

Document Title

Summary of the fate and behaviour in the environment for Fosetyl-aluminium + Fluopicolide WG 71.11 (666.7 + 44.4 g/kg)

Data Requirements

EU Regulation 1.107/2009 & EU Regulation 284/2013

Document MCP

Section 9: Fate and behaviour in the environment

According to the Guidance Data of Summary of the fate and behaviour in the environment for osetyl-aluminium + Fluopicolide WG 71.11 (666.7 + 44.4 and 1971)

Document MCP
section 9: Fate and behaviour in the environment
recording to the Guidance Document SANCO/10181/2013 for
preparing dossers for the approvator a chemical active substance

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Version history

	Data points containing amendments or additions ¹ and brief description	Document identifier and version number
2016-09-01	Dossier update according to "Request for additional information of the supplementary dossier submitted by Bayer CropScience for the approval renewal of the active substance Fosetyl (2015-5865)" by	
It is suggested tha SANCO/10180/20	the PEC calculations have been added to chapters (1971), and (1972) and (1972	on history as outlined in

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CP 9 FATE AND BEHAVIOUR IN THE ENVIRONMENT

Fosetyl was included in Annex I to Directive 91/414/EEC in 2006 (Directive 2006/64/CE of 18 July 2006, Entry into Force on 1 May 2007). This Supplementary Dossier contains only data which were not submitted at the time of the Annex I inclusion of fosetyl under Directive 91/414/EEC and which were therefore not evaluated during the first EU review. All data which were already submitted by Bayer CropScience (BCS) for the Annex I inclusion under Directive 91/414/EEC are contained in the DAR, its Addenda and are included in the Baseline Dossier provided by BCS. These data are only mentioned in the Supplementary Dossier for the sake of completeness and only general information (e.g. author, reference etc.) is available for these data. In order to facilitate discrimination between few data and data submitted during the Annex I inclusion process under Directive 91/414/EEC, to old data are written in grey typeface. For all new studies, detailed summaries are provided within this Supplementary Dossier. Additional information requested by the RMS France on 2016-07-27 during the evaluation of the Supplementary Dossier is highlighted in green.

Fosetyl is the ISO common name for ethyl hydrogen phosphonare (ILPAC) but the aluminium salt fosetyl-aluminium (fosetyl-Al), a variant of fosetyl is used in the formulated product.

In original reports study authors may have used different names or codes for metabolities of footyl-Al. In this summary, a single name or single code is used for each metabolities. A full list containing structural formula, various names short forms, codes and occurrences of metabolities is provided as Document N3.

As some pragmatic approach "plosphonic acid" formed as a major metabolite is reported in this Supplementary Dossier as the free acid for the sake of clarity, and unequivocal handling. After application, aluminium tris-Cethyl phosphonate (i.e. fosetyl-Al) dissociates into the O-ethyl phosphonate and aluminium ions. Any phosphonate formed from O-ethyl phosphonate in the following would never be present in the form of the free acid (i.e. phosphonic acid) under the conditions of the environment (pH 4 to 9). This conclusion is supported by the molecular structure and by the dissociation constant observed (dissociation constant for the first step of deprotonation: pKa = 2.0). Consequently phosphonates in their fully protonated form are strong acids that spontaneously form salts in contact with soil or natural water with any suitable counter ion present (i.e. sodium, potassium, magnesium, calcium). With the ability to readily form salts in the environment phosphonates are, in terms of their acidic or alkaline character, similar to the salts of phosphoric acid (i.e. phosphates) in their environmental behavior.

The formulation Foseto aluminium of Fluopicolide WG 1.11 (FEA + FLC WG 71.11) is a water dispersible granule (WG) formulation containing 666.7 g/kg of fosetyl-Al and 44.4 g/kg of fluopicolide. This formulation is registered throughout Europe under trade names such as Profiler. FEA + FLC WG 71.11 was not a representative formulation for the Annex I inclusion of fosetyl under Directive 91/414/EEC but has been evaluated as the representative formulation for the Annex I inclusion of fluopicolide under Directive 91/414/EEC. As FEA + FLC WG 71.11 is a representative formulation for the approval renewal of fosetyl, only the fate and behavior in the environment for this active substance will be described.

Use patterns considered in this risk assessment

Table 9-1: Intended application pattern

Crop	Timing of application (range)	Number of applications	interval	Maximum label rate	individual treati	ment@rånges)
			[days]	[kg prod./ha]	Fluopicolide	A osetyl-Al
Grapes	BBCH 15-81	1-3	10-14	3.0	0.133	2.0 F

Compounds addressed in this document

In addition to the active substance fosetyl-Al, the degradation product summarised in Table 9-2 was addressed in this document as it was major in environmental that studies.

Table 9-2: Active substance and degradation products addressed in this document

Compound / Codes	Chemical Structure	Considered for
		PECST
Phosphonic acid		O DEW

Definition of the residue for risk assessment

Justification for the residue definition for risk assessment is provided in Document MCA, Section 7.4.1.

Table 9-3: Definition of the residue for this assessment

Compartment Residue Definition
Soil Fosety Al, phosphonic acid
Surface water (Fosetyl-Al Chosphonic acide
Sediment Phosphonic acid
Groundwater Fosetyl-Al Posphonic acid
Air J D Fosetyl-Ai

CP 9.1 Fate and behaviour in soil

The proposed degradation pathway of fosetyl-aluminium (fosetyl-Al) in soil is shown in Figure 9. 10 is

Figure 9.1- 1: Proposed degradation pathway of fosetyl-Al in soil For further information on the fate and behaviour in soil please refer to Document MCA, Section 7.1. Phosphonic acid @

CP 9.1.1 Rate of degradation in soil

For information on the rate of degradation in soil please refer to Document MCA, Section 7.1.2.

CP 9.1.1.1 Laboratory studies

For information on laboratory studies please refer to Document MCA, Section 7.1.2.1.

CP 9.1.1.2 Field studies

For information on field studies please refer to Document MCA, Section 7.1.2.2.

CP 9.1.1.2.1 Soil dissipation studies

For information on field dissipation studies please refer to Document MCA, Section 7.1.2.2.1

CP 9.1.1.2.2 Soil accumulation studies

For information on field accumulation studies please refer to Document MCA, Section 7.1.2.2.2

CP 9.1.2 Mobility to the soil

For information on mobility studies please Fer to Document MCA, Section 7,1.4

CP 9.1.2.1 Laboratory studies

For information on laboratory studies please refer to Document MCA Section 7.1.4.1

CP 9.1.2.2 La simeter studies

For information on losimeter studies please refer to Document MCA. Section 7.1.4.2.

CP 9.1.2.3 Field leaching studies

For information on held leaching studies please refer & Document MCA, Section 7.1.4.3.

CP 9.1.3 Estimation of concentrations in soil

New calculations were performed to reflect findings from new studies presented in Document M©Å, Section 7, Fate and behavior in the environment. In addition these calculations considered the most recent guidance documents for exposure calculations. Calculations of predicted environmental concentrations in soil (PEC_{soil}) are presented below.

Predicted environmental concentrations in soil (PECs)

Endpoints for PEC_{soil}

Table 9.1.3- 1:

concentrations in soil (PEC _{soil}) are presented below.							
concentrations in soil (PEC _{soil}) are presented below. Predicted environmental concentrations in soil (PEC _s) Endpoints for PEC _{soil} Table 9.1.3- 1: Modelling input parameters for fosetyl-aluminium (fosetyl-Al) and its metabolite Endpoint Fosetyl-Al and metabolite Value used for modelling Fosetyl-Al Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%]							
Endpoints for PEC _{soil}							
Table 9.1.3-1: Modelling input para	Table 9.1.3-1: Modelling input parameters for foscryl-aluminium (fosetyl-Al) and its metabolite						
Endpoint	Fosetyl-Al and metabolite O O Value used for modelling S						
Fosetyl-Al							
Molar mass [g/mol]	3 0 0 354.44 0 0 0						
DT ₅₀ [days] (worst-case DT ₅₀)							
Maximum occurrence [%]							
Molecular mass correction							
Phosphonic acid							
Molar mass [g/mol]							
DT ₅₀ [days] (worst-case DT ₅₀)	7 270 ° 270 ° 4						
Maximum occurrence [%]	1000 (3 equivalents) O						
Molecular mass correction	\$\int_{\infty} \tag{\chi} \c						

PECsoil modelling approach

The predicted environmental concentrations in soil (PEGoil) for the active substance fosetylaluminium (foset) Al) Were calculated based on simple first tier approach (Microsoft® Excel spreadsheet) assuming even distribution of the compound in the upper 0-5 cm soil layer. A standard soil density of 5.5 g/cm³ was assumed.

Crop interception will reduce the amount of a compound reaching the soil and therefore this has been taken into account depending on the growth stage at application. The interception rates follow the recommendations of the FOCUS groundwater guidance paper (FOCUS 2014) for vines (see Table 9.2.4-2).

Derivation of kinetic modelling input values for fosety. Al and its major degradation product is presented in Document MCA, Section 7:12, a summary of modelling input parameters is given in the report KCP 9.1.3/01.

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Predicted environmental concentrations in soil (PECs) of fosetyl-Al and its major degradation product

For fosetyl-Al, the major degradation product phosphonic acid was considered.

;; 2015; M-532544-01-1 KCP 9.1.3/01 Report:

Fosetyl-Al (FEA) and metabolite: PECsoil EUR - Use in pome fruits and grapes of Europe Title:

Report No.: Document No.:

Guideline(s):

EU Commission, 2000, Guidance Document on Persistence in Soft (Working Document), 9188/VI/97 rev.8; FOCUS 1997, Soil persistence models and EU registration; FOCUS, 2014: Generic Guidance for Tier 1 FOCUS Groundward Assessments, Version 2.2

Guideline deviation(s): **GLP/GEP:**

Methods and Materials:

The predicted environmental concentrations in soil degradation product phosphonic acid were calculated based on a first tier approach using a Microsoft® Excel spreadsheet.

The use of fosetyl-Al in grapes was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Detailed application data used for simulation of PEC soft were compiled in Table 9.1.3-2.

Application pattern used for PECsoil calculations of Tosety 1-Al **Table 9.1.3-2:**

Individual Crop	FOCUS crop used for Interception	Rate per Season [g. a.s./ha]	1 Interval	cation (Plant () Inferception ()	BBCH Stage	Amount reaching the soil per application [g a.s./ha]
Grapes	Vines	3 × 2000	, \$\frac{10}{2}	D× 60 V	15-81	3 × 800.00

Substance Specific Parameters:

PEC_{soil} calculations were based of the OT₅₀ of 0.1 days (worst case of laboratory studies) for the parent compound fosetyl Al. Further compound specific input parameters are summarized below.

Input parameters for PEP soil for fosetyl-Al and its major degradation product

Compound		Abox occueence in soil	Molar mass [g/mol]	Molar mass corr. factor
Fosetyl-Al	0.0	100	354.14	1
Phosphonic Acid		.O* 100	246	0.6946

Findings:

The maximum PEC_{soil} values for fosetyl-Al and its major degradation product are summarized in Table 9.1.3- 4. The accumulation potential of fosetyl-Al and its metabolite phosphonic acid after long term use was also assessed. The results are presented in Table 9.1.3- 5. Detailed PEC_{soil} and Table 9.1.3- 7.

Table 9.1.3- 4: Maximum PEC_{soil} of fosetyl-Al and its degradation product for the uses assessed

TI "	Fosetyl-Al	Phosphonic	c acid «
Use pattern	PECsoil	mg/kg]	
Grapes, 3×2000 g a.s./ha	1 ,067	2.167	4

Table 9.1.3- 5: PEC_{soil} of fosetyl-Al and its metabolite for the uses assessed, considering accumulation mixing depth of 5 cm for plateau calculation

	Ċ	©osetyl-Al	P	hosphonie acid
Use Pattern	PEC	[mg/kg]	Q	[mg(kg]
Grapes, 3×2000 g a.s./ha	plateau ,	Ø.001 Ø.007		*4396 *3.563©

Table 9.1.3- 6: PEC_{soil} of fosetyOAl and its degradation product for the use in grapes (3×2000 g a.s./ha, 3×60% intereseption, 10 d app. intereal)

	^~	*A,	408	ما ا		O ^p
	Substance	4, S	Fosetyl	-Al	Phospi	onic acid
	Days after m	aximum		PEC _{soil} [mg/kgj	
	Initial 🗳	<i>∞</i> 0 €	9 .067		& 2.	167 🔊
		₩1 _@	₹0.00M	?) 🔊	161 🧷
Q	Short-term	2	~ <0,000	Ĭ @	2.	156
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			√ √ 0,00	1 On L	2	145
	& ~	% 7	/ √ ∮0.00	1 ~	2× 2×	¥28
		0 14 📞	© <0.0 ©		<i>@</i> 2.	.090
Ц		b 2 <u>.</u> ₹	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1	₩ 2.	.053
	Long-term	208 ⁹	© <u>~0.00</u>	1,	2.	.017
	, Ø , Š	[∞] 42 ~ \	0.00		9 ′ 1.	.945
S		₹ 500 €	20.QQ	1	1.	906
ď	3 4 V	100	~ < O O O O	1 🔊	1.	.676

Table 9.1.3-7: Table

Substance		Fosetyl-Al	Phosphonic acid
Days after m	azimum 🗸	TWAsoil	[mg/kg]
Initia 💍	0	,O* -	-
		0.154	2.164
Short-term	√ 2 √ 2 √ 2 √ 3 √ 4 √ 4 √ 5 √ 6 √ 7 √ 7 √ 7 ✓ 7	0.077	2.161
	40	0.038	2.156
	7 "	0.022	2.148
1	14	0.011	2.128
T on on them	21	0.007	2.109
Longsterm	28	0.005	2.091
7	42	0.004	2.054
	50	0.003	2.034
	100	0.002	1.911

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As requested by the RMS France, new PEC_{soil} calculations were performed using the input parameters as provided by ANSES (see Table 9.1.3-9).

Report:

Title:

Report No.: Document No.:

Guideline(s): Guideline deviation(s): **GLP/GEP:**

Methods and Materials:

KCP 9.1.3/02 ; 2016; M-563138-01-1
Fosetyl-Al (FEA) and metabolite: PECsoil EUR - Use in pome fruit and grapes in Europe
EnSa-16-0659 v1
M-563138-01-1
none
none
to the contraction of t In the present study, predicted environmental concentrations in soil (PEC_{soil}) of the active substance fosetyl-aluminium (fosetyl-Al) and its major soil metabolite phosphonic acid were calculated based on a first tier approach using a Microsoft® Excel spreadsfeet.

The use of fosetyl-Al in grapes was assessed according to Good Agricultural Practice (GAB) under European cropping conditions. Detailed application data used for simulation of PEC in Table 9.1.3-8.

Table 9.1.3- 8: Application pattern used for PECsil calculations of fosecol

Individual Crop	FOCUS crop used for Season Interception Stage Interception g a.s./ba days % % % % % % % % %	Amount reaching the soil per pplication g a.s./ha
Grapes	Vines 3 > 2000 3 10 3 × 60 15-80	3 × 800.00

On 2016-07-27 the RMS France requested additional PEC falculations during the approval renewal process of the active substance fosetyl-Al. Amalgamated data from three applicants should be used for fosetyl-Al and its metabolite. The input parameters proposed by ANSES are summarised in Γable 9.1.3- 9.

List of the main pacameters as proposed by RMS for the risk assessment Table 9,**1**:32 9:

Parameter		y y Imput	Remarks
w w		Fosety I-Al Phosphonic acid	(Concerning phosphonic acid parameters)
DT ₅₀ soil (days)			Maximum estimated DT ₅₀ for phosphonic acid was > 1000 days. 1000 days is taken as a worst-case reasonable assumption ^{a)} .
wayiiiaiii occuire	ence in soury %)	-	
a) W.; 201	.5; M-53 2% 41-01-æ; B	BCS; please re@ to Document MCA	Section 7, chapter CA 7.1.2.1.2

Remark norifier: ANSES proposes value of 1000 days as worst case non-normalised DT₅₀ for calculation of PC in Soil including accumulation. BCS used originally the worst case DT50 of 264 days for the exposure assessment together with a worst case assumption of 100% formation, which is still deemed more appropriate by BCS.

Despite this point, the AEC calculations were carried out with the input parameters proposed by ANŠES.Õ

Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium + Fluopicolide WG 71.11

Findings:

The maximum PEC_{soil} values for fosetyl-Al and its metabolite phosphonic acid are summarized in Table 9.1.3- 10. The accumulation potential of fosetyl-Al and its metabolite phosphonic acid after long term use was also assessed. The results are presented in Table 9.1.3- 11. Detailed PEC_{soil} and TwA_{soil} values for the individual uses are listed in Table 9.1.3- 12 and Table 9.1.3- 13.

Table 9.1.3-10: Maximum PEC_{soil} of fosetyl-Al and its metabolite for the uses assessed

T T	Fosetyl-Al	Phosphonic	c acid
Use pattern	PEC _{soil}	[mg/kg]	
Grapes, 3×2000 g a.s./ha	1 ,067	2.207	4

Table 9.1.3-11: PEC_{soil} of fosetyl-Al and its metabolite for the uses assessed, considering accumulation mixing depth of 5 cm for plateau calculation

	Ĉ		osety [-Al	P	hosphoni	acid
Use Pattern	PEC	````\ ```\	[mg/kg]	Q _1	mg(kg	
Grapes, 3×2000 g a.s./ha	plateau , Jotal &	Y L	70.001 1.067		\$ 668 \$ 9.875	

Table 9.1.3- 12: PEC_{soil} of foset O-Al and its metabolite for the use in grapes (3×2000 g a.s./ha, 3×60% interception, 10 days app. interval)

.~	° ()	•	97 j	1			(C) ²
Substance	() S	F	osetyl-	Al s	Phos	phonic ¿	gcid
Days after m	Aximum		P	PEC _{soil}	[mg/kg)]&
Initial 🐎	<u></u> 6 0 6	7	¥.067	O ^y	&	2.207	Š
		Ş	0.001	7	0	2.206	, y ,
Short-term			<0.001	W Q	4	2.204	
	& <mark>7</mark>	7	\$0.001 \$0.001	<i>\\</i>		24.497	
	0″ <mark>14</mark> 💖		<0.00	7 4 0	<i>§</i> .	2.186	
	<u>2,1</u>		<0.001	(P)	. 0	2.176	
Long-term	\$\frac{\pi_8}{42} \text{\tint{\text{\tin}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tex{\tex		∑0.00\$ ≥0.001	Ţ.		2.165 2.144	
	± 500°		<0.001	, A	7	2.132	
) 100°	Ø .	< 000001	8		2.060	

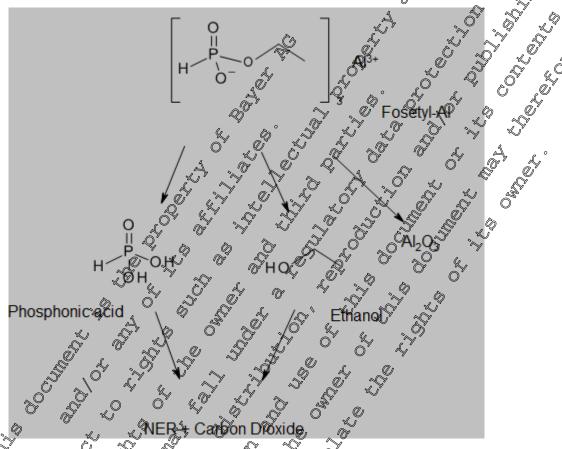
Table 9.1.3-13 Ty/A_{soil} of fosety. Al and its metabolite for the use in grapes (3×2000 g a.s./ha, 3×60% interception, 10 days app. interval)

	Substance		Fosetyl-Al	Phosphonic acid
~ W	Days after m	azimum V	TWAsoil	[mg/kg]
, A	Initiat 💍 💍	" <mark>U</mark> " j	,O`	
a v		S o	[♥] 0.154	2.207
	Short-term	1 3 2 Y	0.077	<mark>2.206</mark>
			0.038	2.204
			0.022	2.202
	1	<mark>14</mark>	0.011	2.197
		<mark>21</mark>	0.007	2.191
	Longaterm	<mark>28</mark>	0.005	2.186
A CA	-	<mark>42</mark>	0.004	2.176
		<mark>50</mark>	0.003	2.170
		100	0.002	2.133

CP 9.2 Fate and behaviour in water and sediment

The proposed degradation pathway of fosetyl-aluminium (fosetyl-Al) in water and sediment is shown in Figure 9.2-1.

Figure 9.2-1: Proposed degradation pathway of fosetyl-Al in water and sediment



For further information on the fate and behavior in water and sediment please refer to Document MCA, Section 7.2

CP 9.2.1 Aerobic mineralisation in surface water

For information on aerobic mineralisation in surface water studies please refer to Document MCA, Section 7.2.2.2.

CP 9.2.2 Water/sediment study

For information on water/sediment studies please refer to Document MCA, Section 7.2.2.3.

CP 9.23 Pradiated water/sediment study

For information on Gradiated water/sediment studies please refer to Document MCA, Section 7.2.2.4.

CP 9.2.4 Estimation of concentrations in groundwater

New calculations were performed, to reflect findings from new studies presented in Document MOA, Section 7, Fate and behavior in the environment. In addition these calculations consider the most recent guidance documents for exposure calculations.

Calculations of predicted environmental concentrations in groundwater (PEC, are presented below.

Endpoints for PECgw

Table 9.2.4-1: Modelling input parameters for fosetyl-aduminium (fosetyl-Al) and its metabolite

Endpoint	Fosetyl-Al and metabolite Q
	Value used for modelling V
Fosetyl-Al	
Molar mass [g/mol]	% 5° 354 14° 0° 5° 5° 5° 5°
Aqueous solubility [mg/L]	\$354.84 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Vapour pressure [Pa]	
DT ₅₀ soil [days]	
K _{oc} [L/kg]	0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05
K _{om} [L/kg]	
1/n	2
Phosphonic acid	
Molar mass [g/mol]	
Molar mass [g/mol] Aqueous solubility [mg/L]	110@20°6
Vapour pressure [Pa]	
DT ₅₀ soil [days]	83.8
V [1/kg]	
K_{oc} [L/kg]	
$ \frac{ K_f[L/kg] }{1/n} $	1.0

PEC_{gw} modelling approach

The predicted invironmental concentrations in groundwater (PEC_{gw}) for the active substance fosetyl-aluminium were calculated using the simulation models PEARL, PELMO and MACRO following the recommendations of the FOCUS working group on groundwater scenarios.

The learning calculations were run over 26 years, as proposed for pesticides which may be applied every year. The simulation length increases to 46 and 66 years for pesticides which are applied only every second and third year, respectively. The first six years are a 'warm up' period; only the last 20 years were considered for the assessment of the learning potential. The 80th percentile of the average annual groundwater concentrations in the percolate at 1 m depth under a treated plantation were evaluated and were taken as the relevant PEC gw alues. In respect to the assessment of a potential groundwater contamination this shallow depth reflects a worst case. The effective long-term groundwater concentrations will be even lower due to dilution in the groundwater layer.

According to FOCUS, the calculations were conducted based on mean soil half-lives, referenced to standard temperature and more turn conditions. Crop interception will reduce the amount of a compound reacting the soil and therefore this has been taken into account depending on the growth stage at application. The interception rates follow the FOCUS recommendations (see Table 9.2.4-2).

Table 9.2. FOCUS groundwater crop interception values

Crop &			Crop stage		
			Interception [%]		
BB@H 🗬	BBCH 0-9	BBCH 11-13	BBCH 14-19	BBCH 53-69	BBCH 71-89
Vines 💍	without leaves 40	first leaves 50	leaf development 60	flowering 60	ripening 75

Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium + Fluopicolide WG 71.11

Derivation of kinetic modelling input values is presented in Document MCA Section 7.1.2, a summary of modelling input parameters is given in the report KCP 9.2.4.1/01.

CP 9.2.4.1 Calculation of concentrations in groundwater

Predicted environmental concentrations in groundwater (PEC_{gw}) of fosetyl-aluminum and its major degradation product

For fosetyl-aluminium, the major degradation product phosphonic-acid was considered.

Report: KCP 9.2.4.1/01

Title: Fosetyl-Al (FEA) and metabolite: PECgw FOCUS PEARL, PELMO, MACRO ROR -

Use in pome fruits and grapes in Qurope

Report No.: EnSa-15-0553 Document No.: M-532542-01-1

Guideline(s): EU Commission, 2000, Guidance Document on Persistence in Soil (Working

Document), 9188 VI/97 rev. 8; FOCUS 1997, Soil persistence models and EU registration; FOCUS 2014: Generic Guidance for Tier 1 FOCUS Goundwater

Assessments Version 2.2

Guideline deviation(s): none GLP/GEP: no

Methods and Materials:

Predicted environmental concentrations of the active substance fosetyl-algorinium (fosetyl-Al) and its major soil degradation product in ground ater recharge (PEC gw) were calculated for the use in Europe, using the simulation models FOCUS PEARL 1.4.4 (Deistra et al. 2001), FOCUS PELMO 5.5.3 (Jene 1998; Fein 1995, 1999, 2011) and FOCUS MACRO 5.5.4 (Jarvis, 1994, Jarvis and Larsbo, 2012). PEC gw 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 (2009, 2014).

The use of fosetyl-Al in grapes was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Detailed application data used for simulation of PEC_{gw} were compiled in Table 9.2.4.1-1

Table 9.2.4.1-1; Application pattern used for PEC calculations of fosetyl-Al

Q			plication		Amount reaching
Individual	FOCUS crops		Plant	BBCH	the soil per
Crop	Interception	Deason V	Interception	Stage	application
. 41		g a.s. fa a ays	[%]		[g a.s./ha]
Grapes	Vivies D	3×2000 10	3 × 60	15-81	3 × 800.000

Further input payameters for PEC_{gw} modelling of fosetyl-Al and its degradation product are summarised in Table 9.2.4.1-25

Table 9.2.4.1-2: Substance specific and model related input parameter for PECgw calculation of fosetyl-Al and its degradation product

Parameter	Unit	Fosetyl-Al	Phosphonic acid	
Common				
Molar Mass	[g/mol]	354.1	82.2	
Solubility	[mg/L]	110000	110000	
Vapour Pressure	[Pa]	1.00E-07	1.0 0 É-07	
Freundlich Exponent		1.000	₹1.000	
Plant Uptake Factor		0.0	0.0	
Walker Exponent		9 .7	0.7	
PEARL Parameters		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Q , Ø	
Substance Code		FEA C	()	R
DT_{50}	[days]	0.1 Q	83.8 L	
Molar Activ. Energy	[kJ/mol]	65.4	654	l & ů [*]
K _{om}	[mL/g]	。0.0586″	39.1	
K_{f}	[mL/g]	O SO OF OF ORDER	39.1	
PELMO Parameters	, ,			
Substance Code		AS S		
Rate Constant	[]/day]	6.931	•0.900827<	
Q ₁₀	V' ()	2,58 ,0	2.58	
K _{oc}	[mk/g]	© ^ © .1		Č _o
Degradation fraction from	n → 000	73 FEÃ -> H3₽03	5 8 .F	. G
(FOCUS PEARL & MAC	CB(O) (S)			
Degradation rate from	±6 0°	14/19 11 23/20	Substance - 🔏 1 🙎	,
(FOCUS PELM)		0.0082710 A105 <	BR/CO2	

Application dates for the simulation runs were defined following the crop event dates of the respective crop and scenario (see Table 97.4.1.2) as given by FOCUS (2009). Crop interception was taken into account according to the BBOH growth stage, as accommended by FOCUS (2014).

Table 9.2.4.1-3: First application dates and related information for fosetyl-Al as used for the simulation runs; offset is relevant only for relative application dates, two sets of data are provided for crops with two seasons

or crops with two seasons	or remarks application date	o .
Individual cron	Granes	
Repeat Interval for App.	Eveny Veen	
Events	Every Year	
Application Technique	Spray	
Absolute / Relative to	Absolute	
Sagnaria	1st App. Date @	
Scenario	Offset	
	02 May (122) 24 May (144) 24 May (149) (149)	
	02 May (122) (110) (110) (110) (102) (102)	
	Individual crop Repeat Interval for App. Events Application Technique Absolute / Relative to Scenario	Ins; offset is relevant only for relative application date or crops with two seasons Individual crop Grapes Repeat Interval for App. Events Application Technique Spray Absolute / Relative to Absolute Scenario Junian day Offset 02 May (122) 24 May (122) 24 May (122) 24 May (122) 20 Apr (110) 20 Apr (110) 12 Apr (102)

Document MCP - Section 9: Fate and behaviour in the environment Fosetyl-aluminium + Fluopicolide WG 71.11

Findings:

PEC_{gw} were evaluated as the 80th percentile of the mean annual leachate concentration at 1 m soil depth. PEC_{gw} values for fosetyl-Al and its metabolite are given in the following tables.

Grapes, 3×2000 g a.s./ha

apes, 3×2000 FOCUS PEARL PECgw results of fosetyl-Al and its metabolite in μg/L (Grapes g a.s./ha, 3×60% interception, 10 d app. interval) Table 9.2.4.1- 4:

Scenario	Fosetyl-A	Phosphonicacid
	<0.001 <0.001 <0.001	<0.001 - 0.001 - 0.004
	₹0.001 ° ₹<0.00€ ₹0.00€	<0.001 <0.001 <0.001
	©.001 ©.001	0.001

Table 9.2.4.1-5:

FOCUS PELMO PECgw	esults of løsetyl-M and its metabolit	e i μg/L Grapes, 3×2000
g a.s./ha, 3×60% intercep	jon, 10 d'app. intervaly	F F 4
Scenario &	cosults of fosetyl-Af and is metabolit ion, 10 d app intervall osetyl-Af phosphonic acid 0.001 0.001 0.001 0.001	
	© .001 © .001 C .001	
	\$\int <0.00\rm \qquad \qqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqq	
	© <0.001 © 0.001 © 0.001	
	0.001 0.001 0.001 0.0001 0.0001	4
	<0.001	

FOCUS MACRO PEC wresults of fosetyl-Al and its Interabolite in µg/L (Grapes, 3×2000 Table 9.2.4.1- 6 راهم, 3×60% interdeption 10 d app. integval) رواهم

J	Scepario (Føsetyl-Al	P	nosphonic acid
9	ł	©<0.00°	ð	< 0.001

Conclusion of the active substance fosetyl-Al and its metabolite in accordance with the use pattern for the current formulation.

Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium + Fluopicolide WG 71.11

As requested by the RMS France, new PEC_{gw} calculations were performed using the input parameters as provided by ANSES (see Table 9.2.4.1-8).

KCP 9.2.4.1/02 : 2016: M-563145-01-1 Report:

Title: Fosetyl-Al (FEA) and metabolite: PECgw FOCUS PEARL, PELMO, MAG

Use in pome fruit and grapes in Europe

Report No.: EnSa-16-0660 v1 Document No.: M-563145-01-1

Guideline(s): none Guideline deviation(s): none **GLP/GEP:**

Methods and Materials:

MACRO EUR - F Predicted environmental concentrations of the active substance foseign-aluminium (fosety) Al) and its major soil metabolite phosphonic acid in groundwater recharge (PECgw) were calculated for the use FOCUS DEARD 4.4.4 (Leistra et al. 2001). using the simulation, models Europe. FOCUS PELMO 5.5.3 (Jene 1998; Klein 1995, 1999, 2011), and FOCUS MACRO 5.5.4 (Larvis 1994; Jarvis and Larsbo 2012). PECgw were evaluated as the 80th perceptile of the mean annual leachate concentration at 1 m soil depth. Model parameters and scenarios consisting of Ceather soil, and crop data were used as proposed by FOCIPS (2009, 2012b). Q,"

The use of fosetyl-Al in grapes was assessed according to Good Agricultural Practice (GAP) under European cropping conditions Detailed application data used for imulation of PEC were compiled in Table 9.2.4.1-7. 0

Table 9.2.4.1-7: Application pattern used for PEC calculations of fosetyl-Al

Individual Crop	CUS crop Sused For Interception	Rate per Season ga.s./har	Interval	eation of	BBCH Stage	Amount reaching the soil per application [g a.s./ha]
Grapes Q	Vines	3 × 2000	10	3 × 60	15-81	3 × 800.000
				*, O,		

On 2016-07-27 the RMS France toquested additional PEC calculations during the approval renewal process of the active substance to setyl-At. Amalgamated data from three applicants should be fosetyl-Al and its metabolite. The input parameters proposed by ANSES are summarised in Table 9.2.4.1-8: process of the active substance for etyl-M. Amalgamated data from three applicants should be used for

Table 9.2.4.1-8: List of the main parameters as proposed by RMS for the risk assessment

Parameter		<mark>Input</mark>	Remarks
	Fosetyl-Al	Phosphonic acid	(Concerning phosphonic acid parameters)
DT ₅₀ soil (days)	0.1	133.7	Geometric mean of all acceptable values a),b),c)
Formation fraction in soil (-)	ŀ	1	7 J
K _{foc} (L/kg)	0.1	-	
K _f (L/kg)		15.9 f)	Geometric mean of all acceptable values delived from batch studies (1)
<mark>1/n</mark>	<u>I</u>	0.69	Arithmetic mean of all acceptable values derived from batch studies do Conservative assumption
Crop uptake factor	0		Conservative assumption
b) · 1999· M-	Sosetyl-Al Task Biosciences I Fosetyl-Al Ta d Fremallich e	BGS; please reference k Force Europe S.A exponent should be	Document MeA, Section 7, chapter CA 7.1.2.1.2 Document MeA, Section 7, chapter of the chapter o

Remark notifier: ANSES proposes to use 133.7 days as geometric mean DT3 of all acceptable values for calculation of PEC in groundwater. The value of 133.7 days is presideably based on using 1000 days for the soil based on the sew phase of the DFOP model (1222); 2015; M-532341-01-1), and 32 days for the LUTA soil submitted by the FAIRITF task force (1222); 2015; S15-00506) based on the HS model. Since both soils show a singler pattern, the HS model is more appropriate for soil in this light, instead of a very conservative estimation of 1000 days based on only the few last data points, which was deemed unrehable by BCS.

Despite this point, the PEC calculations were carried out with the input parameters proposed by ANSES.

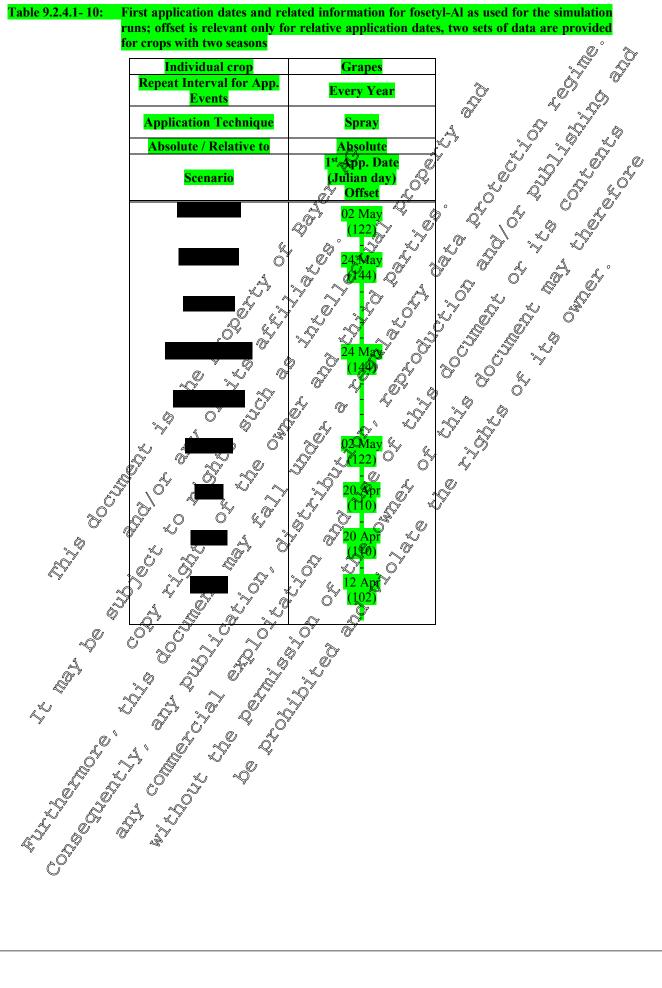
Further input parameters for REC_{EW} modelling of fosety Al and its metabolite are summarised in Table 9.2.4.1.3

Table 9.2.4.1- 9: Compound input parameters for fosetyl-Al and its metabolite

Table 7.2.4.1-7. Compound input p				1
Parameter	Unit	Fosetyl-Al	246.0 a 119000 20 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
Common				ô
Molar mass	(g/mol)	354.14	246.0 a)	Ş
Solubility	(mg/L)	110000	110000 Ó j	O
at temp.	(°C)	<mark>20</mark>	20 0	
Vapour pressure	(Pa)	1.00E-07	10 00E-07	
at temp.	(°C)	<mark>25</mark>	<u> 25</u>	Ò
Freundlich exponent	(-)	1.000	10.690	J [*]
Plant uptake factor	(-)	0.0 S		_@
Walker exponent	(-)	0.7	Q <mark>0.7</mark> V Y Y	2
PEARL parameters				
Substance code	(-)	AFEA Q	Y 6 H3RO3 (C C	r i
DT_{50}	(days) (kJ/mol)	0.1 ~		
Molar activ. energy	(kJ/mol)	65.4	25.4 2 2 2 2 1	
Kom		0.058 × ×		
Kf	(mL/g)			
PELMO parameters	(*//day) (*//day)		132.7 65.4 15.90 0.0 0.7 0.0 0.7 0.0 0.7 0.0 0.7 0.0 0.7 0.0 0.7 0.7	
Substance code	///day	AS _y		
Rate constant		693147	0.00598 2 0	
Q10		\$2.58 \\$' \\ \@''		
K _{oc}	, 10, 13	/ <mark>0.1</mark> ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		
MACRO parameters		O OCEA		
Substance code Exponent moisture Exponent temperature		TEAC	W3PO3	
		0.49	00.49	
Exponent temperature		10 0.07 TO	0.0948]
a) 3 × 82.0 g/mol, one mole of fosety PA		1 Pool 1	ACIO A A A A A A A A A A A A A A A A A A A	1
Degradation fraction from → to (-) (FOCUS PEARL)	FEAST H	3 PO 3: 1		
(-) (FOCUS PEARL)		, , , ()		
Degradation rate from to	Active Sm	ostanse -> A1: 6.9		
Degradation fraction from to (-) (FOCUS PEARL) Degradation rate from to (1/day) (FOCUS PEAMO) Conversion factor from to	AI > BR/	(COQ: 0.0051843		
Conversion factor from to	FEAy-> H,	3 P O3: 0.6946405	" J"	
(-) (FOCUS MAYERO) O			(F)	
a) Calculated as $\ln(2)$ ODT50 formation	n traction		V	
b) Calculated as molar mass / molar mass	s predecessor ×	tormation		
		\$ 25 P		

Application dates for the simulation runs were defined following the crop event dates of the respective crop and scenario (see Table 9.251-19) as given by POCUS (2009). Crop interception was taken into account according to the BBCH growth stage, as recommended by FOCUS (2014).

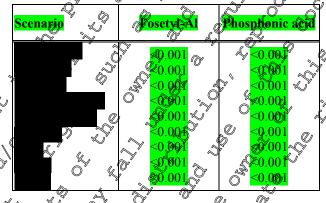
Table 9.2.4.1- 10: First application dates and related information for fosetyl-Al as used for the simulation runs; offset is relevant only for relative application dates, two sets of data are provided



Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium + Fluopicolide WG 71.11

Findings:

	PEC _{gw} values obtained vol. 2.4.1-12 (PELMO), and FOCUS PEARL PEC _{gw} g a.s./ha, 3×60% interce	nd Table 9.2.4.1-1 v results of fosetyl-A	3 (MACRO).	given in Table 9.2.4.1- 11 te in μg/L (Grapes 3 × 2000
	Scenario	Fosetyl-Al	Phosphonic acid	8 2 Q
		<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <0.004 <p< th=""><th></th><th>te in µg/L (Grapes 3×2000)</th></p<>		te in µg/L (Grapes 3×2000)
Table 9.2.4.1- 12:	g a.s./ha, 3×60% interco	w results of fosetyl- eption, 10 d appipi	M and its metaboli terval	ite id/µg/L4&rapes, 3×2000
	Scenarjo	0.001 0.001	Phosphonic acid	ite i@ jug/L Grapes 3×2000



FOCUS MACRO PECgw results of fosety Al and its metabolite in μg/L (Grapes, 3×2000 Table 9.**2**4×1- 13: gas./ha,3/60% intercention, 10/d app. interval)

	26	\sim	. 0	SX 1			7	
	V		·~		0	~		
.1	Scen	aggo	W	≪ Fo	setvl-Al	Ċ	Phosphon	ic acid
)	×	P /			Ş	Ţ		
ν) _%	0.001	0	< 0.00	01
		//	- <i>y</i>	35 6	"2 ".			

No additional field tests:

No additional field tests:

No additional field tests:

No additional field studies were performed due to low PECgw values calculated (see Section CP 9.2.4.1).

CP 9.2.5 Estimation of concentrations in surface water and sediment

New calculations were performed, to reflect findings from new studies presented in Document MOA, Section 7, Fate and behavior in the environment. In addition these calculations consider the most recent guidance documents for exposure calculations.

Calculations of predicted environmental concentrations in surface water PEC_{sw}) and sediment (PEC_{sed}) are presented below.

Endpoints for PECsw

Table 9.2.5-1: Modelling input parameters for fosefyl-aluminium (fosetyl-Al) and its metabolite

Endpoint	Fosetyl-Al and metabolite Value used for modelling 3544
	Value used for modelling
Fosetyl-Al	3544 0 °C 0 °C 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Molecular weight [g/mol]	\$\tag{\text{354}}\text{\$\exitt{\$\text{\$\exittitt{\$\text{\$\exittitt{\$\text{\$\exittit{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\exititit{\$\text{\$\exitit{\$\text{\$\texi\\$}}}}}\$\text{\$\text{\$\text{\$\text{\$\tex
Aqueous solubility [g/L]	A 10 at 20 °C
Vapour pressure [Pa]	le " ~ " ~ " O 1 0 × t0 7 (25 %) % 1
K _{oc} [L/kg]	
K _{om} [L/kg]	
1/n DT soil [days]	
1 17150 SOII 10avs1	
DT ₅₀ total system [days]	
DT ₅₀ water [days]	
DT ₅₀ sediment [days]	1.5 01 1000 1000 1000 0
Maximum occurrence in water/sediment	k &
Phosphonic acid	
Molecular weight [g/mol]	246 (Step 1, 2), 82 (Step 3, 4)
Aqueous solubility (vL)	*
Vanour pressure Pal	1.00°10-7 (\$3°°C)
DT ₅₀ soil [days]	₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩ ₩
K _d [L/kg]	9 .1
K _d [L/kg]	782 (assumption: 5% OC in soil) a)
K _{om} [L/kg)	43/4 Cassumption: 9% OM in soil) b)
Maximum occurrence in soil	100%
DT ₅₀ total system days DT ₅₀ water [days]	100%
DT ₅₀ water [days]	102
DT ₅₀ total system days DT ₅₀ water [days]	102
Maximum occurrence in water/sectionent	102 102 102 100%
,	0 4

a) Using the K_d parameter instead of K_{oc} requires the following changes in the FOCUS surface water calculations: a pseudo-K_{oc} of 782 mL/g has been derived from the effective K_d of 39.1 mL/g, assuming an OC content of 5% (FOCUS Steps/h-2).

Occontent of 5% (FOCUS Steps) 2).

b) Using the K_d parameter instead of K_k requires the following changes in the FOCUS surface water calculations: A pseudo-K_{om} of 489 L/kg has been derived from the effective K_d of 44 L/kg, assuming an OM content of 9% (FOCUS TOUSWA).

PEC_{sw} modelling approach

Calculation of PEC values for the active substance according to FOCUS

FOCUS_{sw} is a four step tiered approach:

Step 1: All inputs are considered as a single loading to the water body and a worst-case PEC_{sw} and PEC_{sed} is calculated (most conservative step).

Step 2: Individual loadings into the water body from different entry routes according to the number of applications are considered. Scenarios are also considered for Northern and Southern Europe separately but no specific crop scenarios are defined.

Step 3: An exposure assessment using realistic worst-case scenarios performed. The scenarios are representative for agricultural conditions in Europe and consider weather, soil crop and different water-bodies. Simulations use the models PRZM, MACRO and TOXSWA.

Step 4: PEC values are refined by considering mitigation measures according to the FOCI'S Landscape and Mitigation Factors, i.e. drift reduction or vegetated filter strips, which intercept conoff water and eroded sediment prior to entry into surface water.

Derivation of kinetic modelling input values Is presented in Document MCA, Section 70.2 a summary of modelling input parameters is given in the report KCP 9.2.5/9.

Predicted environmental concentrations in surface water PEC(s) and in sediment (PEC_{sed}) of fosetyl-aluminium and its major degradation product

For fosetyl-aluminium, the major degradation product phosphonic acid was considered.

Title: Fose(F)-Al (FEA) and metabolite: RECsw,sed FOCOS EUR. Use in pome fruits,

pome fruits grapes (early), grapes (late), grapes (early) and grapes (late) in Europe

Report No.: KASa-15-0554

Document No.: M-532543-0141

Guideline(s): FOCUS 2009, SANÇO/10422/2005v. 2.0 FOCUS 2015, Generic guidance for

FOCUS son face water Scenarios Persion 1.4, May 2015

Guideline deviation(s): Shone GLP/GJPR.

Methods and Materials:

Predicted environmental concentrations of the active substance fosetyl-aluminium (fosetyl-Al) and its metabolite phosphonic acid in surface water (PEC) and rediment (PEC_{sed}) were calculated for the use in Europe, employing the piered FOCUS 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 in those calculations.

The use of fosetyl-All in grapes was associated according to the Good Agricultural Practice (GAP) in Europe. Detailed application parameters are presented in Table 9.2.5-2.

Table 9.2.5- 2: General and FOCUS-specific data on the use pattern of fosetyl-Al in Europe (for FOCUS Step 1&2)

	FOCUS crop			Application		Q °
Individual Crop	used for interception	Rate per season [g a.s./ha]	BBCH stage	Interval [days]	Plant Interception	Season 7
Grapes (early)	vines, late applns (vines / late)	3 × 2000	15-59	10	minimal crop	Mar. May.
Grapes (late)	vines, late applns (vines / late)	3 × 2000	59-81	10	full canopy (60%)	Pune - Sep.

For fosetyl-Al and its metabolite phosphonic acid FOCUS Step 3 and Step 4 values were carculated in addition to FOCUS Step 1 and Step 2 values.

Compound specific input data are summarised below for (see Table 9.2.5-3).

Table 9.2.5- 3: Substance parameter used for fosetyl-Al and its metabolice

Parameter	Whit S	Parent Single Pa	Metabolite &
Substance Company code	Ď	Kosetyl-A	Phosphonic Acid
Company code SWASH code	o a	LS 74783	AB 0540099
SWASH code		FEA V V V	H3PO3 [©]
General Molar mass	g/mcV mælL	\$54.14 11000 0 (20 %C)	. Ö
Molar mass	g/mol	\$54.14 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	82 \$\frac{1}{2}\text{0000 (20 °C)}
Water solubility (temp.)		/1100@(20 %C)	
Water solubility (temp.) Vapour pressure (temp.)	Pa 💸	1E ₇ 07 (25 °C)	¥É-07 (25 °C)
Crop processes	P S	50 5 6 5	
Coefficient for uptake by plant (TSSF)] - 🥎 🦠		0
Wash-off factor	17ma (50 5 5 5	50
	mL/g mL/g	0.06 & 0	
Koc V V	mL/g		748.22
K _{OM}	mL@	0.06	434
	- 5		1
Transformation DT ₅₀ in soil temperature	days °C log(cm)		
DT ₅₀ in soil	days		83.8
temperature & A	°CC ~	20	20
pF	10g(cm)	20 0	2
DT ₅₀ in soil temperature pF formation fraction in soil DT ₅₀ in water temperature	days		3
DT ₅₀ in water	days		102
temperative of O'		<i>∮</i> 20	20
formation fraction in water			3
DT ₅₀ in sediment	days S	1000	102
temperature	°C 🍣	20	20
formation fraction in sediment	- 4		3
DT ₅₀ on canopy	days	10	10
pF 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 Exponent for the effect of moisture PRZM and JOXSWA (Walker exp.) MACRO calibrated value) Effect of temperature	7		
PRZM and TOXSWA (Walker exp.)	-	0.7	0.7
MACROgralibrated value)	-	0.49	0.49
TOXSWA (m@ar activation energy)	kJ/mol	65.4	65.4
MACRO (effect of temperature)	1/K	0.0948	0.0948
$PRZM \bigcirc \bigcirc$	_	2.58	2.58

In FOCUS Step 3, the application date for each scenario is determined by the Pesticide Application Timer (PAT), which is part of the FOCUS SW Scenarios. The user may only define an application time window. The actual application date is then set by the PAT in such a way that there are at least 10 mm of rainfall in the first 10 days after application, and at the same time less than 2 mm of rainfall in the day period around the date of application. If no such date can be found within the application time window, the above rules are step-wise relaxed. Information of application dates can be found in Table 9.2.5-4.

Table 9.2.5-4: Application dates of fosetyl-Al for the FOCUS Step 3 calculations for the use in graphe (early)

	(carry)		***		<u> </u>		
PMT Name DGR / PMT N Parameter	umber		PMT01 SPMT II				
FOCUS model	crop (crop gro	up)	Vines, Late Appln (vines Vlate)				
Use pattern (si	ngle/seasonal a	ppln. rate)	302.0 kg/a.s./ha/10d	l in (2.0/00kg a.s.)na)			
Appl. Method	(Run off CAM,	depth inc.)	Air Bæst (2 Appln	feliar linear, 4 cm)			
PAT start dat (relative	e to crop event o	r absolute)	absolute V				
PAT window	range		53 days - 95 days, sc	epario specific (min =			
Drainage Scenarios	PAT Start, Interval (Julian Day)	Apprication © Date	Runoff Schrarios	PATO Start, Interval ((Julian Day)	Application Date		
D6	24-Feb, 62	27 Feb	R10	03-May 33 (125)	08 May		
Ditch	(55)		Pondotream		31 May 12 Jun		
				20 A-#4 05			
			Stream S	20-A y 0, 93	22 Apr 07 May		
					20 May		
8							
			\$\text{R3} \tag{8}	02-May, 84	18 May		
K.			Stream	(122)	01 Jun		
					16 Jun		
~			R4	13-Apr, 91	04 May		
			Stream	(103)	20 May 30 May		
			Runoff Scorarios Runoff Scorarios Ri Pond/Stream R3 Stream R4 Stream				

Table 9.2.5- 5: Application dates of fosetyl-Al for the FOCUS Step 3 calculations for the use in grape (late)

Findings:

FOCUS Step 1 and 2:
The maximum PEC values for FOCUS Step 1 and 2 are given in the tables below for fosetyl-Aland its major degradation product.

Summary of the maximum PECsw and PECsed values fosetyl-Ar (FOCUS Steps 1 **Table 9.2.5- 6:**

			4	
		PEC	TWA 💍	TWA O
		, w max	7 days 💯	21 days
Usage	Scenario 3	SW Sed	SW Sed	SW Sed
		[µg/L] [µg/kg]	Jag/L]/Jug/kg	[µg/L] [µg/kg]
grapes (early) DGR I / PMT II	Step 1	∘720.1 ⊅ 0.6 6 7	3570 0.354	1,47.4 0,146
	Step 2		~ V X V	· ·
Vines, late applns	l N-EU Multi ≪√	51000 00027	3.39 0.016	10.47 0.007°
3×2000g a.s./ha, 10d int.	S-EF Multi	51.00 7.0274	25.390 0.016	10.49 0.007
min crop cover	NÆU Single ^	√53.52° 0.02 8	26,64 0,616	10.99
Spring (Mar May)	SEU Single	′ 53°. 52 ′ 0,0 2 8	26 .64 5 .016	3 0.99 3 0.007
grapes (late) DGR I / PMT III	Step 1 , S	72 0.1 0 667	\$57.3 0.354	147 0.146
	Step 2			
Vines, late applns	/ N/24FIIMnô∂ani ((51.00 0.02	25.39 0.016 25.39 0.016	10.47 0.007
3×2000g a.s./ha, 10d int.	SEU Multi	51,90 0.027	25.39 0.016	10.47 0.007
3×2000g a.s./ha, 10d int. full canopy	N-ENCSingle	53.52 6.028	26.64 0.016 [©]	10.99 0.007
Summer (Jun Sep.)	S-E Single	3.52 0.028	26.64 0.026	10.99 0.007

Summary of the maximum PEC and PEC sed values phosphono acid (FOCUS Steps 1-Table 9.2.5- 7:

Usage Scenario Scenario		Phosphonic acid PEC TWA T name 7 days 21				
	P	E ©	V T	WA	T	WA
	D n		7 (lays	21	days
Usage Scenario	SW	See	SW	Sed	SW	Sed
Usage Scenario Scenario	[ng/L]	[µg/kg]	$[\mu g/L]$	$[\mu g/kg]$	[µg/L]	[µg/kg]
grapes (early) DOR I / PMT II Step Step 2 Vines, late applns Step 2 Vines, late applns Step 2 N-EU Multi S-EU Multi Spring (Mary - May) SEU Single	1472_4	10991	1386	10776	1320	10302
Vines, late applns Step 2 N-EU Multi						
Vines, late applns & A EU Multi	1244	897.8	113.5	876.8	107.9	836.7
3×2000g a.s./ha 10d into S-EU Multi Single	107.2	1464	184.7	1430	175.8	1364
min crop coveQ Q N-By Singthe	74.00	342.0	43.27	334.0	41.13	318.8
Vines, late applns 3×2000g a.s./ha_lod into S-EU Multi S-EU Multi S-EU Multi S-EU Multi S-EU Multi S-EU Single Spring (Mary - May)	74.00	546.5	68.97	533.7	65.66	509.3
grapes (later DCPA / PMPIII Ren 1 V	1472	10991	1386	10776	1320	10302
Step 2 Step 2						
Vines, Late applns V No No No Multi	100.1	709.2	89.79	692.6	85.30	660.9
3×2000g a.s./ha, 10d int. S-EU Molti	124.4	897.8	113.5	876.8	107.9	836.7
full canopy ON-EUS ingle	47.68	273.9	34.70	267.5	32.95	255.2
Summer (Jun. Sep.) A S-EU Single	47.68	342.0	43.27	334.0	41.13	318.8
Vines late applns 3×2000g a.s./ha, 10d int. full canopy Summer (Jun. – Sep.) Step 1 N EU Multi S EU Morti N-EU Single S-EU Single						

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FOCUS Step 3 and 4:

The maximum PEC values for FOCUS Step 3 and 4 are given in the tables below for fosetyl-Al and its metabolite phosphonic acid considering the application in grapes early and late. Single and multiple application PEC_{sw} values are presented for all relevant scenarios in Step 3 and 4. PEC_{sed} values are only presented for FOCUS Step 3. For other PEC values please refer to the report.

Grapes, early

PECsw and PECsed values of fosetyl-Al (3\omega.0 kg a.s./ha, 40d int.) in grapes (early) for all calculated scenarios according to FOCOS sw Step 3 Table 9.2.5- 8:

			Fosetx	PÅ1				
		Entry route	© PEO	Capax J	TWA	7 days	O' Q	21 ďays
	Scenario	Spray drift Runoff	SWO	Seed .	QSW.	Sed	ŚW &	Sed Sed
		Drainage 🔌	″ [μg/]Ł]	[µg/kg]	, [μg/ Ϳ ϶],	[µg/kg]	ي[μg/L] [©]	[µg/kg]
	D6 (Ditch)	S	29 ,250	@2.464 6 /	7.7920	, j./6790-S	3.2560	2.0 410
	R1 (Pond)		¥.1950	0.2446	27251	0.236	0.5657	0.2035
Multiple	R1 (Stream)		21.4 19	0%6621 ^	0.5898	0.1605	3 164	0.1022
applications	R2 (Stream)	Q'S	28,660	20.6336	0.4132	0.1245	0.275	0.0946
	R3 (Stream)		36 250 g	(\$\) 1.2850 ⁽³⁾	1,5870	3 .44990	1.0380	0.3335
	R4 (Stream) *		30.250 21.050	0.5425	6 4699		03844	0.1024
	D6 (Ditch)		[™] 33. 70 0	1≈3700	\$2.26 90 }	0.50016	0.7814	0.2807
	R1 (Pond), 🕏	O'S	1,2220	0.1678	0.8460	Ø\$1648 «	ر 0.4721	0.1450
Single	R1 (Pond) Q R1 (Stream)	ک الی	I 42% 1.01U €	0.5638	0.4170	√ð.092 9 √	0.1443	0.0513
application	R2 (Stream)		33.140	0.5952	Ø:387 %	0.0862	0.1292	0.0464
	R3 (Staram)	7	35,120	1 4370	1.2710	0.2799	0.4238	0.1513
	R4 (Stream)	SS W	24.700	∂0.5754 [©]	0.4496	D ,1000	0.1788	0.0601

In bold: highest PECsw value

PECsw and PECsed values of phosphoric acid (3×2.0, kg fosetyl-Al/ha, 10d int.) in grapes (early) for all calculated scenarios according to FOCUS SW Step 3

Phosphonic Acid Acid										
	Scenario S		PKC	max	TWA	7 days	TWA 2	1 days		
	Scenaro S		\ .	Sed	SW [µg/L]	Sed [µg/kg]	SW [µg/L]	Sed [µg/kg]		
	D6 (Ditch)		\$2.2590\forall	2.1060	0.9500	1.7480	0.3520	1.2780		
<i></i>	R1 (Pond)			5.3240	1.4970	5.3220	1.4320	5.3020		
Myltiple	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) D6 (Ditch)	Q,	83330	5.8350	0.9767	3.5090	0.3366	2.6070		
applications	R2\(Stream)	<i>@</i> 1	9.6120	8.0980	1.4840	4.8570	0.4987	3.5720		
	(K3 (Stream)	Ç"	Q3.0310	0.8856	0.1883	0.5348	0.1219	0.3969		
	R4 (Stream))	4.7360	13.360	0.8157	10.670	0.2965	8.8540		
	D6 Ditch V	~Q	0.5525	0.3739	0.1587	0.2700	0.1150	0.2504		
, W	Re (Pond)		0.6026	2.1790	0.6006	2.1780	0.5825	2.1700		
Single	R1 (Stream)		2.5510	1.5690	0.2859	0.9228	0.1119	0.6818		
appHeation	Do Ditch C R1 (Stream) R2 (Stream) R3 (Stream)		2.7810	1.9030	0.4292	1.0230	0.1432	0.7015		
	R3 (Stream)		3.1100	0.5235	0.1251	0.2059	0.0418	0.1206		
	R4 (Stream)		3.2350	6.3650	0.7088	4.7590	0.2455	3.8610		

In bold highest PECsw value

Grapes, late

Table 9.2.5- 10: PEC_{sw} and PEC_{sed} values of fosetyl-Al (3×2.0 kg a.s./ha, 10d int.) in grapes (late) for all calculated scenarios according to FOCUS sw Step 3

	Fosetyl-Al							
	Scenario	Entry route Spray drift Runoff Drainage	Sw	max	TWA	Sed	TWA	21/days (*) Sed
	D6 (Ditch)	S	[μg/L]	Jμg/kg] © 5.0100	[μ g/b] 16/820	[μg/kg] 4.6280	12.340	[μ g /kg]
	R1 (Pond)	S	1.181		0.6672	0.1883	0 . 4977 .	0.161%
Multiple	R1 (Stream)	S	21.4000	0.6196	2 0.5794	0,1284	0.3389	0.1054
applns.	R2 (Stream)	S	28 .,770	<i>©</i> 0.6667	0.4344	0,9429	0.434	0∜⊉127
	R3 (Stream)	S	®0.250, ©	1.2750		00.453 <i>6</i>	1.0160	<u>_</u> 0.3466 。
	R4 (Stream)	S 4	21.46	0.7240	@.6245 [©]	0.2032	©#150 <i>₫</i>	∂"Ö.15 9 \$
	D6 (Ditch)	S 🖇	⁹ 34.330	3.8550	19.340	3 4710 ,	7.0310 [©] ر	2.3380
	R1 (Pond)	S O	1.2220	@ð.136 2 √	0.7095	0.1309		9 7072
Single	R1 (Stream)	SQ. (2 5.100	0.7270	6.6798	0.150	0.2573	©.0895
appln.	R2 (Stream)		×33.750°	0× Z I 61 ≥	Ø.509 7 0	0.1.53	£ 1699	0.0609
	R3 (Stream)	l ©S	35,490	1.3260	* 1.7 740	0.\$886	0.5913	0.2103
	R4 (Stream)	S	25 .180 .	(*************************************	0.7979	% .16090	0.2427	0.0867

In bold: highest PECsw value

Table 9.2.5-11: PEC_{sic} and PEC_{sed} values of phosphonic acid (3×2.0 kg foseryl-Al/ha, 10d int.) in grapes (late) for all calculated scenarios according to FQCUS SW Step 3.

			Dhaen (Xn	io Waid	0' *			
			Phosphon	ic Aciu	0	4"		
			I 🔈		4			
		10			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Ş		
			PEC	max	TWA	7 days	TWA 2	21 days
Į (Scenario P		r Ö	Q 0	~ <i>O1</i>	Ĭ		Ĭ
Ď		4	SW.	Sed		Sed	SW	Sed
			[µg/L]	[µg/kg]	Jyzg/L]	[µg/kg]	[µg/L]	[µg/kg]
	$D6 (Di \otimes h) \cdot O$	\ \\	_≫ ¶1.01®″	25.490 %	9.5450	24.520	8.1430	21.400
·	R1 (Pond)		1.5860	% ,9190 <i></i> ♣	1.5780	5.9170	1.5260	5.9040
Multiple	R1 Stream	4 ×	4.2990	©6.48 6 0	0.4822	4.8630	0.2439	4.2560
applns.	R2 (Stream)	, O	3.8780	2.9290	0.5334	1.7290	0.2384	1.3510
	R1 (Pond) R1 (Stream) R2 (Stream) QR3 (Stream)		0 6.7380°	149370	1.6400	12.040	0.7134	10.040
		1 .∩′	⊃. <i>©</i> ∌/∪	<i>®</i> .7820	0.9905	5.8420	0.3313	4.7330
	D6 (Ditch) R1 (Pont)	W.	~9. 7 090	©13.050	8.0970	12.270	3.9780	9.4620
	R1 (Pond)		&Ø.867 0 √	2.7770	0.8624	2.7760	0.8260	2.7700
Single			× 3.8789	6.2890	0.4208	4.7500	0.1871	4.0040
appln.	R2 (Stream)		1.5950	0.9547	0.1737	0.5636	0.0776	0.4402
<i>y</i> .	R3 (Stream)	- Y	A .0710	2.1810	0.3571	1.7850	0.1759	1.4680
	R2 (Stream) R3 (Stream) R4 (Stream)		Q¥.9210	2.3980	0.3240	1.7810	0.1083	1.4350

In bold: higher PECS value

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FOCUS Step 4

FOCUS Step 4 calculations considering different buffer zones in combination with mitigation by drift reducing nozzles (where applicable) were conducted based on the Step 3 results. In the following a summary of PEC values resulting from single and multiple applications for relevant crops are given. for fosetyl-Al and phosphonic acid.

Grapes, early

(3×2.0 kg, a, s./ha, Summary of FOCUS Step 4 PECsw values of fosetyl-A **Table 9.2.5-12:** Entries marked with * result from single applications.

		Fosety	- N		
		PECsw_Lu	ig/L]		
Buffer		Q ^O	Nozzte R	edection Q	
Width &				7 	
Type	Scenario	0% 💍 🛴	50%	J5% S	90%
	D6 (Ditch)	S 20.390 * 5 S) \ \@\0.210\g\	\$ 5.1260 * \$ 00547 *	OS 2.0730
_	R1 (Pond)	S 14190 * S	0.7093 *	(5) 00°547	S 0.1409 *
5m	R1 (Stream)	S 77.930 * S S 24440 * \$	8.9640 * d	X 4.4820	1.7930 *
Spray	R2 (Stream)	S 2.24440 * S 25,590 * S	3 2.070 × 5 2.790	S 6.0350 * 6.2070 * 4	\$\begin{array}{cccccccccccccccccccccccccccccccccccc
drift	R3 (Stream) R4 (Stream)	1 . 8 1 9 1 4	8.9960 *	4980	S 2.3390 *
	D6 (Ditch)	S 7.4100 8	2 2 2 2 10 * 4	S 3.8810	
10m	D6 (Ditch) R1 (Pond) R1 (Stream)	S 0.7811 *	6,3906	S 0.1953 *	S 0.7752 * 0.0781 *
Spray	R1 (Stream)	(S) 6.4940 * S	3.2470		S 0.6494 *
drift &	R2 (Stream)	OŠ \$9.7440 4 S	4.3720 *	\$ 21860 ¢	S 0.8744*
Runoff	R2 (Stream) R3 (Stream)	S 9.268	4.6340 * *	S ≪2.31701**	S 0.9268 *
	R3 (Stream) R4 (Stream) D6 (Ditch)	S, 9 6.5190 * S	4.3720 * 4.340 * 4.340 * 4.358	St. 1.6290 *	S 0.6517 *
	D6 (Ditch)	400430 * S	S \(\sum 2.0410 \)*	© 1.9390 *	S 0.4386 *
15m	R1 (Protein) R1 (Stream) R2 (Stream)	()\$\ \tag{\chi}\tag{\chi}.5290\ \tag{\chi}\tag{\chi}	0.2645 * 4	S 0.1323 * S 0.8821 * 1.1880 *	S 0.0529 *
Spray	R1 (Stream)	S 3.5280 * S	\$ L\$640 *@]	S \$\sqrt{0.8821}*	S 0.3528 *
drift &	R2 Stream	S 3.5280 * S S 4.7510 * S S 5.0350 * S	2.3750	S 1.1880 *	S 0.4751 *
Runoff	R2 (Stream)	S 5.7350 * S		(S) 1.2590 *	S 0.5035 *
*	OK4 (Stream)	C 0 2 (240 * 0C	30 1.7700 * 3 3 3310 * 3	S 0.8852 *	S 0.3541 * S 0.2966 *
20m	D6 (Ditch) R1 (Pond) R1 (Stream)	S 2.6240 * S S 0,2930 * S	S \$310 Fy	S 0.6845 * S 0.0983 *	S 0.2966 * S 0.0393 *
Spray	R1 (Stream)	\$ \ \ \(\tilde{\infty} \) \(5 % 1.13 9 0 *	S 0.5694 *	S 0.0373
drift &	R2 (Stroam) 4	S 3.067,00 S	O 185330 *	S 0.7667 *	S 0.3067 *
	R3 (Stream)	S 3.2500 * S 2.2860 * S			S 0.3250 *
	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	S 3.2500 * S 2.2860 * S	S 01.1430 *	S 0.5714 *	S 0.2286 *
S, R and D	denote main entra Poute	a spravodrift, remoff o	orainage, respe	ectively.	
				•	
. &					
		y Q 34			
	A A				
0		9			
	R3 (Stream) R4(Stream) denote main entry oute				
,	7				
Ũ					

Table 9.2.5-13: Summary of FOCUS Step 4 PEC_{sed} values of Fosetyl-Al (3×2.0 kg a.s./ha, 10d int.); Entries marked with * result from single applications.

	Fosetyl-Al PEC _{sed} [µg/kg]								
Buffer		P	LC _{sec}		Reduction &				
Width & Type	Scenario	0%		50%	75%	90%			
, I	D6 (Ditch)	1.486	0	0.7502	0.3824	0.817			
	R1 (Pond)	0.284		© .1424	0.0713	20. 0286			
5m	R1 (Stream)	0.480		0.2406	0.1206	\$\text{\$\text{\$\gamma\$0.0486}\$}			
Spray	R2 (Stream)	0.459		0.2299	0.1150	1 .0 0.0460 43			
drift	R3 (Stream)	0.932		0.4663	0.2332	00933			
	R4 (Stream)	0.419		0.20%	0.14039	0.0581			
	D6 (Ditch)	0.540		0.27 76	Q1461	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
10m	R1 (Pond)	0.155	24/	0.0776	0.0388	0.0136			
Spray	R1 (Stream)	0.171	9	0.0976	[Ia(, (a=1)) /4 o			
drift &	R2 (Stream)	0.164	4	0° ↓ €0.0822 %		1/05*			
Runoff	R3 (Stream)	Ø:333	5	0.1667	,000834	0.03(\$)			
	R4 (Stream)	@0.151	8 *	@ 0,0\\59 * (0.0425	0.926			
	D6 (Ditch)	0.298	2 .	0.0523	0.0855	0.0437			
15m	R1 (Pond)	0.4094 Q.092	5	0,1564	0.6262	9.0105			
Spray	R1 (Stream)	Q° Q.092 √0.088	8		© 60234 ©	0.0055			
drift &	R2 (Stream) R3 (Stream) R4 (Stream)	0.088	60"	0.0443	0.0220	0.0114			
Runoff	R3 (Stream)	0.179	8	0.0899	0.0449				
	R4 (Stream)	0.082	5 * 🖔	0.0451	0.6272	0.0186 *			
	D6 (Ditch)	© 196°	7. V	0.10\$7	0.0602	0.0339			
20m	R1 (Pond)	0.077) <u>.</u>	@" 0 3 0387	0.019	0.0077			
Spray	R1 (Stream)	0.059	5	9.02980 v	0.0450	0.0061			
drift &	R2 (Stream)	0056	9	0.0285	0.9142	0.0060			
Runoff	R3 (Stream)	Ø.115	4		Ø.0289	0.0115			
	R4 (Stream)	0.03) "	[0.0163	0.0096 *			
	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) R4 (Stream)								
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Table 9.2.5-14: Summary of FOCUS Step 4 PEC_{sw} values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10d int.); Entries marked with * result from single applications.

	Phosphonic acid PEC _{sw} [μg/L]								
Buffer		I ECs		Reduction 💸					
Width & Type	Scenario	0%	50%	75%	90%				
	D6 (Ditch)	1.3860	1.3860	X 1.3860					
	R1 (Pond)	1.7300	© .9324	0.5350	1 \$860 4				
5m	R1 (Stream)	8.5330	8.5330	8.5330	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
Spray	R2 (Stream)	9.6120	9.6120	9.6120	9.6420 4				
drift	R3 (Stream)	2.2650 *	1.4550	· 1.4550					
	R4 (Stream)	4.7360	6 4.7360 ×	4.7960	4.7360				
	D6 (Ditch)	1.3860	. 1.38 69	1%/ 1 1 ₆ 38601 ₆ \\	1.3860				
10m	R1 (Pond)	0.9253	0.4894	1 1 1 1 1 1 1 1 1 1 1	0.1420				
Spray	R1 (Stream)	3.761	0.4894 0.7610 0.4.3320	3.76100	3.7610 °				
drift &	R2 (Stream)	4.3320	4.3320	4.3320					
Runoff	R3 (Stream)	9.8205	0.65	4.2320 0.06548 2.1598	0.6548				
	R4 (Stream)	Ø2.1590	2,15/90 (2.1599	2,590 1,3860 0,1138 3,7610				
15	D6 (Ditch)	1.3860 0.6404 2,7610	0.3471 2.7608	1.3860 0.2012 37610	1.3860				
15m Spray	R1 (Pond) R1 (Stream)	0		02012	3.7610				
drift &	R2 (Stream)	3.7610 4.3320	3.7640	04.33 2. 0	4.3320				
Runoff	R2 (Stream)	7 ~ 4.332W 7 0.6548	4.0320	0.6548	4.3320 0.6548				
Kulloll	R2 (Stream) R3 (Stream) R4 (Stream)	(1 0.00 4 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.6320 0.6548	2.9390	2.1590				
	D6 (Ditch)	2,3570	1 3860	3860	1.3860				
20m	R1 (Pond)	0.4613	0.3439	0.1356	0.0709				
Spray	R1 (Stream)	1 9490	9470	1.9470	1.9470				
drift &	R2 (Stream)	22610	2.2610	2:2610	2.2610				
Runoff	R3 (Stream)	(v.3413)	0.3443	@ .3413	0.3413				
	R4 (Stream)	1.1320	13 320 D	1.1320	1.1320				
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Table 9.2.5-15: Summary of FOCUS Step 4 PEC_{sed} values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10d int.); Entries marked with * result from single applications.

	Phosphonic acid PEC _{sed} [µg/kg] Nozzle Reduction								
Buffer				Reduction 💸					
Width & Type	Scenario	0%	50%	75%	90%				
	D6 (Ditch)	1.3140	0.7187	₹ 0.4388	0,4348				
_	R1 (Pond)	6.1300	©.2710	1.8420	9.9843				
5m	R1 (Stream)	5.8250	5.8130	5.8070	\$5.8030				
Spray	R2 (Stream)	8.0920	8.0860	8.0820	8.0800				
drift	R3 (Stream)	0.8775		0.8614	03582				
	R4 (Stream)	13.360	13.360	13.050	13.350				
10m	D6 (Ditch) R1 (Pond)	0.5491 3.276 %	0.4369	0,4345	0.43507				
Spray	R1 (Stream)	1.9620	1,7\$60	2.93390 2.95 50	0.4678 129540 . •				
drift &	R1 (Stream)	2.7570	7540P.	2.7530	2.7520 2.7520 2.7520				
Runoff	R3 (Stream)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2.7540 0.35\$2	(D) 523 (L)	0.3502				
Runon	R4 (Stream)	Ø2.8080	2.8960	Ž.806g	2.8060				
	D6 (Ditch)	R 0.4373		0 4384	0.4327				
15m	R1 (Pond)	0.4473 2.2570 2.9580	1.2060 1.2060	0.4334 0.6810 9540 2.7520	0.3662				
				9540	1.9540				
drift &	R2 (Stream) R3 (Stream) R4 (Stream)	2.7540	1.9550 2.0530 53525	2.7520	© 2.7520				
Runoff	R3 (Stream)	0.3545	0/3525	0.3514	② 2.7520 ○ 0.3508				
	R4 (Stream)	2.8070	2.8060	2.8060	2.8050				
	D6 (Ditch)	0.4354	0.4338	9.4330	0.4325				
20m	R1 (Pond)	1.6320	03544	0.465	0.2325				
Spray	R1 (Stream)	0.9559	9.9544	0.9536 0 1:\$\frac{1}{5}30	0.9531				
drift &	R2 (Stream)	12/540	1.3530	0 1.3/530	1.3530				
Runoff	R3 (Stream)	(2) (3) 1824	0.1811	2 0.1804	0.1800				
	R4 (Stream)	1.1660	[1.1660	1.1660				
	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R4 (Stream) R4 (Stream)			. W					
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Summary of FOCUS Step 4 PEC_{sw} values of Fosetyl-Al (3×2.0 kg fosetyl-Al/ha, 10d tot.). **Table 9.2.5-16:** Entries marked with * result from single applications.

Table 9.2.5-17: Summary of FOCUS Step 4 PEC_{sed} values of Fosetyl-Al (3×2.0 kg fosetyl-Al/ha, 10d int.). Entries marked with * result from single applications.

	Fosetyl-Al PEC _{sed} [µg/kg]											
Buffer		Nozzle Reduction 💸 💍										
Width & Type	Scenario		0%		50%			75%			00%	
	D6 (Ditch)		3.0100		1.5050			&Ø.7524			0,3010	J
_	R1 (Pond)		0.2278		©.1155	5	. W	0.0593	1. 8		9.0276	Ί,
5m	R1 (Stream)		0.5296 *		0.2648	8 *	Q	0.1324	*0	. D	0.0639*	. 6
Spray	R2 (Stream)		0.5217 *		0.2609) *		0.1304		Q	0.0522 *	¥~
drift	R3 (Stream)		0.9660 *		0.4830	<u> </u> **\[\]	Ô	· 0.241	*			9
	R4 (Stream)		0.5484 *	· 107 ·	0.2742	<u> </u>	, Ø	0.1/90/1	1 1/2		0.0548	_
10	D6 (Ditch)		1.0760 0.123	. "	0.5386	-		0,2690 <0.0319		~\\\	0.10 ₹6 0.0141	
10m	R1 (Pond) R1 (Stream)		0.1238		0.0023		,	0.031	992	e 1	0.0141 040284 *	_
Spray drift &	R2 (Stream)		0.1918		@.0959 @.0945			0.0489	*	\$.	Ø.0189	0
Runoff	R3 (Stream)		0.4390 ·		0.1756	*	4	0. 04 72 .000875	.*		0.03.50	
Kulloll	R4 (Stream)		0.3499 0.1986*	Y 0	0.17030	* 6	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	2 0.0493		W	0.0.599 *	
	D6 (Ditch)	1	0.5801	*	0.2901	1		1 0.049		a S		
15m	R1 (Pond)		0.0838		0.0425	O .		0.1450 0.6220 0.0290			0.0580 0.0104	
Spray	R1 (Stream)		£0 1042 ×	. 9	0.059	'* *		A 0290			0.0278 *	
drift &	R2 (Stream)	, * 2	Ø.1042 Ĵ0.102 7 0*		0.0513	* ~		0.0250	•	a v	0.0103 *	
Runoff	R2 (Stream) R3 (Stream) R4 (Stream)		0.1991 *	. 0"	0. 05 13 0.0951	(#)S	, Pa	0.025	*		0.0190 *	
runon	R4 (Stream)	&,	0.0079 *		≈0.0540	*		0.0270	**		0.0108 *	
	D6 (Ditch)	O ^v	3724	V	0.1862	2	Ş.	~0.0931			0.0372	_
20m	R1 (Pond)]]]	0.061		0.0312	2 . ~		\$0.01 (0.0070	
Spray	R1 (Stream)	1	0.0673		×9.0336		Q,	0.04,68	*		0.0146 *	
drift &	R2 (Stream)	~Q	0.00663	:\$7	0.0331	*	0"	0.0166	*		0.0066 *	
Runoff	R3 (Stream)		* 1227 *	· \ \ ^(0.0614	* 4		@ .0307	*		0.0123 *	
	R4 (Stream)\ \		0.0697**		00348	*	Î ş	90.0174	. *		0.0070 *	
	R2 (Stream) R3 (Stream) R4 (Stream) D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	O			3		an a	9				
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Table 9.2.5-18: Summary of FOCUS Step 4 PEC_{sw} values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10d int.); Entries marked with * result from single applications.

				honic C _{sw} [μg						
Buffer		Nozzle Reduction								*
Width & Type	Scenario		0%		50%		75%		00%	
	D6 (Ditch)		6.6170		3.3090		₹ 7.6540		1,3930 ×	
	R1 (Pond)		1.8080		© .0210		0.6286		9 .4096	
5m	R1 (Stream)		4.2990		4.2990		4.2990		4.2990	
Spray	R2 (Stream)		3.8780		3.8780		9 3.8780 3.0780	Q	3.8380	\checkmark
drift	R3 (Stream)		6.7380	4	6.7370	Q,	6.7370	L, "	60370 C	7
	R4 (Stream)		5.7770	_^^~	5.777,0	, "	5.700	Ď ^y Ø	5.7770	
	D6 (Ditch)		2.3660	Y	。1.39 39			\	1.3930	
10m	R1 (Pond)		0.9539		0.5235	Ĵ	♥ %\D\\\X\\\\		0.1810	
Spray	R1 (Stream)		1.9430		£9430	\@'	1.94 30	5 4	1.9430 . •	
drift &	R2 (Stream)		1.7500	7	<u>√</u> ¥./500f	\$	1.7500		9.7500 ×	
Runoff	R3 (Stream)		3.0490	,	\$ J.U	ł	1. " 6 DSOTTON		3.0490	
	R4 (Stream)		<u> 2.5850 / </u>	- W	2,5850	\mathbb{Q}	2.5859		2.5850	
	D6 (Ditch)		1.3930		0.3831 0.480	~ ~	1.3930		1.3930 0.1607	
15m	R1 (Pond)	2	0.6627	¥	0.383	,	0.2980 0.2989 5 9430 7 7500	ř, Ků		
Spray	R1 (Stream)	*	J.9430 ⊘1.750 ©		1.9430 1.7500	Á	0 59430		1.9430	
drift &	R2 (Stream)				1.0500	Q	Ø1.7500	&	1.7500	
Runoff	R2 (Stream) R3 (Stream) R4 (Stream)		3.0490	ام.	1.0500 3.0490	@ v	3.0490	\circ	3.0490	
	R4 (Stream)	×	2.6850	<u> </u>	© 2.5850		2.5850		2.5850	
••	D6 (Ditch)		3930		1.3930	×	3930		1.3930	
20m	RI (Pond)	, an	0.475	ĮŲ"	0.3612	(L)	0.15		0.0905	
Spray	R1 (Stream)	4	1.0160	A .	₹.0160)"	(L) 1.0460		1.0160	
drift &	R2 (Stream)		0913/) (0.913/		© 0.59137 ⊘ .5940		0.9137	
Kunon	R3 (Stream)		1 2440	1000	1.3940		(J.3940 (J.3460		1.5940 1.3460	
	IK4 (Biteaili)		1.3460	1 Y .	N 400	Ş I	1.3400		1.5400	J
	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	0	~~ . <i>(</i>				, O			
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Table 9.2.5-19: Summary of FOCUS Step 4 PEC_{sed} values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10d int.); Entries marked with * result from single applications.

			phonic acid s _{ed} [μg/kg]						
Buffer		Nozzle Reduction							
Width & Type	Scenario	0%	50%	75%	90%				
	D6 (Ditch)	15.320	7.6660	3.8390	1,5440				
	R1 (Pond)	6.7340	3 8430	2.3980	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				
5m	R1 (Stream)	6.4800	6.4720	6.4690	\$\\ \\$6.4660\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
Spray	R2 (Stream)	2.9260	2.9220	2.9200	2.9590				
drift	R3 (Stream)	14.340	14.290	• 14.270	1 a 1 14,2601 W				
	R4 (Stream)	7.7740	7.7650	7.7000	7.7570				
1.0	D6 (Ditch)	5.4850	. 2.7499	13810	0.5600				
10m	R1 (Pond)	3.5276 1.5220	1,9470	1.1560 1.510	0.6828				
Spray	R1 (Stream)	0.9948	\$\int \text{P.5190} \tilde{\pi} \text{\tiny{\text{\ti}\text{\texi}\text{\text{\text{\text{\text{\text{\texi}\text{\text{\texi}\text{\text{\text{\text{\text{\texi}\text{\texi{\texi{\texi{\texi{\texi{\texi}\text{\text{\texi{\texi{\texi{\texi{\texi{\texi}\texi{\texi{	1.5184	\$170 ° \$5170 ° \$6.9923 \$7				
drift & Runoff	R2 (Stream) R3 (Stream)	0.948	3.4360	0.9927	3.42				
Kuiioii	R4 (Stream)	02.0710	2.0680	2.0669	2.650				
	D6 (Ditch)	2.9630		2.000g 0.7 5 07	0.3223				
15m	R1 (Pond)	2.4950	4880	0.70	0.5223				
~	- 1 in i		1.5480	5170 S	1.5160				
drift &	R2 (Stream)	\$\times_1.5190 \\ \times_0.993 5 \\	0.9928	00.9924					
Runoff	R2 (Stream) R3 (Stream) R4 (Stream)	3 4370	10° \$4280 %	3.4240	0.9922				
Ttuno11	R4 (Stream)	2.0680	2.0660	2.6650	2.0650				
	D6 (Ditch)	9070	0.9601	9.4867	0.3184				
20m	R1 (Pond)	1.7580	0.9697	0.575	0.3397				
Spray	R1 (Stream)	0.6620	20.6611	0.6606	0.6604				
drift &	R2 (Stream)	0.4883	0.4878	0.4876	0.4874				
Runoff	R3 (Stream)	(2) (2) × .5160	1.5,00	⊘ .5070	1.5060				
	R4 (Stream)	0.9456	<u> </u>	0.9438	0.9434				
	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)			<i>@1</i>					
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As requested by the RMS France, new PEC_{sw} calculations were performed using the input parameters as provided by ANSES (see Table 9.2.5-21).

KCP 9.2.5/02 : 2016: M-563432-01-1 Report:

Fosetyl-Al (FEA) and metabolite: PECsw,sed FOCUS EUR: Use in pome fruit and grapes in Europe
EnSa-16-0661 v1
M-563432-01-1
none
none
none Title:

Guideline(s): Guideline deviation(s): **GLP/GEP:**

Methods and Materials:

Report No.: Document No.:

Predicted environmental concentrations of the active substance fosetyl-aluminum (fosetyl-Al) and its metabolite phosphonic acid in surface water (PEC_{sw}) and sediment (PEC_{sed}) were calculated for the use in Europe, employing the tiered FOCUS Surface Water (SW) approach (FOCUS 2001, 2015). All relevant entry routes of a compound into surface water (spincipally a combination of spray drift and runoff/erosion or drain flow) were considered in these calculations.

The use of fosetyl-Al in grapes was assessed according to the Good Agricultural Practice (GAP) in Europe. Detailed application parameters are presented in The 9.20-20,

General and EQCUS-specific data on the use pattern of fosetyl-Al in Europe (for Table 9.2.5- 20: FOCUS Step 1,&2) 🔬 🤅

Individual Crop	intercention		BICH stage	Application Interval (days)	Plant O	Season
Grapes (early)	vines, late of	2006 2006			minimal crop	Mar May.
Grapes (late)	(vines / late)	3 © 2000 ©	59-81 0	4/ 3/	full canopy (60%)	June - Sep.

For fose Al and its metabolite phosphopic acid OCUS Step 9 and Step 4 values were calculated in addition to FOCUS Step 1 and Step 2 values.

On 2016-07-27, the RMS France requested additional PGC calculations during the approval renewal process of the active substance fosetyl-At Amalgamated data from three applicants should be used for fosetyl-Al and its metabolite. The apput parameters proposed by ANSES are summarised in Table 9.26-21. process of the active substance fosetyl-Al-Amalgamated data from three applicants should be used for

ANSES.

Table 9.2.5-21: List of the main parameters as proposed by RMS for the risk assessment

rameter	<u>li</u>	<mark>iput</mark>	Remarks		
	Fosetyl-Al	Phosphonic acid	(Concerning phosphonic acid		
Γ_{50} soil (days)	0.1	133.7	Geometric mean of all acceptable values a),b,c		
aximum occurrence in soil (%)	-	100			
aximum occurrence in water (%)		100			
Γ_{50} water/sed system (days) (STEP 1)	3	400			
Γ_{50} water (days) (STEP 2,3,4)	3	_e 1000	4 9 9		
Γ_{50} sediment (days) (STEP 2, 3, 4)	1000	1000			
oc (L/kg)	<mark>0.1</mark>	4			
(L/kg)		15.9	Geometric mean of all acceptable warues defived from batch studies.		
	10	0.69	Arithmetic mean of all acceptable values derived from Satch studies derived from Satch studies described and second acceptable.		
op uptake factor	10 7		Conservative assumption		
; 2015; M-532341-01-1; BCS	; please refer to	Decument MC	CA Section 7, chapter CA 21.2.12		
; 1999; M-184316	- 0 1-1; ₽ ₽\$; ₁	olease refer to	Oocument MCV, Section 7, Chapter		
CA 7.1.2.1.2					
; 2015; S15-00506; Fosety 3 A	Task Force				
; 2008; B30701; ISK B josci	iences Europe S	S.A.	Document MCN, Section 7, Chapter		
; 2007; GAB-014/7-13; Cosetyl-	Al Task Force				
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Ø 0.		e (

values for calculation of PEO in groundwater. The value of 1397 days is presumably based on using sol based on the slow phase of the DFOP model (1000 days for the ; 2015; M-532341-01-1), and 532 days for the LUFA soft submitted by the FAIR ICF task force (S15-00506) based on the HS model Sincoboth soils show a similar pattern, the HS model is more appropriate for soil in this light, instead of a very conservative estimation of 1000 days based on only the few last data points, which was deemed uppeliable by BCS. ANSES proposes additionally values of 1000 days to be used as DT₅₀ for PEC in total water/sediment systems (FOCUS Steps 1) and, each to be used in surface water and sediment (FOCUS Steps 2, 3, 4). However, the study of and (2005, M_z251520-01-1) shows that phosphonic acid clearly declines for sediment with a D 50 of 102 days. Thus, the degradation half-live estimated from the sediment compartation should be used as a conservative endpoint for FOCUS modelling. Despite these points, the PEC calculations were carried out with the input parameters proposed by

For the metabolite phosphonic acid assorption/desorption studies suggested significant retention of phosphonic acid by soil indicating a very low leaching potential. The observed sorption behaviour of phosphonic acid or its phosphonate salts involved the formation of insoluble salts and/or complexes with soil. No correlation of sorption with the organic carbon content was found. This is in contrast to the behaviour of carbon containing, i.e. organic compounds. The interaction of phosphonic acid with the organic carbon of soil was thus not regarded to be the main mechanism for sorption. Consequently, the use of a standard K_o value as model input in standard exposure models is scientifically not justified. In the absence of relation between sorption of the compound and soil properties, constant distribution coefficients (K_f or K_d) should be employed instead.

For exposure modelling the sorption in terms of the Freundlich adsorption coefficient K_f is adequately represented by the use of the geometric mean of the total set of sorption data available (geometric mean $K_f = 15.9 \text{ mL/g}$).

Using the K_f parameter instead of K_{oc} requires the following changes in the FOCUS surface vater calculations:

FOCUS Steps 1-2 requires a K_{oc} value as input, which was calculated as pseudo K_{oc} value as 318 mL/g from the scenario specific organic carbon content of 5% in the sediment.

FOCUS TOXSWA requires a K_{om} value as input, which was calculated as a pseudo to value of 177 mL/g from the scenario specific organic matter content of 9% in the sediment of all FOCUS Step 3 scenarios.

For FOCUS PRZM and FOCUS MACRO simulation runs the solution has to be implemented manually in the input files for each soil layer.

Compound specific input data are summarised below for FOCOS Step 3/4 (see Table 9.2 \$\sqrt{2}\).

Table 9.2.5- 22: Substance parameters used for fosetyl-Aland its metabolite

Parameter	Unit	Parent C	Metabolite Programme Control of the
Substance SWASH code General		Fosety1-Al (FE) 354, 83 116000 (20°C) 45-07 (25°C)	Phosphonic acid
General			BSPO3
General Molar mass Water solubility (temp.)		354,04	82 © % 110000 @ °C)
Molar mass Water solubility (temp.) Vapour pressure (temp.)	(mg/L)	110000 (20°C)	110000 (20°C)
Crop processes		108-07 (23° C) - 7	②E-07 ₄ (25 °C)
Coefficient for uptake by plant (LCF)	(mg/L) (Pa) (Pa) (1/m) (ma) (mg/L)		
Sorption Sorption		20° ×	2
Coefficient for uptake by plant (TSCF) Wash-off factor Sorption Koc Kom Examplich ava Cont (10)	(mI/g) (mI/g)		305.15 a)
Wash-off factor Sorption Koc KoM Freundlich experient (1)	(mI/g) (mI/g) (days)		177 ^{a)} 0.69
Freundlich exponent (10) Transformation D.T. in soil			0.07
	(days)	YU.I @, @	133.7
temperature C C C C C C C C C C C C C C C C C C C	Hog(cm)		20 2
formation fraction Soil		4	3
DT ₅₀ in water temperature	(dayy)		1000 20
formation fraction in Water	days		3
DT ₅₀ in sediment	(daysa)	<mark>0∤000</mark> {	1000
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 Exponent for the effect of moisture PRZM and TOXSWA (Walker exp.) MACRO (calibrated value)	days)		20 3
DT ₅₀ on canopy	(days)	10	10
Exponent for the effect of moisture PRZM and TOXSWA (Walker exp.)		0.7	0.7
		0.49	0.49
Effect of temperature	(I-I/m al)	(5.A	(5 A
TOXSWA (molar activation energy) MACRO Weffect of temperature)	(kJ/mol) (1/K)	65.4 0.0948	65.4 0.0948
PRZM (Q	(-)	2.58	2.58

a Karalue used for Step 3 modelling with MACRO and PRZM

In FOCUS Step 3, the application date for each scenario is determined by the Pesticide Application Timer (PAT), which is part of the FOCUS SW Scenarios. The user may only define an application time window. The actual application date is then set by the PAT in such a way that there are at least 10 mm of rainfall in the first 10 days after application, and at the same time less than 2 mm of rainfall in the first 10 days after application, and at the same time less than 2 mm of rainfall application time window, the date of application. If no such date can be found within the application time window, the above rules are step-wise relaxed. Information of application dates can be found in Table 9.2.5-23 and Table 9.2.5-24.

Table 9.2.5- 23: Application dates of fosetyl-Al for the FOCUS Step 3 calculations for the use in grape (early)

(early)			
Run IDs	DGR III / ÆMT III		
GAP Name (DGR)	Grapes (threefold ap	plm early)。 (
Assessment name (PMT)	Grapes threefold ap	pln, early) Q'	
FOCUS model crop (crop group)	Vines, late applns (%	nes / late)	
Use pattern	3 Kg a. Tha, 19 day	vs.jipt. & &	
Appl. method (Run off CAM, depth inc.)	Air blæt (2 - æppln fo	Mar linear, 4 cm)	
PAT start date		$A \cap C'$	
(relative to crop event or absolute)	*		
PAT window range	sp uays 795 uays, see	enstrio specific (that	i = 50 days)
Drainage scenarios start/end date (Jul. day, range)	Runoff Scenatios	Start/endGate Qil. day, range	
D6 24-Feb/27-Apt 27-Feb 5 14-Mar 99-Apt 99-Apt	Pond/Stream	05-May/27-Jun (1/25/178/53)	08-May 31-May 12-Jun
	Stréam S	29-Apr/24-Jul (110/205, 95) 02-May/25-Jul (122/206, 84)	22-Apr 07-May 20-May
	Stream A	Ö 02-May/25-Jul (122/206, 84)	16-Jun
	R4 Stream	13-Apr/13-Jul (103/194, 91)	04-May 20-May 30-May
Drainage scenarios start/end date (Jul. day, range) D6 Ditch Ditch D6 Ditch D7 Ditc	Q*		

Table 9.2.5- 24: Application dates of fosety (late)	VI-Al for the FOCUS Step 3 calculations for the use in grape
Run IDs GAP Name (DGR) Assessment name (PMT)	DGR IV / PMT IV Grapes (threefold appln, late) Grapes (threefold appln, late)
FOCUS model crop (crop group)	Vines, late applns (vines / late)
Use pattern	3×2 kg a.s./ha, 10 days int.
Appl. method (Run off CAM, depth inc.)	Air blast (2 - appln foliar linear, 4 cm)
PAT start date (relative to crop event or absolute)	Absolute V
PAT window range	50 days 439 days, scenario specific (min = 50 days)
Drainage PAT Application scenarios start/end date (Jul. day, range)	Absolute So days - 439 days, scenario specific (min = 54) days) Runoff Scenarios Scenarios (Jul. day, vange)
D6 27-Apr/13-Sep 07-May 17-May	Stream S
	7

Findings:

FOCUS Step 1 and 2:

The maximum PEC values for FOCUS Step 1 and 2 are given in the tables below for fosetyl-Aland its major metabolite phosphonic acid.

Table 9.2.5-25: Summary of the maximum PEC_{sw} and PEC_{sed} values fosetyl-A (FOCUS Steps 1-2)

			A	, W
			setyl-Al (FEA)	
		PEC O	Y TWA	TWA O
		max 🎉	7 days	days
Licago	Scenario (Sw Sed S	SW Sed SW	Sed @
Usage	Scenario (Contraction (Contract	[µg/L] [µg/kg] [µ	g/L] Org/kg} ug/I	

Vines, early	Step 1 Step 2	720.10 (35.6666) 35	57.20 0.3535 1479	09 0 19401
3×2000g a.s./ha, 10 days int.	N-EU Multi	51.002 0.0340 28	\$\int_{\text{89}} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	76 ² €0 0085 °
min crop cover	S-EU-Multi		5.389©0.0195 [©] 10.43	0.0085
Spring (Mar May)	N-EU Single	\$3.520 0.035 7 26	5.64 2 0.0 20 5 10.99	0 0 089
	SEU Single	53.520 0.039 26	642 06205 10.99	03 0.0089
	Step 1 4 . 4	720,70 0.666 35	7.29 3. 3535 447.3	0.1461
Vines, late	rstep 2 °			
3×2000g a.s./ha, 10 days int.	N-DU Multo		5. 389 0.0 19 5 10. 3 77	
full canopy Summer (Jun Sep.)	S-EU Multi		5. 3 89 69 195 4. 0.47	
Summer (Jun Sep.)	N-EU Single	53.520 0.6357 26	(a)	0.000
	S-EU Single	58.520 0.0357 26	6.642 0.02 05 10.99	0.0089

Table 9.2.5- 26: Summary of the maximum PECsw and PECsed values phosphonic acid (FOCUS Steps 1-2)

			, S	Phospho	onic acid		
		PF	EC T	TV	VA ays	T	VA days
Tleage &	Step 6	SW	Sed [µg/kg]	\mathbf{SW}	Sed	SW	Sed
Vines, early 3×2000g a.s./ha, 10 days int. min crop cover Spring (Mar. May)	Step 6 2 2	2062.8	6449.5	[μg/L] 2027.0	[μg/kg] 6420.6	[μg/L] 2015.7	[μg/kg] 6401.3
Vines, early 3×2000g a.s./ha, 10 days int.	Step Step 2 Step 2 Step 2 Step 2 Step 2 Step 3 Step 3 Step 4 Step 4 Step 4 Step 5 Step 6 Step 6 Step 6 Step 6 Step 7 Step	182.27	558.10	175.72	556.75	174.53	554.06
3×2000g a.s./ha, 10 days int. min crop cover Spring (Mar. May)	S-EU-Multi N-EV Single SASU Single	29 1 .94 67.129 105.35	904.40 204.20 325.67	284.44 64.308 102.44	902.21 203.71 324.88	282.71 63.862 101.81	897.85 202.72 323.31
Vines, late 3×2000g a.s./ha, 10 days introlled the second	Step 1	2062.8	6449.5	2027.0	6420.6	2015.7	6401.3
3×2000g a.s./ha, 10 days int	N-EU Muki	146.64 182.97	442.67 558.10	139.49 175.72	441.59 556.75	138.47 174.53	439.46 554.06
Summer (Jun Sep.)	S-EU Single	54.387 67.129	163.71 204.20	51.598 64.308	163.32 203.71	51.213 63.862	162.53
Vines, late 3×2060g a.s./ha, 10 days int full canopy Summer (Jun Sop.)		1					
Summer (Jun Sept.)							

FOCUS Step 3 and 4:

The maximum PEC values for FOCUS Step 3 and 4 are given in the tables below for fosetyl-Al and its metabolite phosphonic acid considering the application in grapes early and late. Single and multiple application PEC_{sw} and PEC_{sed} values are presented for all relevant scenarios in Step 3 and 4.

Grapes, early

Table 9.2.5- 27: PEC_{sw} and PEC_{sed} values of fosetyl-Al (3×2.0 kg a.s./ha, 10 days int.) in grapes (early) for all calculated scenarios according to FOCUS SW Step 3

			Fosetyl-Al		
		Entry route	REC max	Q o o o o o o o o o o o o o o o o o o o	
	Scenario	Spray drift Runoff Drainage	SW Sed	SW Sed	SW Sed
	D6 (Ditch)	S ×	29,250 2.4640	7.7920 1.60	3.2560 1.04 0
Multiple	R1 (Pond)_ R1 (Stream)	S Q	134950 0.2446 24.410 0.662	0.7 25 1 0. 2 30 0.160	15 0 2 f 2 1 P1 022
applications	R2 (Stream) R3 (Stream)		28.666 0.6336 30.250 2.2850 £	0.4132 0.124	0.304 0.755 0.0946 0.3335
	R4 (Stream)	S L	21,050 00.5425°		0.1024
	D6 (Ditch) R1 (Pond)	V usi i	33.700 ° 1.3700 1.2220 0 678	202690 0.50 9.8460 0.166	№ 0.4721 0.1450
Single application	R1 (Stream) © R2 (Stream)		1 24 640 0.5638 3 140 0.5952	0.4170 0.092	29 (0.1443 0.0513 52 (0.1292 0.0464
	R3 (Stream) R4 (Stream)		95.120 1.1370 24.700 0.5754	0.2710 0.274 0.449 0 0.189	
In hold: high	est PE w value				0.0001

Table 9.2.5- 28: PEC, and PEC, value of phosphonic acid \$3 \times 2.0 kg fosetyl-Al/ha, 10 days int.) in grapes (early) for all calculated scenarios according to FOCUS SW Step 3

			104				
		Phosphot	pic Acto				
Scenario A			& £				
Scenario A		PEC		TWA	7 days	TWA 2	21 days
Scenario S			Sed	SW	Sed	SW	Sed
		[μ gΦ]	[pg/kg]	[µg/L]	[µg/kg]	[µg/L]	$[\mu g/kg]$
D6 (Ditch)	O'	2,2240 s	ر <mark>4.0090</mark>	0.9229	3.6530	0.3548	3.0500
		@ E 7 7 0 0	13.810	1.5710	13.810	1.5110	13.800
Multiple R1 (Stream) Δ		7 14.560	10.230	1.6650	6.9180	0.5664	5.3720
applications R2 (Stream)	l Q	16.390	13.020	2.5280	8.2920	0.8454	6.2390
R3 (Stream)	<i>@</i> ,	3.0750	3.3980	0.3293	2.8300	0.1230	2.4250
Single Ry (Stream) Single Ry (Stream) Single Ry (Stream)		8 .8200	21.460	1.4540	20.190	0.4866	19.310
OD6 (Butch)		0.5346	0.6987	0.1194	0.6143	0.0851	0.5468
R1 Pond) S	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	0.5837	5.9400	0.5821	5.9400	0.5645	5.9380
Single R1 (Pond) Sapplication R2 (Stream) R3 (Stream)		3.3610	2.9880	0.3678	2.3280	0.1502	1.8980
application (Assz (Suetam) ~ 7		3.3860	3.0940	0.5221	2.2090	0.1743	1.7050
R3 (Stream)		3.1630	1.3140	0.1264	1.1580	0.0423	1.0200
R3 (Stream) R4 (Stream)		4.1590	8.4980	0.9081	8.1410	0.3120	7.8810

In bold; bighest PECsw value

Grapes, late

Table 9.2.5- 29: PEC_{sw} and PEC_{sed} values of fosetyl-Al (3×2.0 kg a.s./ha, 10 days int.) in grapes (late) for all calculated scenarios according to FOCUS SW Step 3

			Fosety	yl-Al		F		
	Scenario	Entry route Spray drift Runoff	PEC Sw	max &	TWA	Adays Sed	TWA 7	Zi days Sed
Multiple applications	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	Drainage S S S S S S	30.530 1.1810 21.460 28.770 30.250 \$21.460	0.6196 Ø.6667 ©1.2750	Ø.5794	4.6280 0.1885 0.1284 0.429 0.4530 0.2032	0.4344 0.4344 1.0460	β9750 0.1613 0.1054 0.1054 0.3427 0.3466 0.1594
Single application	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	S	34,330 1,2220 25,100 33,750 35,490 25,480	0.7270 0.7270 0.7270 0.7261 3.3260 0.7528	19.346 0.7695 0.6798 0.5097 1.7746	3.4 51 0 9. ¥ 309 0.1506	7.0310 0.3358	W// h

Table 9.2.5-30: PEC_{sw} and PEC_{sed} values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10 days int.) in grapes (late) for all calculated scenarios according to FOCUS SW Step 3

Phosphonic Acid O'	- 	
Scenario C PEC max T TWA 7		
REC max. ST TWA-7	days TWA	21 days
Scenggio De Sed Sed Sed Sed Sed Sed Sed Sed Sed Se	Sed SW	Sed
	μg/kg] [μg/L]	[µg/kg]
D6 (Ditch) 11.030 37.500 9.5610 R1 Pond	36.320 8.0850	32.350
R14Bond	15.150 1.6120 6.9840 0.3071	15.150
Multiple applications R2 (Stream) 5.2960 8.2610 0.5891 0 0.7942	6.9840 0.3071 4.2660 0.3418	6.7340 3.6600
applications R2 (Stream)	22.390 0.8422	19.870
R4 (Stream) 8.3330 33.350 1.5470	10.770 0.5175	9.9130
D6 (Ditch) 9,4060 18.470 7.8460 R1 (Pone) 9,9132 7.8280 0.9094 Single R1 (Stream) 4.9446 8.0260 0.5350 application R2 (Stream) 1.6910 2.0520 0.1994	17.760 3.8950 7.8280 0.8751	15.000 7.8260
R1 (Pond) Q 7.8280 0.9094 8.0260 0.5350 application R2 (Stream) Q 1.6010 2.0520 0.1994 R3 (Stream) Q 1.6010 2.0520 0.3319	6.7620 0.2350	6.2600
application R2 (Stream) 1.6910 2.0520 0.1994 R3 (Stream) 2 2.0520 0.3319	0.0886	1.6700
R3 (Stream)	0.1576	6.1380
2.2520 5.3770 0.3940 1.3	5.1020 0.1319	4.8860
In bold: highest PE ssw value		
J Ž A J		
R1 (Pont)		

FOCUS Step 4

FOCUS Step 4 calculations considering different buffer zones in combination with mitigation by drift reducing nozzles (where applicable) were conducted based on the Step 3 results. In the following a summary of PEC values resulting from single and multiple applications for relevant crops are given for fosetyl-Al and phosphonic acid.

Grapes, early

Table 9.2.5-31: Summary of FOCUS Step 4 PEC_{sw} values of fosetyl-Al(3×2.0 kg a.s./ha, 10 days in Sentries marked with * result from single applications.

		Fosetylekl PECswalug/L	Q Z		
Buffer Width &		u k	ZZe Reduction		
Type	Scenario	0% × 6 50%	75	% & *	90%
	D6 (Ditch) R1 (Pond)	S 20.390 * S 00.210 S 1.4490 * S 0.7098		260	200730 **
<mark>5m</mark>	R1 (Stream)	S 37.930 8.9640	* 5 S 4.4	820	1.7950 *
Spray drift	R2 (Stream) R3 (Stream)	S 24.140 * 3 12.070 S 25.590 * S 42.790	$\begin{vmatrix} 3 & 5 & 6.0 \\ 3 & 5 & 6.3 \end{vmatrix}$	356 * 5 250 * 5	2.4T40 * \$25590 *
CITT	R4 (Stream)	4 1,7.990		980 3 S S ∞	1.7990 *
10m	D6 (Ditch) R1 (Pond) R1 (Stream)	S 27.4100 7 * S 3.72.40 S 20.7841 * S 0.3906	S 0.8	810 0 * «S 953 * S	0.7752 * 0.0781 *
Spray			* % 1,6	230 * S	0.6494 *
drift & Runoff	R2 (Stream) Q R3 (Stream)	S 8 440 S 4.3720		860 (* S	0.8744 * 0.9268 *
Kulloff	R3 (Stream) R4 (Stream)	S, 9 6.5179 * S 2580	S ₄ 1.6	* S	0.6517 *
15m		\$\begin{align*} 4.02430 & \begin{align*} \begin{align*} \begin{align*} \begin{align*} \begin{align*} \begin{align*} 2.0410 \\ \begin{align*} \begin{align*} \begin{align*} \begin{align*} 2.0410 \\ \begin{align*} \begi		§90 * S 323 * S	0.4386 * 0.0529 *
Spray	R1 (Poor) R1 (Stream)		S = 0.8		0.0329
drift &	R2 Stream O	S 4.7500 * 5 S 2.3750		880 * S 590 * S	0.4751 * 0.5035 *
Runoff	CR4 (Stream) .	②S	~ // .	852 * S	0.3033 * * *
	D6 (Ditch)	S 02.6240 * S 1.3310 S 0.3930 * OS 0.1965	S 0.6	845 * S	0.2966 *
20m 🚫	D6 (Ditch) C R1 (Pond) C R1 (Stream)	S 0.3930 * O S 691965 S 20770 * S Q 1.1390		983 * S 694 * S	0.0393 * 0.2277 *
drift &	R2 (Stream)	S 3.0670 0* SO 1.5330	* S 0.7	667 * S	0.3067
Runoff	R2 (Stream) R3 (Stream) R4@Stream	S 3.2500 * S 1.6250 S 2.2860 * S 0.1430		126 * S 714 * S	0.3250 * 0.2286 *

S, R and D denote main entry route out spray drift, remoff of drainage, respectively.

Table 9.2.5- 32: Summary of FOCUS Step 4 PEC_{sed} values of fosetyl-Al (3×2.0 kg a.s./ha, 10 days int.); Entries marked with * result from single applications.

Buffer Width & Secario Pai Pai Secario Pai Pai Secario Pai P	Type			Fosety PEC _{sed} [µ			
R1 (Pond)	R1 (Pond)				Nozzle I	Reduction	
R1 (Pond)	R1 (Pond)					75%	90% 57
R4 (Stream)	R4 (Stream)				<i>≥</i> 3.	0.0713	0.1617
R3 (Stream)	R4 (Stream)	_		0.4807		0.1206	9.0486
Spray R1 (Stream)	Spray drift & R2 (Stream) 0.1719 0.0861 0.0432 0.04174 0.0174 0.0174 0.0411 0.0174 0.0174 0.0334 0.0334 0.0334 0.0334 0.0334 0.0334 0.0334 0.0226 0.0226 0.0226 0.0226 0.0226 0.0437 0.0449 0.0095 0.0114		R3 (Stream)	0.5520	0.1005		0.0933
Spray R1 (Stream)	Spray drift & R2 (Stream) 0.1719 0.0861 0.0432 0.04174 0.0174 0.0411 0.0174 0.0174 0.0341 0.0411 0.0344 0.0334 0.0334 0.0334 0.0334 0.0334 0.0226 0.0226 0.0226 0.0226 0.0226 0.0457 0.0457 0.0457 0.0437 0.0449 0.0095 0.0114			0.5406	0.2776	0.11409	0.0581 % 0.0672
Runoff R3 (Stream)	Runoff R3 (Stream) R4 (Stream) R4 (Stream) R5 (S	_	R1 (Pond)	0.1552	0.0796	0.0388	0.0150
Runoff R3 (Stream) R4 (Stream) D6 (Ditch) I5m R1 (Pond) Spray R1 (Stream) R3 (Stream) R4 (Stream) R1 (Stream) R1 (Stream) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) R5 (Ditch) R1 (Pond) R6 (Ditch) R1 (Pond) R1 (Stream) R1 (Stream	Runoff R3 (Stream) R4 (Stream) D6 (Ditch) I5m R1 (Pond) Spray R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) R4 (Stream) R5 R2 (Stream) R4 (Stream) R5 R		R2 (Stream)		₩.U022 \\	│ .	0164
Spray	Spray	Runoff	R3 (Stream)	0.1510	0.1667	$ \langle -\rangle 0.0834 \langle -\rangle $	0.0334
D6 (Ditch) R1 (Pond) R1 (Stream) O.0595 R1 (Stream) O.0595 R2 (Stream) R3 (Stream) R3 (Stream) R4 (Stream) O.0595	D6 (Ditch)	1 /	D6 (Ditch)		00564	0.085	0.0437
D6 (Ditch) R1 (Pond) R1 (Stream) O.0595 R1 (Stream) O.0595 R2 (Stream) R3 (Stream) R3 (Stream) R4 (Stream) O.0595	D6 (Ditch)	-	R1 (Stream)	Q 0.0928	0.0465	0.0534	0.0095
D6 (Ditch) R1 (Pond) R1 (Stream) O.0595 R1 (Stream) O.0595 R2 (Stream) R3 (Stream) R3 (Stream) R4 (Stream) O.0595	D6 (Ditch)		R2 (Stream)	0 \(\sqrt{0.1788} \)	0.0443 0	0.0223	0.0114
Spray R1 (Stream) 0.0595 0.0595 0.0298 0.0150 0.0061 0.0060 0.0595 0.0595 0.0595 0.0595 0.0085 0.0086 0.0085 0.008	Spray R1 (Stream) 0.0595 0.0298 0.0150 0.0061 0.0060 R1 (Stream) 0.0595 0.0285 0.0285 0.0285 0.0060 0.0154	Runon	R4 (Stream)) & 0.0825 *\	∂9.0451	0.0272	0.0186 *
drift & R2 (Stream)	drift & R2 (Stream)	20m	D6 (Ditch) R1 (Pond)	A 0.0773	$\begin{array}{c c} & 0.1057 & 0.0057 & 0$		
Runoff R3 (Steem & 9 09154 00594 d 00289 00115	Runoff R3 (Steem & D 0.0154 0.055 d 0.0289 0.0115		R1 (Stream)	9 0.0595 0.0595 0.0595 0.0595 0.0595 0.0595		0.0150	
S, R and D denote main entry route via pray defit, runos or or drainage as spectively.	R4 (Stream) S. R and D dense many entry route via Spray drift, runoff or drainage sespectively.	Runoff	R3 (Stream)		A 0.5€	@ 0289	0.0115

Summary of FOCUS Step 4 PECsw values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, Table 9.2.5- 33: 10 days int.); Entries marked with * result from single applications.

	Phosphonic acid PEC _{sw} [μg/L] Nozzle Reduction							
Buffer Width &				Reduction				
Type	Scenario	<mark>0%</mark>	<mark>50%</mark>	75%	90%			
	D6 (Ditch)	1.9820	1.9820	1.9820	1 % ~ 1 1.9820 1 % 1			
-	R1 (Pond)	1.8070	988	0.6042	16.360 2.7530 2.88200			
5m	R1 (Stream) R2 (Stream)	14.560 16.390	4.560 16.390	14.300	34.566 6 16.366 4			
Spray drift	R3 (Stream)	2.7130	16.390 2.7130	¥ 27130°	2.7030			
GIII	R4 (Stream)	8.8200	(M) X X Z D D D D	X X X X X X X X X X X X X X X X X X X	8.8200			
	D6 (Ditch)	1 9820 ~	1 <mark>1.9826</mark> ∞1	1,9820	1.9820			
10m	R1 (Pond)	0.9408 🚱	0.50\$\$	1 9820 0 2932 7 4156	1.9820 0.1682			
Spray	R1 (Stream)	6.4150	0.50\$5 6.4150 73840	96.4150 0				
drift &	R2 (Stream)	7.3840	₹ 3840 ₹	7.3840	© 23840 ×			
Runoff	R3 (Stream) R4 (Stream)	1,2100	1.2160 4.0190	1.0160 2.0190				
	D6 (Ditch)	21.9820	4.0190 4.9820 9.3664 7.3840 1.2160 7.3100 1.9820	4.0190 1.9820	4.050 1.9820 1.1414 6.4150			
15m	R1 (Pond)	0.6052 64150	W3664	0.2248	101414			
Spray	R1 (Stream)	Q' 64150 m	6.4150		6.4150			
drift &	R2 (Stream)	Q 64150 Q 7.3840 Q 1.2160	6.4150 7.3840 12160	7 .3849	7.3840			
Runoff	R2 (Stream) R3 (Stream) R4 (Stream)	1.2169	^{''0'}	1.2160	O 1.2160			
		7.0000	₹ 7 <mark>4.0190</mark> **	4.0990 3.9820	4.0190			
20	D6 (Ditch)	4.0000 4.0000 5.820 0.4605 3.3190	1.9820 0.2477 3.3190 3.8530	7 9820 5 0.1439	1.9820 0.0828			
20m Spray	R1 (Pond) R1 (Stream)	0.4603 3.3190 3.830 0.6334 2.1070	22190		3.3190			
drift &	R2 (Stream)	3.8630	3.8530 P	3.3190	3.8530			
Runoff	R3 (Stream)	0,8334	0.0224 A	2 ,6334	0.6334			
	R4 (Stream)	2.1070	2.0070		2.1070			

R4 (Stream) 2 2.1070 2 2.2070

Table 9.2.5- 34: Summary of FOCUS Step 4 PECsed values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10 days int.); Entries marked with * result from single applications.

	Phosphonic acid PEC _{sed} [μg/kg] Nozzle Reduction							
Buffer Width & Type	Scenario	0%	Nozzle F	Reduction 75%	90%			
5m Spray drift	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	2.6850 15.500 10.200 13.000 3.3350 21.450	1.6190 \$3840 \$0.170 12.970 3.2490 21.440	6.1440 10.150 12.960 3.2040	1.0610			
10m Spray drift & Runoff	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	1.2970 8.8350 4.0890 5.4890 1.3440	5.1790 4.0740 24760 1.2780	1,0560 3,2510 4,0660 5,4690 1,0290	2.0290 4.0620 0 4650 1.2480			
15m Spray drift & Runoff	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	6.4600 4.0750 5.47700	4.0600 3.9310 4.0670 5.4200	5.5800 1.0350 2.5500 3.4660 1.2500 5.5790	5.550 1.0210 7.7530 4.0600 5.4630 1.2440 5.5780			
20m Spray drift & Runoff	D6 (Ditch) R1 (Pond)	10 130 730	2.7920 (2.190 (2.190)	2.1 160 2.8890 0 0,6620	1.0170 1.0910 2.1140 2.8870 0.6574 2.5910			

R4 (Stream)

S. R and D denote main entry route via spray drift, runoff or drainage respectively.

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Table 9.2.5- 35: Summary of FOCUS Step 4 PEC_{sw} values of fosetyl-Al (3×2.0 kg fosetyl-Al/ha, 10 ¢avs int.). Entries marked with * result from single applications.

	int.). Entries i	marked with * result			
		_Foset PEC _{sw}		J.	90% 90% 90%
Buffer			Nozzle	Reduction	. 5° 5°
Width & Type	Scenario	0%	50%	75%	
	D6 (Ditch)	S 20.760 *	S 10.380	* 5.1890	V S №2.0769 * 10°
5m	R1 (Pond) R1 (Stream)	S 1.4190 * S 18.290 * *	9.1450 °	* S 0.3730 5 S 4.5726	* \$\frac{1}{1.8290} \$\frac{1}{2}\$
Spray drift	R2 (Stream) R3 (Stream)	S 24.590 25.860 **	S 12.290 S 12.930	* \$\varphi 6.1470 3 * \$\varphi 6.9640 2	♥ S 2 .4590 2 *
<u>arrit</u>	R4 (Stream)	S 18.340 **	8 9.10	*\$\ S \ \\$\.5850	* S 1.8340 *
10m	D6 (Ditch) R1 (Pond)	S 7.5180 * S 0.28 3 *	S 39590 S 9.3906	S © 1.8800 1 * S 0.1976	* \$ \$ \$ \$ \$ \$ \$ \$ \$
Spray drift &	R1 (Stream) R2 (Stream)	S 66250 *	S 3.3129	* 5 1 5 5 6 0 5 1 5 5 6 0 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5	* S 0.6625 * 0.8906 *
Runoff	R3 (Stream)	\$ 9.3660 *	S 4.4330 0	* 2.3456 ·	* \$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	R4 (Stream) D6 (Ditch)	6.6440 * 7	S 3.3220 2 2.0400	* S 20210	S 20.6644 * 0.4085 *
15m	R1 (Pond)	S 40850 S 5.5291	8 0,2646	$S \mid 0.1380$	3 0.0654
Spray drift &	R1 (Stream) R2 (Stream)		S 1.8000 S 2.4200	* S 0.8998 1 * S 12400 0	* R 0.3854 S 0.4839 *
Runoff	R2 (Stream) R3 (Stream) R4 (Stream)	S \$0890	\$\frac{1.8050}{2.5440}	**************************************	* S 0.5089 * * S 0.3610 *
20	D6 (Ditch)	2.6370	S 21.3180 P	* 0.6593	* S 0.2637 *
20m Spray	R1 (Pont) R1 (Stream) Stream	S 2.3230 *	S 0.1965 1.1620	* S 0.0985 * S 9.5808 1	* S 0.0444 S 0.2323 *
drift & Runoff	R Stream	1 0 3 3 50 1 **\(\psi\)	S 0.6420	S 0.7809 3	* S 0.3124 * * S 0.3285 *
Runoii	Ra (Stream)	S 2.3300	S 1.1650	* S 0.5825	* S 0.2330 *
S, R and D	denote main entry route	via sprov drift, runoff	or drainage, re	spectively	
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	A CONTRACTOR OF THE CONTRACTOR				
Ű	R4 (Stream)  Genote main entry route				

Summary of FOCUS Step 4 PEC_{sed} values of fosetyl-Al (3×2.0 kg fosetyl-Al/ha, 10 days Table 9.2.5- 36: int.). Entries marked with * result from single applications.

	Fosetyl-Al PEC _{sed} [µg/kg]  Nozzle Reduction							
Buffer Width &		0%	Nozzle 50%	Reduction 75%	90%			
Гуре	Scenario							
	D6 (Ditch)	3.0100	1.5050	0.7524	0.3040			
	R1 (Pond)	0.2278	Q155	0.0593	100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5   100276 5			
5m Enrove	R1 (Stream) R2 (Stream)	0.5296 * 0.5217 *	0.2648   *	0.1324   **	9.0639 0.0527 *			
Spray drift	R3 (Stream)	0.9660 *	0.4830	0.1304	0.036			
di i i i	R4 (Stream)	0.5484 *	0.4830	0.130 *	0.0548			
	D6 (Ditch)	1.0760	0.5380	0.7690	0 1076			
10m	R1 (Pond)	0.1238	0.0625	\$\\\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	0.0141			
Spray	R1 (Stream)	0.1918	0.0625 0.0959 0.0945	90.04800 *	<i>\$</i> 0.0284			
drift &	R2 (Stream)	0.1890 *	<b>6</b> 1 <b>6</b> 0945	0.0472   *	0189			
Runoff	R3 (Stream)	0,3499	7 0.1750 *	0.0875	0.0350 *			
	R4 (Stream)	<b>Ø</b> .1986 ~ *	0.0993	Ø.0497. <b>\$*</b>	0.0499   *			
	D6 (Ditch)	0.5801	92901	0.14 <b>50</b>	0.0580			
<mark>15m</mark>	R1 (Pond)	0.58017 0.0838 2 0.1042	<b>9.0425</b>	0.0220	§*			
Spray	R1 (Stream)	Q 1042	0.052		″ № 0.0278 *			
drift &	R2 (Stream)	Q	0.0813	5   <b>*</b>   <b>*</b>   <b>*</b>   <b>*</b>   <b>*</b>	0.0103   *			
Runoff	R3 (Stream)		J 0.0931 J	0.0475	O   0.0190   *			
		0.10/9	9.0540 [*] *	0.0270	0.0108 *			
30	D6 (Ditch)	0.0617	0.1862	931	0.0372			
20m	R1 (Pond)	0.061	0.0312	0.0159	0.0070			
Spray	R1 (Stream)	0.0613 0.0673 * 0.0663	0 0336 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.0168	0.0146   *			
drift & Runoff	R2 (Stream)	0,1227	0.064	0.0\$\\66   * \( \alpha \) \( \dot{\phi} \) \( \dot{\phi} \) \( \dot{\phi} \)	0.0008 *			
Xulloll	R4 (Stream)	0.0697	0.0034	0.0174 *	0.0123			

**Table 9.2.5-37:** Summary of FOCUS Step 4 PECsw values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10 days int.); Entries marked with * result from single applications.

	Phosphonic acid PEC _{sw} [μg/L]  Nozzle Reduction							
Buffer Width & Type	Scenario	0%	Nozzle Reduction  0%  50%  75%					
5m Spray drift	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	6.5870 1.8930 5.2960 6.0510 9.1210 8.3750	3.2680 \$0750 \$2960 6.0510 9.1200 8.3750	0.6729 5.2960 6.0510 9.1200	90% 1.9360 9.4565 9.1200 9.1200 8.3750			
10m Spray drift & Runoff	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	2 3280	0.53\$\$ 0.53\$\$ 2.8940 7.7290	2.3940 2.7290 4.0260	0.1955 2.3940 2.7290 4.1260			
15m Spray drift & Runoff	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	1.9350 1.9350 0.6872 2.3940 2.7290	49350 9/3936 2.3940 2.7090	0.2494 0.2494 2.5940 0.77290 4.1260 3.7450	1.9350 1.9350 1.765 2.3940 2.7290 4.1260 3.7450			
20m Spray drift & Runoff	D6 (Ditch)	© 139350 A	1.9350 0.2614 1.2510	0.1556 4.12540 1.4250 2.1560	1.9350 0.0964 1.2510 1.4250 2.1560 1.9490			

R4 (Stream)

S. R and D denote main entry route via spray drifft, runoff or drainage respectively.

Table 9.2.5- 38: Summary of FOCUS Step 4 PEC_{sed} values of phosphonic acid (3×2.0 kg fosetyl-Al/ha, 10 days int.); Entries marked with * result from single applications.

	Phosphonic acid PEC _{sed} [μg/kg]  Suffer Nozzle Reduction							
Buffer Width &		0%	Nozzle F 50%	Reduction 75%	90% 57			
5m Spray drift	Scenario D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	24.110 16.830 8.2420 4.9240 25.510	13.320 60.790 8.2170 4.8980 25.380 13.290	7.3620 7.6210 8.2030 4.8840 25.310 13.30	3,3,760 5,6450			
10m Spray drift & Runoff	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	9 9960	5.5300 5.7910 2.640 2.640 7.3690 4.4210	3.9710 3.8910 2.1580 1.9240 7.9400 «	2.6990 2.4550 09170 7.3220			
15m Spray drift & Runoff	D6 (Ditch) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	7.0640 7.0640 2.1650 7.3240 4.4070	3.0.730 4.5600 2.1590 1.9020 7.9420	3.2480 2.3560 7.3260 7.3260 4.4690	0.8730 2.4330 2.1540 1.9160 7.3160 4.4060			
20m Spray drift & Runoff	D6 (Ditch)	5.0850 0.9987 0.9974 2.6420 2.2410	2.2550 3.5260 0.9944 0.9929 3.6190 2.2350	2.0970 2.0970 0.9932 0.9905 2.6080	0.7148 1.4540 0.9909 0.9889 3.6010 2.2300			

S, R and D denote main entry route via spray drift, runoff or drainage. Espectively.

## CP 9.3 Fate and behavior in air

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

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

# CP 9.4 Estimation of concentrations for other routes of exposure

There are no other routes of exposure if the product is used according to good agricultural practice. Therefore no dirther estimations are considered necessary.