/1/10.20168580.010).

values derived for fluoricolide KCA 7.1.2. 1/10 M-685080-01 , 2020), normalised to 20°C and ptQ, is given in Table 92.5-3.

Table 9.2.5 3: Summary of DegT 50 values derived for fluopicolide under laboratory on ditions (after M-685680-01-1, 2000)

Applied compound	Study A	Soil S	Model selected	DegT50 un-normalised (d)	DegT ₅₀ normalised to 20°C and pF2 (d)
	M-201230-02AC	Münster 👸	≫ SFO	212.0	212.0
	2003	Sarotti S	SFO	191.2	191.2
	M-241049 71-1,	Abington (non-sterito)	SFO	348.0	340.2
~	M-241051-010, 2003b	Lamberton	SFO	1290.0	1037.9
	<b>6</b> -241052-01-16	Lamberton	SFO	358.0	395.8
Fluopicolide	2003	∠ Pikoville	DFOP	612.9 ^a / 30.1 ^b	616.0 ^a / 30.3 ^b
		Albaro/Marcomcini	DFOP	146.2ª / 2.8b	146.2ª / 2.8b
	2016a	Great Chishill	DFOP	312.4ª / 2.7b	312.4ª / 2.7b
	<u>M-550</u> 87-01,4,		DFOP	155.5 ^a / 7.2 ^b	155.5 ^a / 7.2 ^b
\$ \$\infty\$	2016a	Mas du Coq	DFOP	216.7ª / 10.5b	193.7ª / 9.4b
	_ 3 - 3 - 3	Parcey Meslay	DFOP	202.5ª / 8.1b	202.5ª / 8.1b
		Vilobi d'Ònyar	DFOP	93.5ª / 7.8 ^b	93.5ª / 7.8b
	<u>M-555570-01-1</u> ,	Dollendorf II	DFOP	$111.4^a / 0.6^b$	$111.4^a / 0.6^b$



Applied compound	Study	Soil	Model selected	DegT50 un-normalised (d)	DegT ₅₀ normalised to 20°C and pF2 (d)
			DFOP	137.7ª / 4.2b	137.7ª/🎾 🔏
	2016b		DFOP	141.3ª / 6.30°	141.3° 6.3°
			DFOP	133.5ª / <b>B</b> 4 ^b	133.5 / 9.4
		Abington 2	DFOP	142.1¾ 1.9 ^b	. 132.1a/3096
		Lamberton	PFOP	176,1 ^a / 2.8 ^b	~ 145.1 1 2.3b
	M-655056-01-1,	Lignieres	<b>D</b> FOP	13.4ª / 1.4b	1449 ⁴ /1.45
	2019	Münster	Ş DFOP	170.1ª / 5.3b	1Q4.5a/39b &
		Pikeville	DFOP &	2° 15 <b>5</b> 2° / 4 15°	\$\ \(\alpha\) 129.4a\(\varphi\) 3.5b\(\alpha\)
		Sarotti 2	DFOP	∘ 16/1.2ª / 1.6b	143,8°a / 1,4°
	_	Geometric mea	(SFQ and	DFOP slow phase	[™] 181.6 [™]

a – Pseudo-SFO value based on slow phase of decline (calculated as ln(2)/k2 and formalised if applicable)

### **Field Dissipation Studies**

C and pF2 have been derived by DegT₅₀ values for fluopicolide, normalised . (26,20b) from 12 terrestrial field dissipation . (2020a) and M-685676-Q1-1. , 2049a; M-21866, -01-1 studies (M-651636-01-1, 2603; M-220477-2003; M-234424-01-1, 2064; M-247945-81-1. 2005a; M-251338-01-02-1, 2005b; M-298672-91-1. 2003). A symmetry of the modelling endpoint DegT50 values dérived for fluopicolité is goven in Table 9.2.5-4.

Summary of Deg I values (normalised to 20°C and pF2) derived for Table 9.2.5- 4: fluopicolide from terrestrial field dissipation studies (after M-685675-01-1, 2020a and M-685676-01-1, 2020b)

	<u> </u>			•							
		9 4									
Soil type	Tocation (country)	pH (CaCl ₂ )		St. (χ²err) (%)	Method of calculation	DegT ₅₀ (d) norm					
Silt loam	Burscheid (Germany)	5.9 °	0 1 20	9.80	SFO	111.9					
Clay	Great Chishill (9K)	78	120	11.64	SFO	216.9					
Sandy loam	Lighteres de Touraine (France)	<b>6</b> .9	, 0-120	4.82	SFO	158.6					
Clay loam 🚄	St.Etienne du Grès (Farance)	8.1°	0-120	4.90	SFO	303.2					
Clay loan	Albaro di Ronco all'Adige	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0-120	9.99	SFO	237.3					
Sandy clay loam	Vilograd'Ongar (Spans)	§ 6.9	0-120	6.20	SFO	166.8					
Loamy sand	Philippsbutg (Germany)	6.4	0-50	9.477	SFO	199.6					
Sandy clay loam	Rödelsee (Gesunany)	7.4	0-30	21.59	SFO	146.4					
Sand	Humfosen (Germany)	4.9	0-50	15.46	SFO	168.4					
Loamy sand	Valenoa (Spain)	7.3	0-30	13.95	SFO	317.4					
Sandy Str	Apply (France)	7.1	0-30	11.16	SFO	144.2					
Sandy silt loam	Senas (France)	7.6	0-45	9.864	SFO	136.5					
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				Geo	metric mean	183					

Degradation in Aerobic Soil: Overall DegT₅₀ value

a – Pseudo-SFO value based on fast phase of decline calculated ln(2) W₁ and normalised in approach c – Geometric mean calculated of DegT₅₀ values from Lamberton soils prior to calculation of overall geometric mean.



Degradation half-lives for fluopicolide derived from laboratory and field dissipation studies were compared using the EFSA DegT₅₀ Endpoint Selector (EFSA, 2014). This comparison indicated that the laboratory and field DegT50 values for fluopicolide should be combined.

An overall geometric mean DegT₅₀ value of **182 days** in soil was derived for fluopicolide for surface water calculations, including both laboratory and field data.

#### **Degradation in Water-Sediment Systems**

The degradation of fluopicolide in water sediment systems was investigated in the laboratory by M241425-01-1, [2003a]. Limited degradation of fluopicolide was observed, and a default DegT₅₀ value of **1000 days** was used in the modelling to describe the degradation of fluopicolide in the water compartment, sediment compartment and total water sediment system.

#### Plant Uptake

The plant uptake factor for fluopicolide was set to 0.5. Residues of Phaopicolide and metabolites Prave been found in different plants in a rotational crop study (M240700003-1) 2003). Fluopicolide is redistributed via the xylem (acropetal systemic activity but is not phoem mobile. SCF calculated according to Briggs is 0.47.

The uptake of fluopicolide into potato plants has been investigated in a new stody (<u>M\$68837\$\times01-1</u>, 2020) and the transpiration stream concentration factor (TSOF) determined. The mean TSCF was determined as 0.91 (DAT2), 0.75 (DAT4) and 0.82 (DAT6), thus fully supporting the use of the default value of 0.5 in the PEOsw expluations.

### Foliar Wash-off and Canopy Degradation

Plant wash-off was set to the default value of  $50 \text{ m}^{-1}$ , and the canopy degradation  $DT_{50}$  value was set to the default value of 10 days (FOCUS, 2014)

#### Adsorption

The adsorption and desorption of fluoricolide has been investigated in five studies (M-241425-01-1, 2003b; M-243840-01-1, 2003b; M-34419402-1; M-572869-01-Q 2006; M-395723-01-1, 2017). A summary of Koc and 1/n values derived for fluoricolide from these studies is given in Table 9.2.5-5.

A geometric mean Koc value of 267.7 mL/g corresponding to a  $K_{OM}$  value of 155.3 mL/g ( $K_{OM} = 1.724$ ) was used for fluorically in the modelling with an arithmetic mean 1/n value of 0.888.

Table 9.2.5-5: Summary of sorption parameters derived for fluopicolide

		. 0		7				
Study reference	Soil &	Code	Sexual Services	pН	OC [%]	K _f (mL/g)	Koc (mL/g)	1/n
	Pikeviffe Q Sediment	EFS-54	løgm	4.5	2.07	7.73	373*	0.926*
4	Pikeville Worth Carolina	EFS-65	sand	4.7	0.5	1.42	283	0.924
M-241425-01-	Abinton	EFS-86	sandy loam	7.5	2.21	7.53 (**3.36)	341 (**151.6)	0.929 (**0.882)
M-241425-01-	Sarotti O	EFS-88	silty clay loam	7.4	0.9	3.2	356	0.905
	Münster V	EFS-93	loamy sand	5.7	1.3	4.54	349	0.929
	Münster	EFS-94	loamy sand	6.2	0.2	0.21	106*	0.931*
	Münster	EFS-95	loamy sand	6.2	0.2	0.17	83*	0.951*
M-233840-01-1,	Philippsburg	03/02	sandy loam	6.3	0.6	1.49	248	0.841
	Senas	03/03	clay loam	7.6	1.5	3.59	239	0.882



(2003b)	Huntlosen	03/04	loamy sand	5.3	1.6	9.27	580	0.953
	Rodelsee	03/05	clay	7	1.5	2.59	172	0.859
		WuW	loam	5	1.8	4.65	258.6	0.925/8
<u>M-544194-02-1</u> ,		НаН	silt loam	6.1	1.9	6.22	327.5	<b>8</b> 741 ©
(2015)	Dollendorf II,	Doll	clay loam	7.3	4.8	11.74	244.1	V 0.8596
(2015)		AXXa	sandy loam	6.5	1.5	4-04	269.	8723
	Burscheid	VG08	silt loam	⁹ 6.1	0.7	<b>®</b> 2.12	303.3	× 0.88 <b>68</b>
	Great Chishill	ENG2	clay 🌊 "	7.3	2.10		£57.0	0,0076 _ (
M-572869-01-1,	Parcay Meslay	FR09B	loan	6.7	£3	3.35	257.4	J.8992
(2016)	Tarascon Le Cayades	FR08	clasoloam	7.6	y 0.9 _~	1.84	204.9	0.868
( ' ' ')	Valerio Tomelini	IT09	Osilty Elay	Ž.2		<b>9</b> .93 (	187,0	∆0.9110 °
	Vilobi D'Onyar	SPA0₩	sandy loam	6.3	0.8		292.0	0.8818
	Abington	AB	sandy lown	.7.3	2.65	5,6	\$ 214.	868
	Lamberton	JB 9	loadin 🦯	\$5.6 __	2.6	\$8.6 \$	334.9	0.844
M-595721-01-1,	Lignieres	O, LN "	sandy loam	5.75	$^{\flat}$ $0.8$	2.60	<b>3</b> 63.1.√	0.888
(2017)	Muenster	MS	hoamy sand	5,0	12	34	© 28 <b>2</b> ,6 ″	0.916
	Pikeville \$\infty\$	PV 🕺	⇒ loamy sand '	√4.5	Ø .8	\$ 6.2 °	340.6	0.873
	Sarotti 🔎 .		siny clay ©	6.9	1.45		\$\tag{985.6}	0.851
		, Ò		O _x	Agithn	petic mean	<b>-</b>	0.888
			\$ 2	, –	Geom	etric mean	267.7	-

Physico-Chemical Properties
Structural formula

Common name

M-01 (BAM) AE C653711)

Chemical name (IUPAC)

2 Edichlorobenzamide

Molay mass

490.05 g mol⁻¹

Water solubility

2220 mg L⁻¹ at 20°C (2014, M-505637-01-1)

*excluded from calculations, * Thecklist value used for geomean and average

given in Table 9.2.5- 6.

Water solubility 2220 mg L⁻¹ at 20°C (2014, M-505637-01-1)

Laboratory studies

The aerobic degradation of M-01 (BAM) in soil was investigated in the laboratory by M-234320-01-1, (2002) In addition M-01 was observed to form from fluopicolide in six studies (M-241049-01-1), (2003), M-20052-01-1, (2003b; M-241051-01-1, (2003c; M-550687-01-1), (2016a; M-555570-01-1), (2016b and M-655056-01-1), (2019) and from M-03 in one study (M-241188-01-1), (2003). A summary of the modelling endpoints derived for M-01 b (KCA 7.1.2.1.1/10, M-685680-01-1), (2020) is



The maximum observed occurrence in soil of M-01 in laboratory studies, expressed as a molar fraction of applied fluopicolide, was 48% (M-555570-01-1, , 2016b).

**Table 9.2.5-6:** Summary of modelling endpoints derived for M-01 (BAM) under laboratory conditions (after M-685680-01-1,

				· · · · · · · · · · · · · · · · · · ·	· ***
Applied compound	Study	Soil	Model selected	DegT ₅₀ in- normalised	DegT ₅₀ normalised to 20°C and 7°F2
	M-201230-02-1	Münster	<b>₿</b> FO	€1000a	1090a F
	2003	Sarotti	SFO SFO	\$\int 1000^a \tag{9}	Jr000a
	M-241049-01-1 2003a	Abington (non-sterile)	SFO &	1000°	1000
	M-241052-01-1 2003b	Lamberton	° SFQ	1000° 0	×10002
	M-241051-01-1	Lamberton 🗸	<b>Š</b> FO	7000a O	1000° 2°
	2003c	Pikeville 😽	SFQ	A 1734 J	<b>4.0</b>
		Albaro Marcomcini (	ŞFQ	<b>417</b> /3 <b>3</b>	
		Great Chishill	ŞFO ∂	\$\tag{\Psi}000\cdot\tag{\Psi}	1000°
	M-550687-01-1		SFO	5719	\$71.7
	2016a	Mas du Coq O	SFO	472.2	422.2
Fluopicolide		Parcey Meslay \$	⊕ SFO ∜	908.40	908.4
		Vilobod'Ònxor	SEO	3237.9	323.9
	4) A	Dollend of II	SFO &	, 159.7, S	159.7
	M-555 70-01-10		SFQ.	869.3	869.3
	2016		STO S	√ 2 <b>5</b> 86.2	556.2
	2016b		SFO SFO	7 1000a	1000a
Ď		Abington 2	SFO	175.6	175.6
		Memberton S	ASTO ^	1000a	1000a
	M-6550\$6-01-4	Lignæres V	SFO	1000a	1000a
	201/9	Mÿnster (	SFO SFO	294.7	215.6
		Pikeville ,	<b>S</b> FO	135.9	113.3
		Sarota 2 Sarota 2	SFO	267.1	237.9
M-01	M-234320-09-1,	Bis hany	SFO	1858.0	2077.6
-8	<b>2</b> 002	North Dakota	SFO	568.8	913.6
. 🕗	M-241 88-01	Mignister 📉	SFO	1000a	1000ª
1№03	<u>2003</u> ≥	Pikeville	SFO	1000ª	1000ª
	A A S			Geometric mean	569.5 ^d

# Figld Dissipation Studies

DegT₅₀ values for M-01 (BAM), normalised to 20°C and pF2, have been derived by M-685675-01-1. . (2020a) from five terrestrial field dissipation studies (M-650733-02-1, , 2019b). A summary of the modelling endpoint DegT₅₀ values derived for M-01 is given in

Table 9.2.5- 7.

a – Conservative default value
b – Pseudo-SPO value based on slow phase of decline (calculated as ln(2)/k₂ and normalised if applicable)
c – Pseudo-SFO value based on fast chase of decline (calculated ln(2)/k₁ and normalised if applicable)
d – Geometric mean calculated of DT₅₀ values from Lamberton soil prior to calculation of overall geometric mean.



Table 9.2.5- 7: Summary of DegT₅₀ values (normalised to 20°C and pF2) derived for M-01 (BAM) from terrestrial field dissipation studies (after M-685675-01-1, 2020a)

	Aerobic field conditions					
Soil type	Location (country)	pH (CaCl ₂ )	Depth (cm)	St. (χ²err) (%)	Method of calculation	DegT ₅₀ (d)
Silt loam	Burscheid (Germany)	5.9	0-120	14.68 🔏	SFO S	290.0 ×
Sandy loam	Lignieres de Touraine (France)	6.9	20	7.820°	SFO 💍	₹91.1®
Clay loam	St.Etienne du Grès (France)	8.1	ر 0-120	58	SEQ	T 179.9
Clay loam	Albarodi Ronco all'Adige (Italy)	7.7	0-120	\$3.93°	SFO (	F31.8
Sandy clay loam	Vilobi d'Onyar (Spain)	6.9	°0-120	10,94	SFO S	1363
	4				eometric mean	₩46 L°

#### Degradation in Aerobic Soil: Overall DegT₅₀ value

Degradation half-lives for M-01 (BAM) defived from laborator and field dissipation studies were compared using the EFSA Deg $T_{50}$  Endpoint Selector (EFSA, 2014). This comparison indicated that the field Deg $T_{50}$  values for M-01 were significantly shorter than the laboratory studies, therefore the geometric mean field Deg $T_{50}$  value of 46 days was used in the modelling for M-01 (BAM).

### Degradation in Water-Sediment Systems

The degradation of fluoricolide in water sediment systems was investigated in the laboratory by M-241425-01-1, (2003). In this study, methodite M-01 (BAM) was observed to form up to a maximum of 20.3% of applied radioactivity.

Limited degradation was observed in the study by M = 1425 = 1.5 (2003a), and no reliable DegT₅₀ values were derived for M-01. A default DegT₅₀ value of 000 days was therefore used in the modelling to describe the degradation of 001 in the water compartment, sediment compartment and total water sediment system.

#### Adsorption

The adsorption and desorption of M-01 (BAM) has been investigated in ten soils (M-235837-01-1, 2001; M-24926-01-2 2003; M-686388-01-1, 2020a). A summary of the sorption parameters derived for M-01 from these studies is given in Table 9.2.5-8. A geometric mean  $K_{OC}$  value of **24.1 m1** was used for M-00 in the model ling.

Table 9.2.5. 8: Summar of sorption parameters derived for M-01 (BAM)

m**			~ .~				
reierence	Soil	Soil Code	<b>*</b>	pН	OC [%]	K _f (mL/g)	Koc (mL/g)
<b>N</b>	Connectorut	√ KL-5%1	Sandy loam	4.8	0.9	0.241	26*
	North Dakota	<b>₽</b> 81 €	[⊮] Sandy loam	7.7	5.7	1.761	31
M-235837-01-6	Florida Sashington	%RM-014 *	Sand	6.3	1.4	0.529	38
(2001)	Washington \$	≀ RM-919	Sand	4.9	4.2	1.890	45
	California	RM-022	Sandy clay loam	6.6	0.4	0.208	51
M-224926-012 (2005)	Connecticut	RL-51	Sandy loam	4.8	0.9	0.359	39.9**
M-686388-01-1	LUFA 2.1	2.1	sand	5.2	0.59	0.103	17.5
(2020a)	LUFA 2.3	2.3	sandy loam	6.2	0.61	0.056	9.2
(20200)	LUFA 5M	5M	sandy loam	7.1	1.10	0.162	14.8



Report reference	Soil	Soil Code	Texture	pН	OC [%]	$K_{\rm f}$ (mL/g)	K _{OC} (mL/g)
	LUFA 6S	6S	clay loam	7.3	1.78	0.265	1490
	Frankenforst	FF	silt loam	6.9	2.4	0.418	, 19.4
Geometric mean							<b>\$24.1</b>

^{*}excluded from calculations, **recalculated and used for calculations

#### M-02 (PCA; AE C657188)

Physico-Chemical Properties Structural formula

Common name

Chemical name (IUPAC)

3-chloro-5-(thyluoromethylipyridine-2-carboxylic

Molar mass

#### **Degradation in Aerobic Soil**

The aerobic degradation and metabolism of M-02 (PCA) in soil was investigated in the laboratory by M-219824-01-1, 2003) and M-881364-01-1 (2017). A summary of the modelling endpoints derived for M-02 (PCA) (1.2.1.1/10, M-685680-01) (2017). A summary of the given in Table 9.2.5- 9. A geometric mean Degra volue of 0.6 days was used in the modelling for M-02 (PCA).

The maximum formation of metabolite 102 in terrestrial field dissipation studies was 16.4% (M-220477-02-1, 2003)

Table 9.2.5- Summary of modeling endpoints derived for M-02 (PCA) under laborators conditions (after M-685680-01-1) 2020)

Applied compound	Study	Soil Soil Soil Soil Soil Soil Soil Soil	Model Selected	DegT50 un- normalised (d)	DegT ₅₀ normalised to 20°C and pF2 (d)
	M-219824-81-1	S A ington S	<b>S</b> FO	4.4	4.4
		Mürkter %	SFO	3.5	3.5
N 00 A	2003	Saleotti Q	SFO SFO	4.4	4.1
M-02 (PCA)		Q Dollendon	SFO	1.1	1.1
(1 C/1)*	M-5813(4-01-1		SFO	1.1	0.9
\ \frac{1}{2}	201		SFO	0.7	0.7
	(0/ n		SFO	0.7	0.7
				Geometric mean	1.6

# Degracation in Water-Sediment Systems

The degradation of fluoricolide in water sediment systems was investigated in the laboratory by M-24425-001, 2003a). In this study, metabolite M-02 (PCA) was observed to form up to a maximum of **8.2%** of applied radioactivity.

Limited degradation was observed in the study by M-241425-01-1, (2003a), and no reliable DegT₅₀ values were derived for M-02. A default DegT₅₀ value of **1000 days** was used in the modelling



to describe the degradation of M-02 in the water compartment, sediment compartment and total water sediment system.

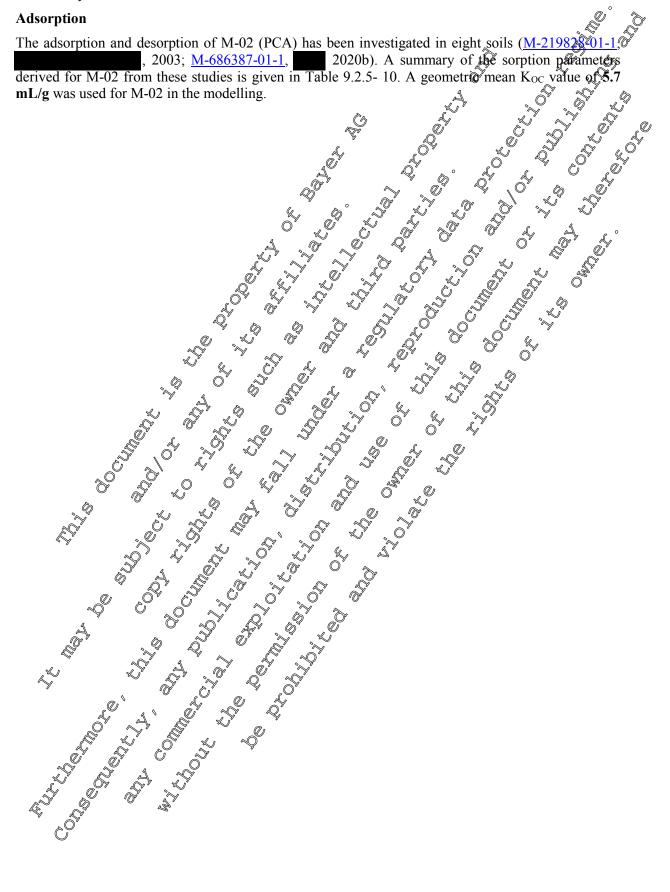




Table 9.2.5- 10:	<b>Summary of sor</b>	ption parameters	derived for	M-02 (PCA)

Report reference	Soil	Soil Code	Texture	pH (CaCl ₂ )	OC [%]	K _f (mL/g)	Koo° (m£/g)
<u>M-219828-01-1</u>	Abington	03/06	Sandy loam	7.2	2.6	0.029	(C)1.1
	Munster	03/07	Loamy sand	5.4	1.1	0.116 a	Ç 10,5
(2003)	Sarotti	03/10	Silt loam	7.5	1.3	0.082\$	l . №' (Ø
	LUFA 2.1	2.1	Sand	_⊳ 5.2	16.59	0.047	× 8.0 ×
N. (0(207.01.1	LUFA 2.3	2.3	Sandy loam 🧳	6.2	<b>©</b> 0.61	<b>0.038</b>	6,20
M-686387-01-1 (2020b)	LUFA 5M	5M	Sandy loam	7.1	1.1	<b>3</b> 0.154	<b>L</b> \$.0 (
(20200)	LUFA 6S	6S	Clay loagu	7.3	1.78	0.145	్రి 8.2 ్లో
	Frankenforst	FF	Silt Josem	6.9,	<b>©</b> 2.4 ♥	\0 <b>0</b> 059 &	2.5
			V &	~~~	) Geom	etric mean	\$5.7

#### M-03 (AE 0608000)

Physico-Chemical Properties Structural formula

Common name

Chemical name (IU

chloro-5 Crifluo comethyl) yridine-2-](hydroxy)onethyl benzamide @

Molar mass Degradațion in Aerobic Soil

The aerobic degradation and metabolism of M-03 in soil was investigated in the laboratory by M-(2003) app <u>M-565219-01-1,</u> <u>241188-01-1</u>, (2016a). In addition, M-03 was observed to form from fluopication in three studies OM-201230-02-1, 2003; M-241052-01-1, 2019). A summary of the modelling endpoints for M-03 2003; M-\$55056-91-1 ©2020b is given in Table 9.2.5-11. (KCA 7.1.2.1.26/10, NO.85680-01-15

A geometric mean DegT value of 17 Plays vas used in the modelling for M-03, with an arithmetic mean motor formation fraction from tolopicolide of 0.53. These values were derived from acidic soils The maximum observed occurrence is soil of M-03 in laboratory studies was 10.6% (M-201230-02-1, 2003).



Table 9.2.5- 11: Summary of un-normalised DegT₅₀ values derived for M-03 under laboratory conditions (after 2020b)

Applied compound	Study	Soil	Soil pH	Model selected	DegT ₅₀ unnormalised (d)	DegT ₅₀ normalised (d)	ffm from		
	M-201230-02-1, 2003	Münster	4.9	SFO	62.6	62.6	0.6086		
Fluopicolide	M-241052-01-1, 2003	Lamberton	5.9	Ŝ SFO	49/3	545	∑0.593 <b>3</b> 57		
	M-655056-01-1, 2019	Pikeville	45	SFO	29.3	24.4 Q	0 <b>3</b> 009 %		
		Abington	Ø₹.2	SFQ	<b>1 3 2 1 4</b>	5 0Q	& - N		
	M-241188-01-1, 2003	Münster	4.9 。	D <b>FØ</b> Ý	√31000°	\$000a °≈			
		Pikeville 💍	5@	DFOP	2.7	\$\frac{2.2^b}{2.2}	<u>.</u> -		
M-03		Sarotti 🔏	T.1 (	Z SFOQ,	0.1	, 0. <b>6</b>	\$ - X		
	M-565219-01-1,	Brierlow (BL) «	5.3	ŞÎĐ	2.5, O	£2.5			
	2016			SFO S		0.96	0		
	Geometric mean (pH & 19.9° -								
	$a_{ij} \ll b^{2}$ $a_{ij} \approx Arithmetic mean (phd < 6) a_{ij} \approx 0.53$								
	Geomtric mean (soil@H >6) 0.10 -								
	<u></u>		Z AH	thmetic m	eam (pH ≥6)	J.Q-	-		

a – DFOP k₂ parameter fixed to conservative default value

#### Degradation in Water-Sediment Systems

Metabolite M-05 has not been observed to form in water segment systems, however an aqueous hydrolysis study has been performed for this compound (M-250241-01-2), 2004). The half-life of M-03 in sterile, aqueous buffered solutions ranged from 8.4 minutes at pH 8.1 to 45.5 hours at pH 5.1. A DT₅₀ value of **1.9 days** (i.e. 45.5 hours) was used in the modelling to describe the degradation of M-03 in the water compartment and the total water sediment system. The DT₅₀ value for M-03 in the sediment compartment was set to a default value of **1000 days**.

The maximum occurrence of M-03 in water sediment systems was set to 0.001%, as the STEP1-2 calculator requires an input greater than zero for this parameter.

#### Plant uptake

The plant uptake factor for MQ3 was set to conservative default value of 0. As the metabolite M-03 (AE 0608000) has not been detected in the plants from rotational crop studies, the uptake factor was set to 0.

## Foliar Wash-off and Canop Degradation

Plant wash-off was set to the default value of **50 m⁻¹**, and the canopy degradation DT₅₀ value was set to the default value of **10 days** (FOCUS, 2014).

#### Adsorption

The adsorption and desorption of M-03 has been investigated in three soils by M-221107-01-2, (2003). A summary of the sorption parameters derived for M-03 is given in Table 9.2.5-12. A geometric mean  $K_{OC}$  value of 106.9 mL/g, corresponding to a  $K_{OM}$  value of 62.0 mL/g ( $K_{OM} = K_{OC} \div 1.724$ ), was used for M-03 in the modelling, with an arithmetic mean 1/n value of 0.971.

b - Pseudo-SFO DT50 value/derived as DT90/832 (and normalised if applicable)

c - Geometric mean calculated for Winster soils prior to calculation of overal Palue



Table 9.2.5- 12: Summary of sorption parameters derived for M-03

Report reference	Soil	Soil Code	Texture	pH (CaCl ₂ )	OC [%]	K _f (mL/g)	Koc (mL/g)	1/n
M-221107-01-2	Ingleby	02/03	Sandy loam	4.1	3.5	2.86	82	0.961
	Huntlosen	03/04	Loamy sand	4.7	1.7	226	133	1.012
(2003)	Munster	03/07	Loamy sand	5.4	1.1	Ø.23	112	0.939
Geometric mean 106.9 💸 - 👌								
				Ĉa	Arithme	tic mean	/ - ~ ~	0.971

#### II. Results an Discussion

Modelling reports utilising the core info document should have the substance data presented as shown in the following tables.

Table 9.2.5- 13: Substance parameters used at FOCL'S Steps 1-2 level

Parameter	Unit	Fluopicolide	M-010 AE C6\$3711)	M-02 (AF-0657188)	M-03 (AE 0608000)
Molar mass	(g/mol)	0383 <i>5</i> 9/ ×			@ V
Water solubility	(mg/L)	2 8	å 1830.∿ ^ÿ	225.56 9701	10
Koc	(mL/g)	207.7 P	24 0	<b>3</b> .7	106.9
Degradation			~ ~ ~		~
Soil	(dayŠ)∕ ^v	182	, 146	1.6	17.9
Total system	(days)		1000	( 1000 / Q	1.9
Water	(days)	9000	1000	J 000 0	1.9
Sediment	∠√(days)∜	© 10000° ·	J000 &	10000	1000
Max occurrence		\$\frac{10000}{5}\$			
Water / sediment	<b>(%</b> )		20.3 _©	8.2	0.001
Max occurrence Water / sediment Soil	Q%) ^	Y \( \forall \)	489 0	√√6.4	10.6

Table 9.2.5-14:
Substance parameters used for fluopicolide and its metabolite M-03
(AL 0608000) at Step 3/4 level

Parameter Substance SWASH code	Unit	& Rarent	Metabolite
Substance Substance		© *** Nuopicolide	M-03 (AE 0608000)
Substance SWASH code  General Molar mass Water solubility (temp.)		FLC	M03
General O O O	0, 0,	10	
Molar mass "	(g/mooil)	383.59	399.58
Water solubility (temp.)	(mg/L)	2.8 (20 °C)	10 (20 °C)
Substance SWASH code  General Molar mass Water solubility (temp.) Vapour pressure (temp.)	(Pa)	3.03E-07 (20 °C)	0 (20 °C)
ron processes			
Coefficient for uptake by plant (TSCF)		0.5	0
Wash off factor	$(\mathbb{P}_m)$	50	50
Wash-off factor  Sorption  Koc  Kom  Freundlichexponent (1/n)	Q,		
	" (mL/g)	267.74	106.89
Kom & & & &	(mL/g)	155.3	62
Kom Freundlichtexponent (1/n)  Transformation  DT ₅₀ in soil tomerature	(-)	0.888	0.971
Transformation 1			
DT ₅₀ in soil tomerature	(days)	182	17.9
temperature "O"	(°C)	20	20
moisturg content (pr)	(log(cm))	2	2
formation fraction in soil	(-)	-	0.53
DT ₅₀ in water	(days)	1000	1.9
temperature	(°C)	20	20
formation fraction in water	(-)	-	-



Parameter		Unit		Parent		N	<b>1etabol</b> i	ite
DT ₅₀ in sedim	ent	(days)		1000			1000	0
temperature		(°C)		20			20	w ~
formation fr	raction in sediment	(-)		-			-	
DT ₅₀ on cano	ру	(days)		10		<b>^</b>	10	Ø)
Exponent for the effect of moisture						Z.	A.	
PRZM and TO	OXSWA (Walker exp.)	(-)		0.7	(	<b>D</b> "	0.7	
MACRO (cal	ibrated value)	(-)		0.49	4		Q 49	
Effect of tem	perature		۵.		W.		`~\ '	
TOXSWA	(molar activation energy)	(kJ/mol)		65.4	O'Y	<b>*</b>	65.4	
MACRO	(effect of temperature)	(1/K)	_ \\	0.0948	Q	. W	0.0948	
PRZM	$(Q_{10})$	(-)	4	2.58	)		<b>2</b> 058	

#### III. Conclusion

For the surface water and sediment risk assessment of fluoricolide and its metabolites M-01, M-02 and M-03 the input parameters presented in this supmary hould be used in all calculations.

#### Assessment and conclusion by applicant:

This core modelling report was conducted according to FOCUS Degradation Kinetics (2006, 2014) and is considered valid to assess trigger and modelling endpoints for fluoricolide and its metabolites in surface water and sediment under laboratory conditions.

Data Point:	
Report Author:	KG29.2.302
Report Author: Report Year:	2020 🔊 🗳 📞 🛇
Report Title:	Fluopicolide (FLC) and metabolites. PECsw, sed FOCUS EUR - Use in winter
	oilseed rapo in Europe V & S
Report No:	EnSa-20-0397
	<u>M-68₹1/54-01/5</u> 7 © © ©
Guideline(s) followed in	FOGES 2015 Generic guidance for FOCUS Surface Water Scenarios Version 1.4
study:	May 2015, \$\sqrt{y} \qqrt{y}
Deviations from current	None of the contract of the co
test guideline:	
Previous evaluation:	No not proviously submitted
Ž Č	
GLP/Officially recognised	No, no conducted under GLP officially recognised testing facilities
testing facilities:	
Acceptability/Reliability/	Yes

#### Executive Summary

Predicted en Gronmental concentrations of the fungicide fluopicolide and its metabolites in surface water (PECsw) and sediment (PECsed) were calculated for the use in Europe, employing the tiered FOCUS carface water (SW) approach (FOCUS 2001, 2015). All relevant entry routes of a compound into surface water (principally a combination of spray drift and runoff/erosion or drain flow) were considered in these calculations.

The uses of fluopicolide in winter oilseed rape were assessed according to the Good Agricultural Practice (GAP) in Europe.

#### I. Materials and Methods



Intended GAPs for the use of fluopicolide in Europe were analysed and consolidated according to regulatory and modelling requirements. As a result, one or more uses may be covered by a single modelling GAP row (DGR). The translation of the regulatory GAP for modelling purposes is shown in Table 9.2.5-15.

Table 9.2.5-15: GAP translation for modelling purposes

GAP group ID	GAP group name (DGR) and use IDs	Covered crop(s)	Growth stage	Max. apps	Interval (days)	(kg 🏎 /ha)
DGR I	winter oilseed rape	winter oilseed rape	B <b>®</b> CH 00	Ø ³ t	-&"	4,70.012

The implementation of the modelling GAP (Table 9.23-15) at Steps 1-2 level is shown in Table 9.2.5.

16. One or more calculations (modelling tasks, PNT) are necessary to fully over the use assessed. The number and name of the respective DGR is provided for easier reference.

Table 9.2.5- 16: FOCUS Steps 1-2 specific data for the GAPs assessed

Run IDs (DGR / PMT)	GAP group name (DGR)	Assessment FOSUS crop  name (FMT) (crop group)  Season C cover
DGR I	winter oilseed	Seed ceatment no drift (incorp of autumn no interception
PMT I	rape	SOCI. Feb.) S
		(apable crops)

This section provides the implementation of the modelling GAR (Table 9.2.5.15) at Step 3 level. Also, here one or more calculations (modelling tasks PMT) are necessary to fully cover the use assessed. The number and name of the respective DGR is provided for easier reference.

Please note that PMT at Step 1-2 and Step 3 do not necessarily fully correspond to each other due to inherent differences in the models.

The application dates for this assessment were set with the help of the fool AppDate (Klein 2018), which propose dates for specific crop stages (given as BBCH code) based on the crop development as defined in the FOCUS model scenarios for groundwater and surface water.

The summary of all Step 3 PMTs of provided in Table 9.2.5 17. The detailed information on individual uses is given in Table 9.2.5 18 and Table 9.2.5 19.

Table 9.2.5- 17: Soverview of FOCUS Step 3 assessments

Run IDs (DGR / PMT)	Ac group hame (DGR) As	sessment name (PMT)	FOCUS crop (crop group)
DOK I	Winter oilseed rape	Seed treatment	Oil seed rape, winter (arable crops)



#### GAP group name winter oilseed rape, assessment name Seed treatment

Table 9.2.5- 18: Summarised FOCUS Step 3 application data (PAT settings)

Assessment name	Scenario	Application window used in modelling
Seed treatment	D2 Ditch/Stream D3 Ditch D4 Pond/Stream D5 Pond/Stream R1 Pond/Stream R3 Stream	01-Sep - 01 Oct 19-Aug - 18-Sep 20-Aug 19-Sep 06-Sep - 06-Oct 21 Oug - 20-Sep 28-Sep - 21-Oct

Table 9.2.5- 19: Full FOCUS Step 3 application data

Table 9.2.5- 19:	Full FOCUS	Step 3 applica	mon data 💮 🔻		
Run IDs		***	DGR, I / PMF I	Y Or S	
GAP group name (De	GR)	<b>&amp;</b>	Winter oilseed rape		
Assessment name (Pl	MT)	. 0	Seed treatment To		
FOCUS model crop (	(crop group)		Oil seed rape, winte	k (arable@rops)	
Use pattern			0. <b>01,2</b> kg a <b>, 0</b> ∕ha <b>(</b>	, 0, W	4.
Appl. method (Run-o	off CAM, depth i	inc V	Soil incorp. (8 - inco	orp soil at one deptl	cm)⊙
PAT start date	, <u> </u>	Š & . A			
(relative to c	rop event or abs	vlute) 💇 🤊	14 days before emer	gence S	, <b>*</b> U'
PAT window rang	rop event or abs	, Ø Ø	30 days for all scene	rios (@in = 30 day	s) 🤊
	PAT			PAT	∀
Drainage	√ ,V	Annlieation	Runoff		Application
scenarios	start/end date &	ate O	Scenarios «	start/end date	date
	(Julian day)	of one of the control		(Juhan day)	
D2	01_Sep/01_Oct	© 03-S©p ?	OR1 &.	21-Aug/20-Sep	21-Aug
			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
Ditch/Stream	(244/204)	L (/// A 37	Pord/Stream	(233/263)	
Ditch/Stream	(244/2 <b>7</b> 74)	L (/// A 37			-
D3	(2) 19-A@2/18-\$ex	L (/// A 37			23-Sep
		18-Afry		(233/263)	23-Sep
D3	231/261)	Y S Se-Afrey S & L	Stream	(238/263) 21/Sep/21-Oct (264/294)	23-Sep
D3 Ditch	(2) 19-A@2/18-\$ex	Y S Se-Afrey S & L	Stream	(238/263) 21/Sep/21-Oct (264/294)	23-Sep
D3 Ditch	231/261)	18-Afry	Stream	(238/263) 21/Sep/21-Oct (264/294)	23-Sep
D3 Ditch	19-A0g/18-\$ep 331/261 20-Aug/19-Sep (232/262)	18-Aûs 27-Aug	Stream	(238/263) 21/Sep/21-Oct (264/294)	23-Sep
D3 Ditch	19-A02/18-\$ep 331/261 20-Aug/19-Sep	18-Aûs 27-Aug		(238/263) 21/Sep/21-Oct (264/294)	23-Sep

Steps 1-2 calculations were performed according to formulas implemented in FOCUS STEPS 1+2 version 3.21

Step 3 calculations were performed using the FQCUS SWASH 5.3 suite, including

FOCUS PRZM 4.8.1

FOCUS MACKO 5.5.

Standard procedures and Settings were used for Steps 1-2 and 3 assessments.

Substance related parameters which have been used for fluopicolide and its metabolites M-01 (AE C653711), W-02 (AE C6537188) and M-03 (AE 0608000) and whose derivation is described in detail in the coor modelling document KCP 9.2.5/01 have been used in the calculations at FOCUS SW Steps 12 level are summarised in Table 9.2.5- 20 and at Step 3/4 level in Table 9.2.5- 21.



## Table 9.2.5- 20: Substance parameters used at FOCUS Steps 1-2 level

Parameter	Unit	Fluopicolide	M-01 (AE C653711)	M-02 (AE C657188)	M-03 (AE 0608000)	
Molar mass	(g/mol)	383.59	190.03	225.56	399.58	Ť
Water solubility	(mg/L)	2.8	1830	9721	10 🐠	<u></u>
Koc	(mL/g)	267.7	24.1	5.7	1063 <b>%</b> . A	Z)
Degradation						," A
Soil	(days)	182	146	17.0	, O7.9, O	
Total system	(days)	1000	1000	<b>4000</b>	1.9 °Y	Ž.
Water	(days)	1000	<b>10</b> 00	©1000		V"
Sediment	(days)	1000	£ 1000	_6♥ 1000	C 1000	
Max occurrence			1000	, O		,W
Water / sediment	(%)	100	20.3	\$ 68.2 €	≈ 0.001 °	L,
Soil	(%)	100 🔍	48	16.4	10.9	<i>D</i> *

Table 9.2.5- 21: Substance parameter used for fluoricolide and its metabolite M-03 (AE 0608000) at Step 3/4 level

Parameter Substance SWASH code General	nit O	Parcht	Metabolite
Substance		Fluopicolide	M-03 AE 0608000)
SWASH code		Fluoricolide	M-03 AE 0608000) M039
General Molar mass Water solubility (temp.)			
Molar mass	øg/mol/C	38389	<u></u>
Water solubility (temp.)	( / <b>T</b> ^g (N)	1 ♣ 2.8 <i>6</i> /2 <b>0</b> °C .	(20 °C) (20 °C)
Vapour pressure (temp.)	(mg/L9)	3.035×07 (20×°C)	0 (20 °C)
Crop processes Coefficient for untake by plant (TSCF)	(-) (-) (-) (-) (-) (-) (-) (-) (-) (-)	0.5	0 50
Coefficient for uptake by plant (TSCF)	(-)	0.5	0
Coefficient for uptake by plant (TSCF) Wash-off factor  Sorption  Koc  Kom  Eraundlich expo@nt (1/1)	0 (1/10)		50
Sorption		7 O 4	V
K _{oc}	mL/g	267.74 267.74 267.74 267.888	106.89
K _{OM}	mL/g)	D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	62
Freundlich exponent (1/n)	O' WY		0.971
Transformation &		1820 200 200 200 200 200 200 200 200 200	
DT50 in soil	Jays)	182	17.9
temperature & &	(°C)	<b>1 2 0</b>	20
moisture content (pF)	(log(em))	2	2
formation fraction insoil	( <del>'</del> -)	<b>å</b> -	0.53
DT50 in water	(days) □	1000 20 -	1.9
temperature 2 2 2	(°CO)	20	20
formation fraction in water	) <u>,</u> (9)	40° -	-
DT50 in sediment	(days)	1000	1000
temperature	°%(°C)℃	20	20
formation fraction in sediment		-	<del>.</del>
DT50 on canopy  Expenent for the effect of moisture	(days)	10	10
Exponent for the effect of moisture			
PRZM and TOXSWA (Walker exp)	(-)	0.7	0.7
MACRO (calibrated value)	Q." (-)	0.49	0.49
Effect of temporature	, a = , a		
TOXSWA (molar activation energy)	(KJ/IIIOI)	03.4	65.4
MACRO (effect of temperature)	(1/K)	0.0948	0.0948
PRZM Q Q ₁₀ )	(-)	2.58	2.58
Effect of temperature  TOXSWA (molar activation energy)  MACRO (effect of temperature)  PRZM (Q ₁₀ )			



#### II. Results and Discussion

The PEC values were calculated for fluopicolide and its metabolites M-01 (AE C653711), M-02 (AE C657188) and M-03 (AE 0608000) according to the equations implemented in the "STEPS in FOCUS" calculator Table 9.2.5- 22 to Table 9.2.5- 25.

#### Parent substance fluopicolide

#### Winter oilseed rape - Seed treatment - 1 × 12g a.s./ha (DGR I / PMT I)

FOCUS Steps 1-2 PECsw and PECsed for fluspicolide, GAD group name Table 9.2.5- 22: winter oilseed rape, assessment name Seed treatment (DGR I/PMT IV

			@ 1°	
Scenario FOCUS	Waterbody	Max PECsw (μg/L)*		ECsowa Max PECsed
Step 1	-	2.95	RunOst 2	7.89
Step 2				
Northern Europe	Oct Feb.(Autumn)	1.45	RunOffic	45 43.89 4 *
Southern Europe	Oct Feb.(Autumn)	K16 0**		.165 3.91 *

Single applications are marked

### Metabolite M-01 (AE

Winter oilseed rape Seed Weatment

FOCUS Steps 1-2 PECsw and PECsed for M-01 (AE C653711), GAP group Table 9.2.5- 23: name winter bilseed rape, assessment name Seed treatment (DGR I /

Scenario FOCUS	Waterbooky			7d-PEC _{sw,twa} (μg/L)**	Max PECsed (μg/kg)*
Step 1	\$ , *	\$1.31 \$	0 - 2	1.31	0.316
Step 2					
Northern Europe	Ocl.— C Feb.(Autumn)	0.644 * * *	, - Q	0.643	0.155 *
Southers Europe	Oct. Feb.(Antimn)	Q 0.515	<del>-</del>	0.514	0.124 *

Single applications are morked.

TWA interval as required by tox

^{*} TWA interval as required by edotox



#### Metabolite M-02 (AE C657188)

#### Winter oilseed rape - Seed treatment - 1 × 12g a.s./ha (DGR I / PMT I)

Table 9.2.5- 24: FOCUS Steps 1-2 PECsw and PECsed for M-02 (AE C657188), GAP group on name winter oilseed rape, assessment name Seed treatment (DGR PMT I)

Scenario FOCUS	Waterbody	Max PECsw (μg/L)*	Dominant entry route	7d-PECsw,twa	Max PE Csed (µg/kg)*
Step 1	-	0.574	\$ -	0.573	Ø:033 &
Step 2					4 5 4
Northern Europe	Oct Feb.(Autumn)	0.128 *		0.128	Q.907 × *
Southern Europe	Oct Feb.(Autumn)	0.103		0.102	

 ^{*} Single applications are marked.

#### **Metabolite M-03 (AE 0608000)**

### Winter oilseed rape - Seed treatment - 1 12g.a.s./ha (DGR / PMDI)

Table 9.2.5- 25: FOCUS Steps 1-2 PECSW and PECsed for M-03 XE 0608000), GAP group name winter oilseed cape, assessment name Seed treatment (DGR I / PMT D)

Scenario FOCUS	Waterbody	Max PECsw (trg/L)*	Dominant entry	7d-PECsw,twa	Max PECsed (μg/kg)*
Step 1		Ø9.387 🐧 🎽	// U//\\\	0.140	0.413
Step 2				<del>************************************</del>	
Northern Europe	Oci.			0.065	0.177 *
Southern Europe	OctQ	0.133		0.052	0.142 *

^{*} Single applications are marked.

Step 3 calculations were conducted for flaopicolide and its metabolite M-03 (AE 0608000) employing the models of the FOCUS SW state. Reported values represent loadings *via* all relevant entry routes are shown in Table 9.2.5-26 and Table 9.2.5-27.

#### Parent substance fluopicolide

# Winter oilseed rape - Seed treatment 0.012 kg a.s./ha (DGR I / PMT I)

Table 92.5- 26: FOCOS Step 3 PECsw and PECsed for fluopicolide, GAP group name winter oilseed rape, assessment name Seed treatment (DGR I / PMT I)

Scenario FOCUS	Waterbody	Max PEC _{sw} (μg/L)*	Dominant entry route	7d-PEC _{sw,twa} (μg/L)**	Max PECsed (μg/kg)*
Step 3					

^{**} TWA interval as required by ecotox

^{**} TWA paterval as required by ecotox



D2	Ditch	< 0.001	*	Drainage	< 0.001	0.006 *
D2	Stream	< 0.001	*	Drainage	< 0.001	0.003 *
D3	Ditch	< 0.001	*	Drainage	< 0.001	<0.001 * *
D4	Pond	0.002	*	Drainage	0.002	0.0110 *
D4	Stream	0.004	*	Drainage	0.00	0.004
D5	Pond	0.002	*	Drainage	0.002	Ø.018 * \$
D5	Stream	0.003	*	Drainage	0.001	0.004
R1	Pond	< 0.001	*	RunOff	<0.001	0.001 *
R1	Stream	< 0.001	*	<u> </u>	<0.001	(0.00 <u>0</u>
R3	Stream	< 0.001	*	RunOff 🕎	~ (0.001)	0° <0.0001

^{*} Single applications are marked.

#### Metabolite M-03 (AE 0608000)

### Winter oilseed rape - Seed treatment 0.012kg as ha (DGR LPMTU)

Table 9.2.5- 27: FOCUS Step 3 PECsw and PECsed for M-03 AE 06080005, GAP group name winter oilseed range, assessment name Seed treatment (DGR I / PMT I)

Scenario FOCUS	Waterbody	(μg/L3)*	Dominant entry	Od-PEC _{w,twa} (µg/L)**	Max PECsed (μg/kg)*
Step 3					
D2	Durch &	. 00.001 *		<0,001	0.002 *
D2	Otream	<0.001		<b>0</b> .001	0.001 *
D3	Ditch &			© <0.001	<0.001 *
D4 %	Pond 👟	₩ 0.002 ×		0.002	0.002 *
D4 🐬	Stream	0.004		0.003	0.004 *
D5	Rond 4	\$0.001\sqrt{*}		< 0.001	<0.001 *
D5	Stream Pond	\$ 0.000	5 -S	< 0.001	<0.001 *
R1	Posed O		~ ~-	< 0.001	<0.001 *
R1 🔏	Stream	S<0.00 ×	<u> </u>	< 0.001	<0.001 *
R3	Stream	Q 001		< 0.001	<0.001 *

^{*} Single applications are macked.

#### MI. Conclusion

Predicted environmental concentrations of the fungicide fluopicolide and its metabolites in surface water (PLCsw) and sediment PECsed) were calculated for the use in winter oilseed rape in Europe, employing the liered FOCLY Surface Water (SW) approach (FOCUS 2001, 2015). All relevant entry routes of a compound into surface water (principally a combination of spray drift and runoff/erosion or drain flow were considered.

^{**} TWA interval as required by ecotox

^{**} TWA interval as required by ecous



The risk assessment report was conducted according to FOCUS (2001,2015) and is considered valid to assess predicted environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for fluopicolide and its metabolites in oil seed rape (winter).

#### PEC_{sw} for fluoxastrobin

PEC _{sw} for fluoxastrobin	KCP 9.2.5/03
Data Point:	KCP 9.2.5/03
Report Author:	
Report Year:	
Report Title:	Fluoxastrobin (FXA): PECOW, sed FOCUS EUR See in Winter (Diseed rape in Europe
	Europe Survey Company
Report No:	EnSa-20-0400
Document No:	M-68/158-01-1   V V V V V V V V V V V V V V V V V V
Guideline(s) followed in	FOCUS 2015 Generic guidance for FOCUS Surface Water Scenarios Version 10
study:	May 2015 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Deviations from current	None O' & Y O O O O
test guideline:	
Previous evaluation:	No, not previously submitted
GLP/Officially recognised	No, not conducted under GLA Officially recognised testing acilities
testing facilities:	
Acceptability/Reliability:	Xes X X X X

#### **Executive Summary**

Predicted environmental concentrations of the fungiscide flux astrobin in surface water (PECsw) and sediment (PECsca) were calculated for the use in Europe, employing the riered FOCUS Surface Water (SW) approach (FOCUS 2001, 2005). All relevant entry routes of a compound into surface water (principally a combination of spray drift and remoff/exission or drain flow) were considered in these calculations."

The uses of fluoxastrobin in winter oilseed rape were assessed according to the Good Agricultural Practice (GAP) in Prope.

# J. Materials and Methods

Intended GAPs for the use of fluoxastrobin in Europe were analysed and consolidated according to regulatory and modelling requirements. As a result one or more uses may be covered by a single modelling GAP row (DGR). The translation of the regulatory GAP for modelling purposes is shown in Table 9.2.5-28.

GAP translation for modelling purposes

GAP group ID	GAP group name DGR) and use IDs	Covered crop(s)	Growth stage	Max. apps	Interval (days)	Rate (kg a.s./ha)
DGR I	winter oils cod rape	winter oilseed rape	BBCH 00	1	-	$1 \times 0.009$

The implementation of the modelling GAP (Table 9.2.5-28) at Steps 1-2 level is shown in Table 9.2.5-29. One or more calculations (modelling tasks, PMT) are necessary to fully cover the use assessed. The number and name of the respective DGR is provided for easier reference.



Table 9.2.5- 29: FOCUS Steps 1-2 specific data for the GAPs assessed

Run IDs (DGR / PMT)	GAP group name (DGR)	Assessment name (PMT)	FOCUS crop (crop group)	Season	Crop . cover
DGR I	winter oilseed	Seed treatment	oil seed rape, winter	autumn	no interception
PMT I	rape		(arable crops)	(Oct Feb.)	

This section provides the implementation of the modelling GAP (Table 9.25-28) at Step level Also, here one or more calculations (modelling tasks, PMT) are necessary to fully cover the use assessed. The number and name of the respective DGR is provided for easier reference.

Please note that PMTs at Steps 1-2 and Step 3 do not becessarily furly correspond to each other flue to inherent differences in the models.

The application dates for this assessment were set with the help of the tool App Date (Klein 2018), which proposes dates for specific crop stages (given a BBCH code) based on the crop development as defined in the FOCUS model scenarios for groundwater and surface water.

The summary of all Step 3 PMTs is provided in Table 9.2.5-30. The detailed information on individual uses is given in Table 9.2.5-31 and Table 9.2.5-32.

Table 9.2.5-30: Overview of FOCUS Step assessments

Run IDs (DGR / PMT)	GAP group name (DGR)	Assessment pame (PMT) Corop group)
DGR I	Winter offseed cape	Seed treatment Oil seed rape, winter
PMT I		(grable crops)

## GAP group name winter oilseed cape, assessment name Seed treatment

Table 9.2.5-31: Symmarised FOCUS Step 3 application data (PAT settings)

Assessment name  Seed treatment  D2 Ditch/Stream  D3 Ditch  D4 Pond Stream	Appleation Window used in modelling
Seed treatment  D2 Ditch/Stream  D3 Ditch  D4 Pond Stream  D5 Pond Stream  R1 Bond/Stream	01-Sep - 01-Oct 19-Aug - 18-Sep 20-Aug - 19-Sep
DO Pont Street	19-Aug - 18-Sep 20-Aug - 19-Sep
	20-Aug - 19-Sep 06-Sep - 06-Oct
D5 Pond/Stream R1 Fond/Stream R3 Stream	06-Sep - 06-Oct 21-Aug - 20-Sep 21-Sep - 21-Oct
R3 Stream O O	21-Sep - 21-Oct
Seed treatment  D2 Ditch/Stream  D3 Ditch  D4 Pond Stream  D5 Pond/Stream  R1 Fond/Stream  R3 Stream	
D5 Pond/Stream R1 Fond/Stream R3 Stream	
8	



Table 9.2.5- 32: Full FOCUS Step 3 application data

Run IDs			DGR I / PMT I		
GAP group name (	DGR)		Winter oilseed rape		
Assessment name (PMT) Seed treatment			Seed treatment		
FOCUS model crop	(crop group)		Oil seed rape, winter (arable crops)		
Use pattern			0.009 kg a.s./ha		
Appl. method (Run	-off CAM, depth i	inc.)	Soil incorp. (8 - incorp soil a one depth, 3 cm)		
PAT start date (relative to	crop event or abs	olute)	14 days before emergence		
PAT window ra	nge		30 days for all scenarios (min = 30 days)		
Drainage scenarios	PAT start/end date	Application date	Runoff scenarios start/end date date		
scenarios	(Julian day)	uate Q	Julian day	*	
D2	01-Sep/01-Oct	03-Sep	° R1 21-Aug/20-8-p 21-Aug		
Ditch/Stream	(244/274)		Pond Stream (233/265)	, 0	
D3	19-Aug/18-Sep	1,85 Aug ∞	R3 21-Sep 21-Oct 23-Sep	1	
Ditch	(231/261)		Stream (264/294)		
D4	20-Aug/19-Sep	0 27-Ang			
Pond/Stream	(232/262)				
D5 06-Sep/06-Set 707-Sep					
Pond/Stream	(249/249)				

Step 1-2 calculations were performed according to formulas implemented in FOEUS STEPS 1+2 version 3.2.

Step 3 calculations were performed using the FOCUS WASH 5.3 suite, including

FOCUS PRZM 4.3.1 FOCUS MAÇRO 5.0.4 FOCUS TOXSWA 5.5.36

Standard procedures and settings were used for Stops 1-2 and 3 assessments.

Substance related parameters which have been used for fluoxastrobin have been taken from the EFSA LoEP [EFSA Scientific report 192, 13 June 2007]. The parameters used in the calculations at FOCUS SW Steps 1-2 level are summarised in Table 9.2.5–33 and at Step 3/4 level in Table 9.2.5–34.

Table 9.2.5-33: Substance parameter said at FOCUS Steps 1-2 level

Parameter &	Unit	Fluoxastrobin
Molap mass	g/mol)	458.8
Water solubility O	(mg/L)	2.29
Soc S	(mL/g)	752
Degradation		
Sojl 🔊	(days)	39.1
Fotal system	(days)	182
Water	(days)	182
Sediment	(days)	1000
Max occurrence		
Water / sediment	(%)	100
Soil	(%)	100



Table 9.2.5- 34: Substance input parameters at Steps 3/4 level

Parameter	Unit	Parent	
Substance		Fluoxastrobin	
SWASH code		FXA	
General		Ö	
Molar mass	(g/mol)	458	4 . Ş
Water solubility (temp.)	(mg/L)	2.29 (20 °C)	
Vapour pressure (temp.)	(Pa)	Ø, 20 °C) . □	. Q 45
Crop processes	Ö	0 50	
Coefficient for uptake by plant (TSCF)	<b>%</b> (-)		9 4
Wash-off factor	Ç (1/m)		
Sorption	ř	0 50 50 751.66 436 9.86	
K _{OC}	(1112/5)	751.68	
K _{OM}	(mL/g)	436'	
Freundlich exponent $\binom{1}{n}$	b (-}\>r	751.66 436 436 436	
Freundlich exponent (1/n)  Transformation  DT50 in soil temperature moisture content (pF) formation fraction in soil  DT50 in water temperature		751.68 436 436 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86 7.86	4 60
DT50 in soil temperature moisture content (pF) formation fraction in soil DT50 in water temperature formation fraction in water DT50 in sediment	Øays) &	39.1	
temperature	(°C)		
moisture content (pF)	(log(espn))		
formation fraction in soil			<b>S</b>
DT50 in water	(days)		Z
formation fraction in water	(°C)	0° 20 5° 7	Y Y
formation fraction in water of ST DT50 in sediment of ST DT50 in sed			
DT50 in sediment	(days)		
temperature formation fragion in Sediment	(°C) 4		
formation traggion in sediment	(-)		
temperature formation fraction in Sediment DT50 on canopy	(-) (da\s)	39 1 5 7 2 5 7 5 7 180 5 7 1000 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 10 5 7 1	
Exponent for the effect of moisture PRZM and TOXSWA (Walker exp.)	≪J (-)		
MACRO (calibrated volue)	(-)@	Ø.49	
Effect of temperature			
TOXSWA (molar activation energy)	(kJ/mol)	65.4	
MACRQ * Geffect of temperature *	(1/K)	© 0.0948 2.58	
PRZM (Quo A S	(-),	2.58	

II. Results and Discussion

The PEC values were calculated for flooxastrobin according to the equations implemented in the "STEPS 1-2 in FQCUS" calculator are shown in Table 9.2.5 35.

# Winter oilseed reatment – 1 9 g as./ha (DGR I / PMT I)

Table 9.2.5-35: FOCUS Steps 12 PECsw and PECsed for fluoxastrobin, GAP group name winter of seed vape, assessment name Seed treatment (DGR I / PMT I)

Scenario FOCUS	Waterbody		Dominant entry route	7d-PEC _{sw,twa} (μg/L)**	Max PECsed (μg/kg)*
Step 1		7 138 Q	RunOff	1.52	11.5
Step 2					
Northern Europe	Oct. Oct. (Antumn)	0.747 *	Erosion	0.732	5.55 *
Southern	Oct	0.607 *	Erosion	0.594	4.50 *
Europe	Feb.(Autumn)				

^{*} Single applications are marked.

^{**} TWA interval as required by ecotox



Step 3 calculations were conducted for fluoxastrobin a employing the models of the FOCUS SW suite. Reported values represent loadings *via* all relevant entry routes are shown in Table 9.2.5- 36.

#### Winter oilseed rape - Seed treatment - 0.009 kg a.s./ha (DGR I / PMT I)

Table 9.2.5- 36: FOCUS Step 3 PECsw and PECsed for fluoxastrobin, GAP group name winter oilseed rape, assessment name Seed treatment (DGR I / PMT ).

Scenario FOCUS	Waterbody	Max PEC _{sw} (μg/L)*	Dominant entry	7g PECsw,twa Q(μg/L)**	Max PECsed
Step 3			30 ⁹ A		
D2	Ditch	<0.001 *	Drainage >	©<0.001\(\sqrt{1}\)	O <0@01
D2	Stream	<0.001 *	Dyainage	<0.001	°\$0.001° *
D3	Ditch	<0.001 *	Drainage O	©0.001	<0.00 *°
D4	Pond	<0.001 ***	Dramage	<0.001	<0.001 *
D4	Stream	<0.00	Drainage	© \$\int\tau\tau\tau\tau\tau\tau\tau\tau\tau\ta	\$\int_0.00\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilie}\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde{\tilde
D5	Pond	<0001 %*	Dramage N	\$\frac{1}{2} \left\( 0.00 \)	<0.601 *
D5	Stream	~ (0.001 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	gamaga	√ <b>99</b> 01	<b>8</b> € 6.001 *
R1	Pond	\$\frac{\(\sigma\)}{\(\sigma\)}\(\sigma\) \(\sigma\) \(\	RunOff	©0.001	<b>S</b> <0.001 *
R1	Stream	Ø.001 × *	Runoff	<0.001	<0.001 *
R3	Stream	<0.001	@RunOff &	<b>49.001</b>	<0.001 *

^{*} Single applications are marked

#### IN. Conclusion

Predicted environmental concentrations of the fungicine fluorastrobar in surface water (PECsw) and sediment (PECsed) were calculated for the use in winter oilseed rape in Europe, employing the tiered FOCUS surface Water (SW) approach (FOCUS 2001, 2015). All velevant entry routes of a compound into surface water (principally a combination of spray drift and runoff/erosion or drain flow) were considered.

#### Assessment and conclusion by applicanto

The risk assessment report was conducted according to FOCUS (2001,2015) and is considered valid to assess predicted environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentrations in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sediment (PECsed) for the environmental concentration in surface water (PEC_{SW}) and sedimental concentration in surf

# CP 9.3 Fate and behaviour in air

For information on the fate and behaviour in air please refer to Document MCA, Section 7.3.

# CP9.3. Route and rate of degradation in air and transport via air

For information on route and rate of degradation in air and transport via air please refer to Document MCA, Sections 7.3.1 and 7.3.2.

^{**} TWA interval as required by ecotors



There are no other routes of exposure of the product is used according to good agricultural product of the route of exposure.

Therefore no further estimations are considered necessary. To be the state of Septiment of the state of the s THE STATE OF THE S