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Version history

Date (yyyy-mm-dd)	Data points containing amendments or additions ¹ and brief description	Document identifier and version number
2015-10-05 2016-09-01	Dossier update according to "Request for additional information on the supplementary dossier submitted by Bayer CropScience for the approval renewal of the active substance Fosetyl (2015-5865)" by	
It is suggested th SANCO/10180/2	New PEC calculations have been added to chapters to showing revisions and vessions are vessions are vessions and vessions are vessions and vessions are vessions are vessions and vessions are vessions are vessions and vessions are vessions	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 (ILPFAC) 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 metabolites of footyl-Al. In this summary, a single name or a single code is used for each metabolite. A full list containing structural formula, various names, short forms, codes and occurrences of metabolites is provided as Document N3.

As some pragmatic approach, "phosphonic 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 ovironment (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 presonated form are strong acids that spontaneously form salts in contact with soil or natural water with any suitable counter ion present (i.e. sodium, porassium, 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 behaviour.

The formulation Fosety-alumnium WG 80 Fosety-Al WG 80) is a water dispersible granule (WG) formulation containing 800 g/kg of fosety-Al. This formulation is registered throughout Europe on a wide range of crops under rade names such as aliette Fosetyl-Al WG 80 was already a representative formulation of BCS for the Anaex I inclusion of fosetyl under Directive 91/414/EEC.

Use patterns considered in this risk assessment

Table 9-1: Intended application pattern

Сгор	Timing of application (range)	Number of applications	Application interval [days]	Maximum label rate (range) [kg prod./ha]	Maximum application rate, individual treatment (ranges) [kg a.s./ha] Fosetyl (21
Orchards (Pome fruits)	BBCH 55-85	1-3	7- 10	4.5	\$7° \$7.6 \$7° \$7

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 covironmental rate studies.

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

Compound / Codes	Chemical Structure Considered for
	PECST PEST PEST PEST PEST PEST PEST PEST PEST
Phosphonic acid	PÉCsoil PECgw PECsed

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	Fosetyl NI, phosphonic acid
Surface water	
Sediment	Phosphornic acid
	Fosetyl-Al phosphonic acid
Air	Posetyl AM

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 Non-extractable Residues

Carpon dioxide

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 Doctonent 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 Lasimeter 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 to 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}

Modelling input parameters for foretyl-aluminium (fosetyl-Al) and its metaboli **Table 9.1.3-1:**

Fosetyl-Al and metabolite Value used for modelling Fosetyl-Al Molar mass [g/mol] 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) Maximum occurrence [%] Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%] Molar mass correction Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%] Molecular mass correction		
Fosetyl-Al Molar mass [g/mol] 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}) Maximum occurrence [%] Maximum occurrence [%] Molar mass correction Molecular mass correction DT_{50} [days] (worst-case DT_{50}) Maximum occurrence [%] Molecular mass correction DT_{50} [days] (worst-case DT_{50})	Endpoint	Fosetyl-Al and metabolite V
Molar mass [g/mol] 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) Maximum occurrence [%] Maximum occurrence [%] Molecular mass correction		
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) Maximum occurrence [%] Molecular mass correction Molecular mass correction Molecular mass correction Molecular mass correction	Fosetyl-Al	
Maximum occurrence [%] Molecular mass correction Phosphonic acid Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%] Molecular mass correction	Molar mass [g/mol]	1
Molecular mass correction Phosphonic acid Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%] Molecular mass correction Molecular mass correction Molecular mass correction	DT ₅₀ [days] (worst-case DT ₅₀)	
Molecular mass correction Phosphonic acid Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%] Molecular mass correction Molecular mass correction Molecular mass correction	Maximum occurrence [%]	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Molecular mass correction	
Molar mass [g/mol] DT ₅₀ [days] (worst-case DT ₅₀) Maximum occurrence [%] Molecular mass correction Molecular mass correction	Phosphonic acid	
Maximum occurrence [%] Molecular mass correction DT ₅₀ [days] (worst-case DT ₅₀) Molecular mass correction DT ₅₀ [days] (worst-case DT ₅₀) DT ₅₀ [Molar mass [g/mol]	\$ \$\times 2 \times 246.5 \times 2
Maximum occurrence [%]		
	Maximum occurrence [%]	100 (3 equivalents) O
	Molecular mass correction	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

PEC_{soil} modelling approach

The predicted engronmental concentrations in soil (PEQ_{loil}) for the active substance fosetylaluminium (fosetyl-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 7.5 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 FQCUS groundwater guidance paper (FOCUS 2014) for pome fruits (see Table 9.2.4-2).

Derivation of kinetic modelling input values for fosetal-Al and its major degradation product is presented in Document MCA, Section 7152, a summary of modelling input parameters is given in the report KCP 9.1.3/01.

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.

KCP 9.1.3/02 ; 2015; M-532544-01-1 Report:

Fosetyl-Al (FEA) and metabolite: PECsoil EUR - Use in pome fruits and grape 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 Groundwater Assessments, Version 2.2

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

Methods and Materials:

The predicted environmental concentrations in soil (PFC soil) of fosetyl-aluminium (fosetyl-Al) and its major soil degradation product phosphonic avid were calculated based on a first tier approach using a Microsoft® Excel spreadsheet. M

The use of fosetyl-Al in pome floits was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Detailed application af of PEC soil were compiled in Table 9.1.3-2.

Application pattern used for PECsoil calculations of Josety Al Table 9.1.3- 2:

Crop	FOCUS crop Sused for Interception	Rate for Season [g.a.s./ha]	App Interval [days]	Nication (Plant () Inferception ()	BBCH	Amount reaching the soil per application [g a.s./ha]
Pome fruits	Apples	3 × 3600	\$ 7 £	©× 60_ ©	55-85	3 × 1440.00

Substance Specific Parameters:

PEC_{soil} calculations were based on the DT₅₀ of 0.1 days (worst case of laboratory studies) for the parent compound to setyl-Al. Further compound specific input parameters are summarized below.

Input parameters for PEC soil for fosety Al and its major degradation product

Compound			ax occurence in soil	Molar mass [g/mol]	Molar mass corr. factor
Fosetyl-Al		Q.10° Q	100	354.14	1
Phosphonic acid	T.	2,70 ° _ C	100	246	0.6946
Thospholic actions of the second seco					

Findings:

The maximum PEC_{soil} values for fosetyl-Al and its major degradation product are summarised 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 TwA_{soil} values for the individual uses are listed in Table 9.1.3- 6 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

The sections	Fosetyl-Al	Phospho	onic acid 🦠
Use pattern	PECsoil	[mg/kg]	
Pome fruits, 3×3600 g a.s./ha	£,920	3.9	30 📞

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	L øsetyl Al	P	hosphonicacid	1
Use Pattern	PEC	[mg/kg]	Q _1	[mg/kg]	0
Pome fruits	plateau 🖣	Ø.001 C		2,532	
3×3600 g a.s./ha	otal 🖔	1.920	W.	6.462 ©	å

Table 9.1.3- 6: PEC_{soil} of fosetQ-Al and its degradation product for the use in pome fruits (3×3600 g a.s./ha, 3×60% interception 7 d app interval)

	~~ <u>~</u>	*~ <i>/</i>	408	ــالم	~~~	
	Substance	4, 3	Fosetyl	-Ål	Phosp	Ponic acid
	Days after m	aximum		PEC _{soil}	[mg/kg]	
	Initial 💍	<i>∞</i> 0 €	9 .920		% 3	.930 🐧
	Ğ Ö	₩1 _@ ,	0.002		O'Ă	×920 ×
	Short-term	3 2 3	~ <0.000	1 <i>(</i>)	3	.910
"[√ √ 0,00	1 🏖	<i>∞</i> 3	.890
	8	% 7	/	1	3 3	.% 60
1	Ş ,0	0 14 📞	©<0.0 0	Ì	@3	.791
4		b 2 <u>.</u> ₹	× <0.590	1	ॐ 3	.724
	Long-term	208 ⁹	© <u>~0.00</u>	1,	3	.657
	, Ø , Ď	[∞] 42 ~ \	€0.00	∜ ,	© 3	.528
		₩ 500	<0.00	1 🔬	3	.457
	4) 100v	~ < O C O O O	1 🔊	3	.040

Table 9.1.3-7: Table

	Substance		Fosetyl-Al	Phosphonic acid
	Days after m	ayimum 🗸	TWAsoil	[mg/kg]
, ,	Initi ®	0	O* -	-
			0.277	3.925
~ ~	Short-term	₩ 2 _@ ,	0.138	3.920
		, 46	0.069	3.910
	A 79	7"	0.040	3.895
79 D	A ~	14	0.020	3.860
		21	0.013	3.826
	Longsterm	28	0.010	3.792
	~	42	0.007	3.726
		50	0.006	3.688
		100	0.003	3.466

Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium WG 80

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 9.1.3/03
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
none
note
edicted environmental conference in the second se 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 spreadspeet.

The use of fosetyl-Al in pome fruit was assessed according to Good Agingultural Practive (GAP) under European cropping conditions. Detailed application data used for simulation of PECs in Table 9.1.3-8.

Table 9.1.3-8: Application pattern used for PEC soil calculations of fosety

Individual Crop	FOCUS crop used for Season Interception g a.s./ha	Application Plant Interception	BBCN Stage	Amount reaching sthe soil per application
Pome fruits	Apples 3 3 3600 7	3 × 60 ×	55-865°	3 × 1440.00

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

Table 9,453- 9: List of the grain parameters as proposed by RMS for the risk assessment

			¥
Parameter		Imput A	Remarks
	Fos	Phosphonic acid	(Concerning phosphonic acid
_@	TO S FOR		parameters)
DT ₅₀ soil (days)		0.1	Maximum estimated DT ₅₀ for
4			phosphonic acid was > 1000 days.
			1000 days is taken as a worst-case
			reasonable assumption ^{a)} .
Maximum occurr	ence in soil (%)	- 100 100 100 100 100 100 100 100 100 10	-
a) W/ 20	15·M 52720√1 01 &-√20€	Conlegge refer to Document MCA	Section 7 chapter CA 71212

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

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 use assessed

TT	Fosetyl-Al	Phosph	onic acid «
Use pattern	PEC _{soil}	mg/kg]	
Pome fruits, 3×3600 g a.s./ha	4 ,920	₈ ○ ⁸ 3.	982

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

	Ĉ	Posety	KAI A	Phosphoni	ie acid
Use Pattern	PEC	mg	kg Q		
Pome fruits 3×3600 g a.s./ha	plateau »,	♥ .00 1.92		√ °43.83 17.81	

Table 9.1.3- 12: PEC_{soil} of fosetQ-Al and its metabolite for the use in point fruits (3×3600 g a.s./ha, 3×60% interception, 7 days/30p. interval)

		· 🔊		4///	. الم	~~~	
	Substance	<u> </u>	Ş	osetyl-	Al »	Phos	onic acid
	Days after n	n <mark>aximum</mark>		∠ P	EC _{soil}	mg/kg	
	Initial 🤝	> & <mark>0</mark>	6 7	₽ .920	O _x	&	3.982 S
			, ,	0.002	¥ () <u> </u>	3/979 ([*])
	Short-term	3 2 V		<0.001	"Ø		3.976
»,		* * *	\	≤0 ≈001	2	Z Z	3.974
		% 7		≈ 0.001		Q	3.962
4		○ <u>14</u> %		<0.00	Ő	<u> </u>	3.943
	y T 4 1.			<0.001	(T)	<u> </u>	3.924
	Long-term	<u> </u>	^ 6	\$0.001	Ş.		3.905 3.867
ŀ		× 50 0		<0.00%	<i>y</i> %	S/)	3.846
		100		<00001			3.715
"L		X SOL		-09001	\sim		5.715

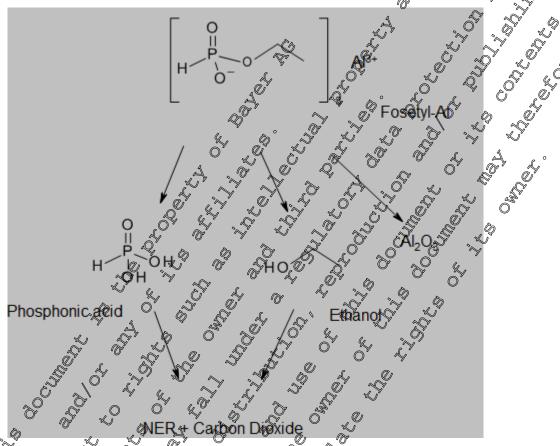
Table 9.1.3-13 TyAsoil of fosety-Al and its pretabolite for the use in pome fruits (3×3600 g a.s./ha, 3×60% interception, Zdays app. interval)

Substance	'	Fosetyl-Al	Phosphonic acid
Days after m	easimum C	TWAsoil	[mg/kg]
Initia C	0	,O* -	
Short-term Congaterm		√ 0.277	3.980
Short-team	√y 2	0.138	3.979
Longsterm	40	0.069	3.976
	<u>7</u>	0.040	3.972
	14	0.020	3.962
		0.013	3.953
Longsterm Longsterm	28	0.010	3.943
A OA	<mark>42</mark>	0.007	3.924
Ö	<u>50</u>	0.006	3.913
	100	0.003	3.847

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 behaviour in water and sediment please refer to Document MCA, Section 7.2

CP 9.2.1 Acrobic mineralisation in surface water

For information on aerobic mineralisation in corface water studies please refer to Document MCA, Section 7.22.2.

CP 2.2.2 Water/sediment study

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

CP 9.2.3 Irradiated water/sediment study

For information on irradiated 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

Endpoints for PECgw

Modelling input parameters for fosety Valuminium (Losetyl-Al) and its metabolites **Table 9.2.4- 1:**

Endpoint	Fosetyl-Al and metabolite
-	Value used for modelling V
Fosetyl-Al	
Molar mass [g/mol]	\$\times_0^\circ_5^354\f4\circ_5^\circ_5^\circ_5\circ_5^\circ_5^\circ_5\circ_5^\circ_5\
Aqueous solubility [mg/L]	O 20°C 0 2
Vapour pressure [Pa]	△ 0° 0′ 1.0×kQ (25°C) 0° 0° 0°
DT ₅₀ soil [days]	
K _{oc} [L/kg]	
K _{om} [L/kg]	8 47 5 5 9058 C S S
1/n	
Phosphonic acid	
Molar mass [g/mol]	
Aqueous solubility [mg/L]	110 at 20,00
Vapour pressure [Pa]	0 1.0×10 ⁻⁷ (25,°C) ~ 0
DT ₅₀ soil [days]	
K _{oc} [L/kg]	
K _f [L/kg]	\$\frac{1}{2} \frac{1}{2} \frac
1/n	

PECow modelling approach

The predicted environmental concentrations in groundwater (PECa) for the active substance fosetylaluminists (fosetyl-Al) were calculated using the simulation models PEARL, PELMO and MACRO following the recommendations of the FOCUS working group on groundwater scenarios.

The leaching calculations were an over 26 years, approposed 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 thin year, respectively. The fost six years are a 'warm up' period; only the last 20 years were considered for the assessment of the eaching 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 takenas the relevant PEC values. 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 everylower due to dilution in the groundwater layer.

According to FQCUS, the calculations were conducted based on mean soil half-lives, referenced to standard temperature and proisture conditions. Crop interception will reduce the amount of a compound reaching the soft 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).

Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium $WG\ 80$

Table 9.2.4- 2: FOCUS groundwater crop interception values

Crop		Crop stage Interception [%]				
BBCH	BBCH 0-9	BBCH 10-69	BBCH 71-75	BBCH 76-89		
Apples	without leaves	flowering	early fruit of development	2 44		
	50	60	65 ® ^v	65		

Derivation of kinetic modelling input values is precented in Document MCA Section 7.10 a summary of modelling input parameters is given in the report KCP 92.4.1/01.

CP 9.2.4.1 Calculation of concentrations in groundwater

Predicted environmental concentrations in groundwater (PEC_{gw}) of fosety aluminium and its major degradation product

For fosetyl-aluminium, the major degradation productohosphonic-wid was considered

Report: KCP 9.2.4. 103 (2015; M-532542-01)

Title: Fosetyl-Af (FEA) and metabolite PECgy FOCL PEARL, PEIOMO, MXCRO EUR -

Use in pame fruits and papes in Europe

Report No.: EnSa- 5-0553 Document No.: M-532542-61-1

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

Document), 91,88/VI/97 Pev.8: COCUS 1997, Soil persistence models and EU registration; FOCUS, 2014: Seneric Quidance for Year 1 FOCUS Groundwater

Assessments, Version 2.2

Methods and Materials:

Predicted environmental concentrations of the active substance fosetyl-aluminium (fosetyl-Al) and its major son degradation product in groundwater becharge (PEO_{gw}) were calculated for the use in Europe, using the simulation models FOCUS PEARL 4.4.4 (Leistra et al. 2001), FOCUS PELMO 5.5.3 (Jene 1998; Klein 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 pome fruits 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- Application pattern used for PECgw calculations of fosetyl-Al

		, «Ö	Apj	olication		Amount reaching
Individua C	FOCUS crops used for	Rate per Season	Interval	Plant Interception	BBCH Stage	the soil per application
	Interception	[g a.s./ha]	[days]	[%]		[g a.s./ha]
R. S	43					

Further input parameters for PECgw modelling of fosetyl-Al and its degradation product are summarised in Table 9.2.4.1-2.

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

Parameter	Unit	Fosetyl-Al	Phosphonic acid
Common			4
Molar Mass	[g/mol]	354.1	₹ 82.0
Solubility	[mg/L]	10000	\$\int 110000 \$\infty\$
Vapour Pressure	[Pa]	1₩00E-07	1.00E-07
Freundlich Exponent		<u>√</u> 1.000 √	1.000
Plant Uptake Factor		0.0	0.00
Walker Exponent		0.7	
PEARL Parameters	Q Q		
Substance Code	&	S FEAN X	r″ «Jii3PO3©
DT_{50}	[days🏳 "		83.86° (
Molar Activ. Energy	[k̪̪ˠʌmol] @	Ø5.4 Q	∫ 65,4 O
Kom	[m/L/g]	0.1	
K_{f}	mL/g)		×39.1.©
PELMO Parameters			
Substance Code	~ ~	× «AS	
Rate Constant Q"	[1/day]	6.93140	90827
Q ₁₀ &	Ĭ Õ		2.580
K _{oc}	[mL/g]	10° AQ.1	- O O
Degradation fraction from		3 FFA -> H3₽O3	
(FOCUS PEARL &OMAC	CRO)		
Degradation rate from →	tő 🔊	6,9314720 Active S	Substance - XI
(FOCUS PELMO) Q	<u> </u>	©5.0082710 A1 [*] ≯ <	B⁄R/CO2 🎺 🤍

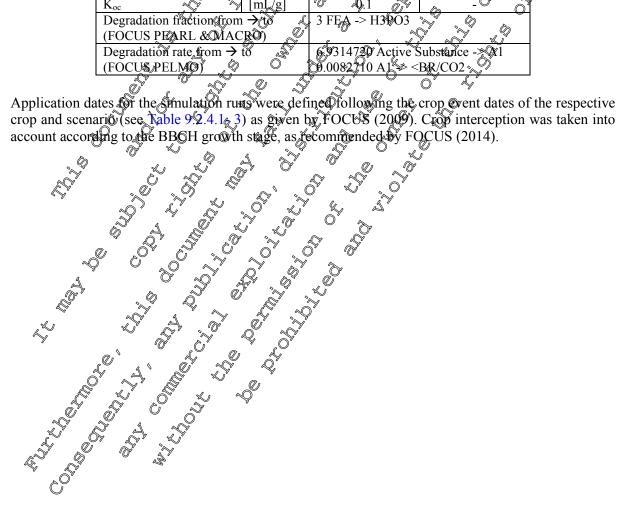


Table 9.2.4.1-3: First application dates and related information for fosetyl-Al as used for the simulation runs; offset is relevant only for relative application dates, two sets of data are provided for crops with two seasons

are	e provided for crops with t	wo seasons	oncation dates, two sets of data
	Individual crop	Pome fruits	
	Repeat Interval for App.	Evory Voor	
_	Events	Every rear	
	Application Technique	Spray	
	Absolute / Relative to	Abșolute	
	G .	1st App. Date	
	Scenario	(Julian day)	
	Scenario Scenario	(Julian day) Offset 21 May (141) 08 May (128) 23 May (128) - 08 May (128) - 08 May (128) - 13 Jun (164)	The second dates, two sets of data The second
	\$ _ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		
Ö			

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.

Pome fruits, 3×3600 g a.s./ha

Table 9.2.4.1- 4:

FOCUS PEARL PEC 3×3600 g a.s./ha, 3×60 Scenario				
3×3600 g a.s./ha, 3×60	% results of fosetyl- % interception, 7 d	Al and its metaboapp. interval)	Write in µg/L µ	Pome Praits,
Scenario	Fosetyl-A	Phosphonic acid		
	<0.000 ×	<0.001 © 001		
	©001	<0.000		
	- 0.001°	<0.001		
	<0.001	0.001		
	\$\frac{1}{2} \frac{1}{2} \frac	<0.001 <0.001 <0.001		
FOCUS PELM® PE@ 3×3600 g a s #ba 3×40	gw results of fosetyl	-ACP and its metals	olite in µg/L*(Pome fruits,
FOCUS PELMO PEG 3×3600 g a.s./ha, 3×60 Scenario	Fesetyl-Ab	Phosphonic acid		
	< 0.001	/ (<0.001 V	S	

Table 9.2.4.1- 5:

		. "0" 4,	@.\Y .
	Scenario 4	Føsetyl-AD	Phosphonic acid
0	- <i>(</i> a		
,		<0.001 <0.001 <0.000 <0.000	© 0.001
			0.00M
		₹ 0.0015	<0.001 <0.001 <0.001 <0.001 <0.001
(<0.000	<0.001 <0.001 <0.001
1		\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	° \$0.001€
	0	Ø.001 &	<0.001
	\(\begin{array}{c} \\ \langle \\ \langle \\ \langle \\ \elline \\ \ellin \\ \ell \ellin \\ \ellin \\ \ellin \\ \ellin \\ \ellin \\ \ellin \\ \ell	0.001 0.001 0.001 0.001	O <0.001
4		(°°° < 0.00°°° = °	⊘ _≪@ ∙001
j		<0.001	0.001

FOCUS MAGRO PEC gw regults of Cosetyl-Al and its metabolite in µg/L (Pome fruits, **Table 9.2.4.1-6:** 3600 g a Tha, 3760% interception, 7 dapp. interval)

	Scenario		Ensetyl A	Phosphonic acid
)		W'	<0.001	< 0.001

Conclusion:

There are no concerns for groundwater from 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 WG 80

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 9.2.4.1/04 : 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:** no

Methods and Materials:

m (fosetyl-Al) Predicted environmental concentrations of the active substance fosetyl-aluminum (fosetyl-Al) and its major soil metabolite phosphonic acid in groundwater recharge (PECW) were calculated for the use in Europe, using the simulation models FOCUS PRARL 4.4.4 (Leistra et al. 2001), FOCUS PELMO 5.5.3 (Jene 1998; Klein 1995, 1999, 2019), and POCUS MACRO 5.5.4 (Jarxis 1994, Jarvis and Larsbo 2012). PEC_{gw} were examated 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, 20146).

The use of fosetyl-Al in pome fourts was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Detailed application data used foo simulation of PECgw were compiled in Table 9.2.4.1-7.

Table 9.2.4.1-7: Application pattern used for PECgy calculations of fosetyle Al

Individual Crop	FOCUS crop Assed for Intercoption	Kate per Season	Application Plan Larerval Intercept [days]	t BKCH Stage	Amount reaching the soil per application [g a.s./ha]
Pome fruits	Apples	3×3600	<u> </u>	0 © 55-85	3 × 1440.00

On 2016-07-27 the RMS France requested additional PEC calculations during the approval renewal process of the active substance fosetyl-Af Amafeamated data from three applicants should be used for fosetyl-Al and its metabolite. The input parameters proposed by ANSES are summarised in table 9.2.4.11-8. process of the active substance fosetyl-Al-Amalgamated data from three applicants should be used for

Table 9.2.4.1- 8: List of the	e main param	eters as proposed b	y RMS for the risk assessment				
Parameter		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 (-)	•	1	8 - F				
K _{foc} (L/kg)	0.1	ŀ					
$K_f(L/kg)$	•	15.9 f)	Geometric mean of all acceptable values derived from baton studies (1).				
I/n	I	0.69	Arithmetic mean of all acceptable values derived from batch studies derived				
Crop uptake factor	0	0	Conservative assumption				
(a); 2015; M-532341-0 (b); [1999; M-18] (CA 7.1.2.1.2	01-1; BCS; plea 84316-01-1; B	CS: please refer to	ACA, Section 7, chapter 7,1,2,1,2 Occument MCA, Section 7, chapter				
; 2015; S15-00506; d); 2008; B30701; IS	Fosetyl-Al 🎉 SK Biosciences	sk Force					
t) In PEC calculations Kean		ught I Of CC/					
In PEC _{gw} calculations, K _f and Frendlich exponent should be implemented in the different soil horizons by manually editing the input files?							
Remark notifier: ANSE\$	proposes to	use \$3.7 days a	s geometric mean DV of all acceptable				
			133/7 days is presomably based on using				
1000 days for the			ase opthe DFOP model (; 2015; M-				
			by the FAIRITE task force (2015; 2015;				
S15-00506) based on the H	S miðdel. Sin	ce both soils show	a simular 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 unreliable by BCS. Despite this point, the PEC calculations were carried out with the input parameters proposed by

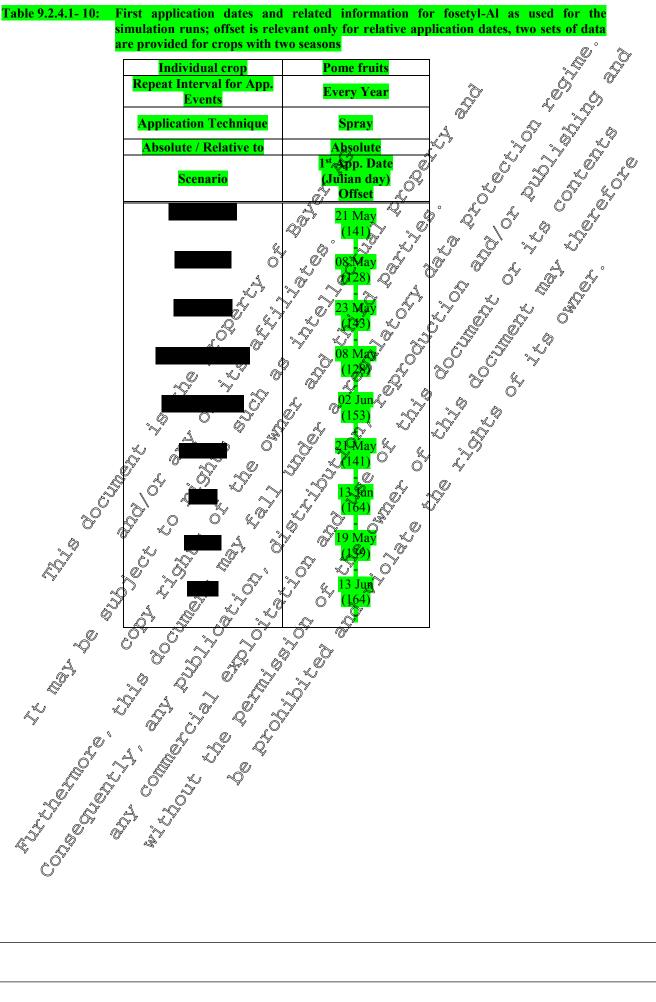
Further input parameters for REC_{EW} prodelling of fosetyl-Al and its metabolite are summarised in Table 9.2.4.1-3.

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

-	· parameters for	105ctji 711 and	its degradation produc	
Parameter	Unit	Fosetyl-Al	Phosphonic	acid
Common			Phosphonic 246.0 a) 110000 20 20 20 20 20 20 20 20 20 20 20 20	
Molar mass	(g/mol)	354.14	246.0 a)	Ţ,
Solubility	(mg/L)	110000	110000	
at temp.	(°C)	20	20	
Vapour pressure	(Pa)	1.00E-07	1000E-07	
at temp.	(°C)	<mark>25</mark>	<u> 25</u>	
Freundlich exponent	(-)	1.000	ياني <mark>0.690 ا</mark> لاي	
Plant uptake factor	(-)	0.0	الم	
Walker exponent	(-)	0.7	Q, 0.7	
PEARL parameters		- Y	25 0.690 0.7 0.7 0.8 0.7 0.8 0.8 133.7 05.4 0.0 15.9 0.0 0.7	
Substance code	(-)	FEA	Q • H3RO3	, ' Č , Ø' .
DT_{50}	(days)	Ø <mark>0.1</mark>	, <i>o</i> j <mark>13Q.7</mark> o ^j	b Ö
Molar activ. energy	(days) (kJ/mol) (mL/	⁸ 65.4	\$5.4 \$	
K _{om}		0 958		~ . ~
$K_{\rm f}$	(mL/g)		o' 5 15.90 4	/ 🐴
PELMO parameters	(**) (**) (**) (**)			
Substance code	///day	AS, I S		
Rate constant	(-)	693147	O″ <u>~_</u>	
Q_{10}	(ngL/g)	2.58 × V		
Koc	(1/day), (1/	y 0.1 V		45
MACRO parameters		S OFE	133.7 55.4 15.9 15.9 2.88	****
Substance code Exponent moisture Exponent temperature		FE OF TE		3PO3
Exponent moisture		0.4		0 <mark>.49</mark>
Exponent temperature	⟨ ○ (1/K)	/	48 9 9 0	.0948
a) 3 × 82.0 g/mol, one mole of fosety		noles of phospho	onic acid	
Degradation fraction from → to ← (-) (FOCUS PEARL)	FEAN H	3 1 003: 1 💍		
(-) (FOCUS PEARL)				
Degradation rate from to	Sctive Sh	bstance -> A1: 6	5.931₽718 [™]	
(1/day) (FOCUS PESMO)	⁹ ≪A1 ≈ BR	/ ǩQ : 0.00 5 184	- "	
Conversion factor from to	FEA-> H	₃ ₽Ø ₃: 0. 69 4640;	<u> </u>	
(-) (FOCUS MARCO)		· . / 🔈 🔏		
a) Calculated as $ln(2)$ ODT 50 Formation	on fraction		% I	
b) Calculated as molar mass / molar mass	ass predecessor ×	formation	ion The second s	
		\$ 15 6	Y	

Application dates for the simulation runs were defined following the crop event dates of the respective crop and scenario (see Table 9 201-19) as given by BOCUS (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



Findings:

	0.2.4.1- 12 (PELMO), and	Table 9.2.4.1- 1	3 (MACRO).	olite in µg/L (Pome fruits,
	Scenario	Fosetyl-Al	Phosphonic acid	
		<0.001 <0.001 <0.004 <0.064 <0.001 <0.000 <0.000 <0.000 <0.0001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	olite in µg/L (Pome Fruits.)
Table 9.2.4.1- 12:	FOCUS PELMO PECgw 3×3600 g a.s./ha, 3×60%	results of fosetal interception, Tal	Al and its motab ys app. interval)	olice in µg/L (Pome fruits,
	Scenago Scenago	0 < 00001 × C	Phosphonic acid -0.001 -0.001 -0.0001 -0.0001	olice in µg/E (Pome fruits,

	Scenario 3	OF os	etyl-Al	Pho	sphonic	acid
00	Ď		9.001 0.001		<0.003 <0.001	
Ŋ			0.001 0.001 0.001		0.001 200.004 200.001	. J
7			0. 00 5 0. 00 1 0.001 _%		$\approx 60 \text{ A}$	
			0.001		* <0.0 0 /1	

Table 9.204.1-13: FOCUS MACRO PECgw results of fosetyl-Al and its metabolite in µg/L (Pome fruits, 3×3600 g/s.s./ha, 3×60% interception, 7 days app. interval)

		. 0	% n	X/	A
9	Scenago		Fosety	l-Al	Phosphonic acid
			° <mark>>0.00</mark>	01	< 0.001

Additional field tests

No additional field studies were performed due to low PEC_{gw} 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 in Document MCA, 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 foselyl-aluminium (fosetyl-Al) and its metabolic

Endpoint	Fosetyl-Al and metabolite
	l Varie lisea for modelling \ \(\lambda \lambda \ \lambda \ \ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \
Fosetyl-Al	354 9
Molecular weight [g/mol]	\$\tag{354}\tag{3}
Aqueous solubility [g/L]	A 10 at 20 °C
Vapour pressure [Pa]	(1.0×10 ^{-y} (25 ©) &
K _{oc} [L/kg]	1.10 (25 (25) (25) (25) (25) (25) (25) (25)
K _{om} [L/kg]	0.088
1/n	000 6 5 5
DT ₅₀ soil [days]	0.1
DT ₅₀ total system [days]	
DT ₅₀ water [days]	Lay (J. 93 M &
DT ₅₀ sediment [days]	1.5 01 1000 defauth 0
Wiaximiim occiirrence in Water/seaimeni	100%
Phosphonic acid Molecular weight [g/mol] Aqueous solubility (L)	
	© \$\sqrt{246} (Step 1, 2), 82 (Step 3, 4)
Aqueous solubility [2] L	110 at 20%C
Vapour pressure [Pa]	√ √ √ 1.00/10 ⁻⁷ (⊈3 °C)
DT ₅₀ soil [days O	83.8
DT ₅₀ soil [days0 K _d [L/kg]	♥ \$\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
$ \mathbf{K}_{oc} \mathbf{L}/\mathbf{kg} \mathcal{Q}$	782 (assumption: 5% OC in soil) a)
K II /km² C ~ ~	43/4 Cassumption: 9% OM in soil) b)
1/n **	
Marinaum accumand in acid	100%
DT ₅₀ total system days]	100%
DT ₅₀ total system days DT ₅₀ water [days] DT ₅₀ sediment [days] Maximum occurrence in water/sediment of	
DT ₅₀ sediment days	102
Maximum occurrence in water/sedment	102 100%
a) Using the V norometer included of W	resting the following abanges in the EOCLIC surface water

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 1-2).

Of content 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 Suropeoseparately 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 FOCUS 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 70.22 a summary of modelling input parameters is given in the report KCP 9.2.5/9.

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

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

Report: KCP 92.5/02 ,; 2055; M-52543-01-1

Title: Foselyl-Al (EA) and metabolite: RECsw, sed FOCO'S EUR - Use in pome fruits,

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

Report No.: PASa-15-0554

Document No.: M-532543-0 44

Guideline(s): FQCPS 2009, SANCO/10622/2005V. 2.0 FOCUS 2015, Generic guidance for

FOCUS surface water Scenarios version 1.4, May 2015

Guideline deviation(s): Jone GLP/GLE.

Methods and Materials:

Predicted environmental concentrations of the active substance fosetyl-aluminium (fosetyl-Al) and its metabolite phosphonic acid in surface water (PEC) and sediment (PEC_{sed}) were calculated for the use in Europe, employing the need 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/eosion or drain flow) were considered in those calculations.

The use of fosetyl-As in poine fruits was assessed 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				w ·
Individual Crop	used for interception	Rate per season [g a.s./ha]	BBCH stage	Interval [days]	Plant Interception	Season 7
Pome fruits	pome / stone fruit, late applns (fruit crops / late)	3 × 3600	55-85	10	full canopy (65%)	Mar May

For fosetyl-Al and its metabolite phosphonic acid, For US Step 3 and Step 4 values were calculated 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 parameters used for fosetyl-M and its metabolite.

Parameter

Parameter	Parameter	Unus	Parent S	Metabolite
Molar mass	Substance	64	Fosets 1-Al	Approsphologic Acid
Molar mass	Company code	(T)	LS 74783	AE 05 0099 (
Molar mass	SWASH code		TOTA ST SO	H3PØ3 **
Note 1000	General	0		~ ~
Water solubility (temp.) The state of the s	Molar mass	a©mol _	354.1¥	[82 U
Crop processes Coefficient for uptake by plant (SCF) Wash-off factor Sorption Koc KoM Freundlich exponent (Vn) Transformation DT 50 in soft temperature pF formation fraction in water temperature formation fraction in water DT 50 in seafment temperature formation fraction in water DT 50 in seafment temperature formation fraction in seafment days 1000 102 20 20 70 20 20 70 20 70 20 70 20 70 20 20 70 20 20 70 20 20 20 20 20 20 20 20 20 20 20 20 20		rng/L	11 0 000 (20 °C)	1100 0 0 (20 °C)
Wash-off factor Sorption Koc Kom Freundlich exponent (%) Transformation DT 50 in stol temperature pF formation fraction in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in sediment DT 50 in septiment temperature formation fraction in sediment DT 50 in septiment days days J 1000 20 20 20 30 DT 50 in septiment days J 1000 102 temperature formation fraction in sediment DT 50 yn canopy days J 100 100 Exponent for the effect of moisture PRZM and TOXSWA AValker exp.) MACRO (calterated value) J 0.49	Vapour pressure (temp.)	Pa 🛇	ME-07 (23° C) №	1E=07 (25 °C)
Wash-off factor Sorption Koc Kom Freundlich exponent (%) Transformation DT 50 in stol temperature pF formation fraction in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in sediment DT 50 in septiment temperature formation fraction in sediment DT 50 in septiment days days J 1000 20 20 20 30 DT 50 in septiment days J 1000 102 temperature formation fraction in sediment DT 50 yn canopy days J 100 100 Exponent for the effect of moisture PRZM and TOXSWA AValker exp.) MACRO (calterated value) J 0.49	Crop processes			
Freundlich exponent (%) Transformation DT 50 in soft temperature pF formation fraction in soil DT 50 in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in sediment DT 50 in sediment TRANSFORM CARD (calibrated value) TO 50 in sediment TO	Coefficient for uptake by plant (\$SCF)	- S		. "
Freundlich exponent (%) Transformation DT 50 in soft temperature pF formation fraction in soil DT 50 in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in sediment DT 50 in sediment TRANSFORM CARD (calibrated value) TO 50 in sediment TO	Wash-off factor	∯/m 🍣	1500	50
Freundlich exponent (%) Transformation DT 50 in soft temperature pF formation fraction in soil DT 50 in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in sediment DT 50 in sediment TRANSFORM CARD (calibrated value) TO 50 in sediment TO	Sorption 🍣 🂍 💆 🗸			
Freundlich exponent (%) Transformation DT 50 in soft temperature pF formation fraction in soil DT 50 in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in water temperature formation fraction in sediment DT 50 in sediment TRANSFORM CARD (calibrated value) TO 50 in sediment TO		mîl/g	0.1	
Transformation DT ₅₀ in solt temperature pF formation fraction in soil DT ₅₀ in water temperature temperature formation fraction in water Transformation days C 20 20 20 20 3 DT ₅₀ in water temperature formation fraction in water C 20 20 30 DT ₅₀ in segment temperature formation fraction in sediment DT ₅₀ on canopy days 1000 102 20 20 20 20 20 20 20 2		¢mL/g	0.00	
formation fraction in soil DT ₅₀ in water temperature formation fraction in water DT ₅₀ in sequent temperature temperature temperature temperature temperature temperature temperature temperature formation fraction in sediment DT ₅₀ on canopy days 1000 20 20 20 20 3 102 20 20 100 102 20 60 100 100 Exponent for the effect of moisture PRZM and TOXSWA Walker xp.) PRZM and TOXSWA Walker xp.) 0.7 0.7 0.7 0.49		- %		1
formation fraction in soil DT ₅₀ in water temperature formation fraction in water DT ₅₀ in sequent temperature temperature temperature temperature temperature temperature temperature temperature formation fraction in sediment DT ₅₀ on canopy days 1000 20 20 20 20 3 102 20 20 100 102 20 60 100 100 Exponent for the effect of moisture PRZM and TOXSWA Walker xp.) PRZM and TOXSWA Walker xp.) 0.7 0.7 0.7 0.49	Transformation 🗶 🛫 🤝			
formation fraction in soil DT ₅₀ in water temperature formation fraction in water DT ₅₀ in sequent temperature temperature temperature temperature temperature temperature temperature temperature formation fraction in sediment DT ₅₀ on canopy days 1000 20 20 20 20 3 102 20 20 100 102 20 60 100 100 Exponent for the effect of moisture PRZM and TOXSWA Walker xp.) PRZM and TOXSWA Walker xp.) 0.7 0.7 0.7 0.49	DT 50 in sail	days	0.1	
formation fraction in soil DT ₅₀ in water temperature formation fraction in water DT ₅₀ in sequent temperature temperature temperature temperature temperature temperature temperature temperature formation fraction in sediment DT ₅₀ on canopy days 1000 20 20 20 20 3 102 20 20 100 102 20 60 100 100 Exponent for the effect of moisture PRZM and TOXSWA Walker xp.) PRZM and TOXSWA Walker xp.) 0.7 0.7 0.7 0.49	temperature	SC S	20	
DT ₅₀ in water temperature of the effect of moisture PRZM and TOXSWA Walker xp.) DT ₅₀ in water temperature of the effect of moisture PRZM and TOXSWA Walker xp.) Advis 1000 102 20 20 102 20 20 102 102 102 10	pF P	log(cm)	18° ~ ~	
formation fraction in sediment DT ₅₀ on canopy day 10 Exponent for the effect of moisture PRZM and TO SWA Walker xp.) - 0.7 MACRO (calibrated value) - 0.49 0.49	Tormation traction in soil	-, W ~		
formation fraction in sediment DT ₅₀ on canopy day 10 Exponent for the effect of moisture PRZM and TO SWA Walker xp.) - 0.7 MACRO (calibrated value) - 0.49 0.49	DT_{50} in water	days		
formation fraction in sediment DT ₅₀ on canopy day 10 Exponent for the effect of moisture PRZM and TO SWA Walker xp.) - 0.7 MACRO (calibrated value) - 0.49 0.49	temperature	C N	$\left \frac{20}{2} \right ^{2}$	
formation fraction in sediment DT ₅₀ on canopy day 10 Exponent for the effect of moisture PRZM and TO SWA Walker xp.) - 0.7 MACRO (calibrated value) - 0.49 0.49	formation fraction in water		0	_
formation fraction in sediment DT ₅₀ on canopy day 10 Exponent for the effect of moisture PRZM and TO SWA Walker xp.) ACRO (calibrated value) - 0.49 0.49	DT ₅₀ in securitent	days	↓ 1000	
DTso on canopy days 10 10 Exponent for the effect of moisture PRZM and TOXSWA (Walker Exp.) - 0.7 0.7 MACRO (calibrated value) - 0.49 0.49	temperature		20	
Exponent for the effect of moisture PRZM and TO SWA Walker xp.) - 0.7 MACRO (calibrated value) - 0.49 0.49	formation fraction in sediment	V	10	
The Contract Value of	[2130 % Camep]	days	10	10
The Contract Value of	Exponent for the effect of moisture	\(\frac{1}{2}\)		
The Contract Value of	PRZM and TOXXWA (Walker xp.)] <u>~</u> \	0.7	
	MACRO (calibrated value)	7-	0.49	0.49
TOXSWA (molar activation energy) kJ/mol 65.4 65.4 65.4 MACRO (effect of temperature) 1/K 0.0948 2.58 2.58				
MACRO (effect of teroperature) 1/K 0.0948 0.0948 PRZM	TOXSWay (molar activation energy)	kJ/mol	65.4	65.4
PRZW (QW 2.58	MACRO (effect of temperature)	1/K		0.0948
	PRZM	-	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 FQCUS Step 3 calculations for the use in pome fruits

nuits			***	Q.	
PMT Name	PMT Name			No X	
DGR / PMT N	umber		DGR I MMT I		
Parameter					
FOCUS model	crop (crop gro	oup)	Pome/Stone, Fruit@	Late Applns (Fruit ex	ops / late)
Use pattern (si	ngle/seasonal a	ppln. rate)		int (3.6/0 kg a.s./ha)	
Appl. Method	(Run off CAM	, depth inc.) 🧃	Air Blast (2 -appln	fonar linear, 4 cm)	
PAT start dat		, K		, * A 6	
	to crop event	or absolute	absolute		
PAT window		Q. 4	74 days 141 days,	scepario specific (mi	n = A days
	PAT			PAT	~~ <i>(</i> ~
Drainage	Start,	Application	Runoff	Start, Interval	Application
Scenarios	Interval	Date J	Runoff Scenarios	(Julian Day)	Date
	(Julian Day)	<u> </u>	10° 45		O ·
D3	08-May, 141 °	l May	Rl	08~May, 1661	09 May
Ditch	(128)	May V	yond/Stream	(128)	13 Jun
	,,,	21 Jun			05 Jul
D4	23 Sun 11/0.		ROT ROT	08-Jul- 74	31 Jul
Pond/Stream	25 (174) O	277 Aug	System S	(189)	07 Aug
1 ona, stream		10 Sep @			14 Aug
\$					111148
	(O' 10)	, Ø A			
D5 💉	21-May 20	27 May	R3 ~	21-May, 124	01 Jun
Pond/stream	(146)	65 09 Tun 🤍	Stream .	O' (141)	16 Jun
*		Jul 💍			30 Jun
			, o o ~		
		\$ _ %		10.35 106	27.16
			(19-May, 126	27 May
, A			Stream	(139)	12 Jun 25 Jun
					25 Juli
		Q			
, W					
	_@ \		\$		
	S A &		9		
		4, 0			
		Q			
		Ď.			
	O' Z				
	9		Runoff Scenarios R1 Fond/Stream R3 Stream Stream		
Ğ					

Findings:

FOCUS Step 1 and 2:

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-Al (FOCUS Steps 1-2) **Table 9.2.5- 5:**

				. "		@ V	100
			F	osetyl-	Al (FEA)	∀ %	
		PEC	C 🦸		WA کے		WA Ø
	l a	, ma	x	7 (lays 🎾	21	days
Usage	Scenario 2002	sw	Se d	SW	Sed (SW (Sed Ø
		[µg/L]	μg/kg]	fug/L	Jμg/kg	[µg/L]	[µg/kg]
pome fruits DGR I / PMT I	Step 1	∘4166 ₽	3.600	2000	2.036	852.6	0,839
	Step 2		4		Q .	7	_
Pome / stone fruit, late applns	N-EU Multi 🖑	169.5		3 1.41	0.050	∕33.5% <u></u>	》0.0 2 €2°
3×3600g a.s./ha, 7d int.	S-EU-Multi	63.5	0∕.087_≰	81.41	0.050	33	0.022
full canopy	NÆU Single ^	√188. 7 ©	0.100	93,93	0,097	38.75	0.025
Spring (Mar May)	EU single	1887	Q,190	9 \$1.93	6 057 4	ॐ 8.75	OO.025

Summary of the maximum PEC and PECsed Falues phosphonic acid (FOCUS **Table 9.2.5- 6: Steps 1-2)**

	J,		.ſ	4	10 × 1	Phosph	onic acid)	
Usage pome fruits Pome / stone from, late and 3×3600g a.s. ha, 7d inf. full canopy Spring (Mar May)	R O PMT IV			P	EC S	*F	WA 👨 layy	T	WA days
Usaga **		o Ö		SW	Sed &	SW %	Sed	SW	Sed
Usage			Ŋ.	μg/Ll	 [μg/kgP	[μg/L]	[µg/kg]	[µg/L]	[μg/k
pome fruits	R D PMT TV	Step 1	, , , , , , , , , , , , , , , , , , ,	284	20 5 ¥5	2594	20064	2466	1921
Dama / stana frait lata		Step 2	[]	@	\$1501	200.6	1544	190.3	147
3×3600g a c/ha 7d in	opins S	Saeiim	iuig Sasi "	\$29.2 307.6	2180	277.1	2138	263.3	204
full canony		SEU M	mole	131©/	6908	90.11	683.4	86.18	652.
Spring (Mar - May)		S-EU Si	ngle	1371	©144	103.8	893.0	108.0	852.
Pome / stone from, late and 3×3600g a.s. ha, 7d int. full canopy. Spring (Mar May)		S-EU Si)					

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 pome fruits.

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.

Table 9.2.5-7: PEC_{sw} and PEC_{sed} values of fosetyl-Al in pome fruits (3x3600 g/ha – 7 day intervals for all calculated scenarios according to FOCUS SW Step 3

						N		~ ×
			Fosetyl-	Al	Ű	Y		OF COLUMN
				<u> </u>	T Ô			
		Entry	D#Ø	max		∆ 7 days√	TWA.) () () () () () () () () () (
	Scenario	route	PALC	max	N I W	a 7 days	M W A	2 Muays
	Scenario	Spray drift	Q			8		
		Runoff	SW C	Sed©	SW Hig/L	Sed (SW.	Sed
		Drainage	Jug/L]	[L-S-⊗-9]	Wall I	This val		«[MS/ 118]
	D3 (Ditch)		93.930	<i>₱,</i> 0890 <i>€</i>	19.810	4.9460	16.080	3.5740
	D4 (Pond)		4.9500	0.9342	3.3340	0.5138	2.3010	
	D4 (Stream)	S	94%40 4.9440	3.1780	3 6960	8,7967 4,932	1.2020	0.4307
M14:1 .	D5 (Pond)		1 × 4.9440 ×	0.8517	2,9990	0.822	2.3000	9 .6705
Multiple	D5 (Stream)		√ 102, 39 ° 4,4280	0.7465	5.4640		36090 ¢ √1.6640√	
applications.	R1 (Pond)	Q'S	72.520 ×	0.7465, ⁷ 2.30 9 0	2.9820	0.0156	0.710	0.5737
	R1 (Stream)		72.520 97.200 102.20	2.3090	20370	0.525 6	0.7183 1.4670	0.3290
	R2 (Stream)		97.2000	2,8120	P.4680 5.2620		3.3080	0.4329
	R3 (Stream)		72 2 5 72 2 5 72 3 5	4.4120 2.3740	3.2020 2.4470	1.5780 0:6249	3.3080 ②1.4220	1.2090
	R4 (Stream)		\$2.10 \$		22.830			0.4649
	D3 (Ditch)	2 %	\$2.10 \$5.9290		3.4020	74.7610 0.62 79)		2.6750
	D4 (Pond) 5	,	122@0	4.4530 ©		1.1(1,60	1.5670 1.6840	0.5042 0.6033
			132.60 5.9300			0.7206	1.8810	0.6033
Single	505 (St@am)		3.9300	5.5600	3.8340 7,8120		2.5050	0.3938
application	55 (St@am)		5 0256	3.3000	4.104		2.3030	0.8934
application.	R 10 Stream		00 274	2.3460°		0.7990	0.6199	0.7033
O'	PO (Stream)		13620	\$ 2 8900	2:0570	0.4092	0.6133	0.2219
, Ø	R2 (Sileaili)		Q13.20 (5 18/10	793730	1.6160	2.4580	0.2430
	R4 (Stream)		. 99 320	2 3750	¥ 6050	0.3753	0.5617	0.3739
n hold: highest Pl	FC value	4, 5	7 77.5 Ey	1 32JZ 130 C	11.0050	0.5755	0.5017	0.2010
n boid. nighest i	LGVY VAIDE			<u> </u>				
(N A &	Q' _\						
<i>@</i> .	* Q' ,\$							
				> .				
4	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~							
	à â	y OF		,				
	~~ ~~							
. &								
N. C.		`~` Q						
Q n	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		L.					
4			Q,					
Q'								
		L 4						
	, 0	J						
\bigcirc								
Single application. In bold: highest Plant of the state								

Table 9.2.5-8: PEC_{sw} and PEC_{sed} values of phosphonic acid in pome fruits (3x3600 g fosetyl-Al/ha - 7 day intervals) for all calculated scenarios according to FOCUS SW Step 3

			Phosphon	ic acid				
			PEC	C max	TWA	7 days	TWA⊱	2 days
	Scenario		SW [µg/L]	Sed [µg/kg]	SW [µg/L]	⇒Sed [μg/kg]	SWO [µg/L] »	Sed Jug/kg
	D3 (Ditch)		8.8450	7.\$\square{3}\square{5}30	2.9510	5 3680	Q1490C	3.6450
	D4 (Pond)		5.4980	£26.230	5.4860	26.190 🛭	5.3930	2 © 080 (,
	D4 (Stream)		5.6110 ₄ (0,\$726	0.86310	0.2063	P.5961
	D5 (Pond)		5.841	25.360	5.8190	25.360	5,6710	25.31%
Multiple	D5 (Stream)		8.9 %	2.5190	0.5585	1,3200	0.3433	0.9981
applications.	R1 (Pond)		<i>5</i> ¢4050	<i>©</i> 20.380℃	5. 346 0	20.370	₱5.1 75 0	20 /290
	R1 (Stream)		© 3720, [©]	£ 4.89 6 €	7/19	©2.747.6°	0.3533	<u>4</u> 2.0320 。
	R2 (Stream)	£	8.423	6.3800	Q.1700 (3.7720	© 201	2.94 %
	R3 (Stream)	, 4	10.240	2.8990		14910	0.4123 الم	1.1500
	R4 (Stream)		11,720	@10.169	2.4340	7/7200	7 1.5 7 70	63040
	D3 (Ditch)	Q (% .8060	5.2670	2 2870	3.3830	0.7687	2.0530
	D4 (Pond)		×3.1720	14) 90 /	9.1590	11.590	3 50720	11.180
	D4 (Stream)		7.8610	1.3980	× 0.3432	0 \$467	0.1142	0.3155
a: 1	D5 (Pond)		33490	\$12.5 50	3.3390	2.5500	3.2680	12.530
Single	D5 (Stream)	~ ~	11.640		6944	1.3550	03464	0.8708
application.	R1 (Pond)	y D	2.8140	9,9670	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	9.9620	2.7420 90.1715	9.9270
	R1 (Stream)		4.6030	2.1120	0.46 4 0.3419	12020		0.8728
	R2 (Stream)		2 3 1 3 0 0 G	∜1.87 40 √° 3.2.790		1 27400	0.1520	0.8688
	R3 (Stream)		94.350	/\/	0/8651 0/6256	1.3760	0.2888 0.3799	0.7951 1.4610
	R4 Stream	¥ 01	5.7100	3 CJ 830	©0.625€	1.60,10	0.5/99	1.4010

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.

Table 9.2.5-9: Summary of FOCUS Step 4 PECsw values of fosetyl-Al (3×3.6 kg a.s./ha, 7d/int.)
Entries marked with * result from single applications. Pome/stone from, later applications

				tyl-A		Q.	8	Q			
	T	1	PECsv		<u>[L]</u>	, © ¥)	e Q		-
Buffer					Nozzle K	Redu	tion S	, Ő	Y	à Ô	
Width & Type	Scenario		0% 🖔	Čĵ	° 5004. 0		Z\$9% (\$	\$ \$	/90%\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	2
JI	D3 (Ditch)	S	89.130*	S	4 € 570 * 0°	Sâ	- 'N	* /	(S	8.9 130	* 0
	D4 (Pond)	S	6,78,10 *	ďS ,	Ø3.3900 €		1.6950	* C	S	Ø.6781	*
	D4 (Stream)	S	103.50	S^	× 51.7 5 0 *		\$2 9 .870	* ,	S	10.350	*
	D5 (Pond)	S	Ø6.7820*		3,3910) S	€1.696 ¢	*		0.6	*
5m	D5 (Stream)	SÉ	R 11 K 80 *	ÇS	₹ 5.890	S	27.990	*	ZS	11.180	
Spray	R1 (Pond)	8	0.700	0	-3.30guy		1.6940 1.460 26.580	*\$*	S	4 % ∦U.U / /U[*
drift	R1 (Stream)	\$	37.830	SĈ	38.900		9.460		S [°] ≈		*
	R2 (Stream)	S	√106.3 © *	S	532150 *	S	26.580	* (ψS ⊃S	10.630	
		S "	7 11 80 * 7 5 20 * \$	S	\$3.890 \$\vec{\vartheta}{38.760}\vec{\vartheta}{\vec{\vartheta}}	SO	27.950 19380	*)S S	11.180	
	R4 (Stream) D3 (Ditch)	OS	29.830		19,920 * *		19:880 29:9580	**	S	7.7520 3.9830	
	D4 (Datell)	S	3.761	S. B	19980 *	yS S	0.940	*	S		*
	D4 (Pond) D5 (Ponds)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	46.250		\$3 120 €	S _V	(-)/	*	S	4.6250	
10m	D5 (Pond)	~S	3\$\psi_620 \\ \psi_9	S	1.8810*		0.9404	*	S		*
Spray	D5 (Stream)	Ó,	× 9.950 *	\S\O^2	24.970 * 4	S	@\2.490		S	4.9950	*
drift &	R1 (Pond)	S		ŢŠ.	1 3 ₹790 *©	$\widetilde{S}_{\mathscr{A}}$		*	S	0.3758	
Runoff		S	3 4. 280 * «	S	17.390	S	8.6940	*	S	3.4780	
	R2 (Stream) &	S S	47.500 **	S &	[> 23.7 ፴ [* .	, &	11.880	*	S	4.7500	*
\ \ \	R3 (Stream)	<i>(2)</i> C	4 9.95 0	S	24980 * 7	S	12.490	*	S	4.9950	*
	R4 (Stream) S	S	34.640 *	&S	*\\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	S	8.6600	*	S	3.4640	*
K,	D3 (Ditch) D4 (Pord)	S S	20 10 *	$^{\circ}$ S	10.060	S	5.0280		S	2.0110	
	D4 (Pond) / 4/	S	2.4030 <i>*</i>	S.		S	0.6007		S	0.2403	
	D4 (Stream) 4 D5 (Pond) Q	'S	₹23.350 *	SO	12680 *	S	5.8380		S	2.3350	
15m	D5 (Pond) Q " S"	S S	2.4030 *	ÇS	2020 *	S	0.6008		S	0.2403	
Spray	D (Stream)	S	25920	S	12.610 *	S	6.3050		S	2.5220	*
drift &	D4 (Pond) D4 (Stream) D5 (Pond) D5 (Stream) R1 (Pond) R1 (Stream) R2 (Stream)	7 8	3 .4010 5 ″	S	1.2010 *	S	0.6003		S	0.2401	
Runoff	R1 (Stream) S R2 (Stream) Q	S	22 60 1 * 5	(S)	8.7800 * 11.990 *	S S	4.3900 5.9960		S S	1.7560 2.3980	
	R2 (Stream)	3	25.200	S	12.610 *	S	6.3050		S	2.5220	
₁ <	R4 (Stream)	S	7 490	S	8.7450 *	S	4.3730		S	1.7490	
~~		~	12.299*	S	6.1450 *	S	3.0730		S		*
	D4 Pond)		1.7010*	S	0.8555	S	0.4277		S	l I	*
	DA (Stream)		14.270 *	S	7.1360 *	S	3.5680		S	1.4270	*
20m	AD5 (Propd)	, S	≈Q1.7110 *	S	0.8556 *	S	0.4278		S	0.1711	
Spray ©	D5 (Stream) D	S	15.410 *	S	7.7070 *	S	3.8530		S	1.5410	*
drift & S Runoff	D3 (Datch) D4 (Pond) D5 (Stream) D5 (Stream) R1 (Stream) D2 (Stream)	S	1.7100 *	S	0.8549 *	S	0.4274		S	0.1710	*
Runoft	P(Streom)	S	10.730 *	S	5.3660 *	S	2.6830	*	S	1.0730	*
	gitz (Stieaili)	S	14.660 *	S	7.3290 *	S	3.6650	*	S	1.4660	*
	R3 (Stream)	S	15.410 *	S	7.7070 *	S	3.8540		S	1.5410	
Ü	R4 (Stream)	S	10.690 *	S	5.3450 *	S	2.6720	*	S	1.0690	*

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

Table 9.2.5-10: Summary of FOCUS Step 4 PEC_{sed} values of fosetyl-Al (3×3.6 kg a.s./ha, 7d int.); Entries marked with * result from single applications. Pome/stone fruit, late applications

ario Ditch) Pond) Stream) Pond) Stream) Stream) Stream) Stream) Stream) Stream) Ditch) Pond) Stream)			* * * * * *	tyl-A [µg/l	50% 2796 20.534 1.738 0.486 2.170 0.465 0.90	0 * 1 0 * 9 0 * 0 *	educi	0.26 0.86 0.24	88 35 50 *		0.5593 0.1068 0.3475 0.0974	
Oitch) Pond) Stream) Pond) Stream) Pond) Stream) Stream) Stream) Stream) Stream) Oitch) Pond)		5.5930 1.0680 3.4750 0.9739 4.3400 0.9313 1.8310 2.2560 4.2800	* * * * * * * * * * * * * * * * * * * *		Noz 50% ©796 ©0.534 1.738 0.486 2.170 0.465 0.90	0 * 1 0 * 9 0 * 0 *		1.39 0.26 0.86 0.24 1.08	71 88** 350 50 *		90% 90,5593 90.1068 0.34% 0.0974 0.4340	
Oitch) Pond) Stream) Pond) Stream) Pond) Stream) Stream) Stream) Stream) Stream) Oitch) Pond)		5.5930 1.0680 3.4750 0.9739 4.3400 0.9313 1.831@ 2.2560 4.2800	* * * * * * * * * * * * * * * * * * * *		50% ©796 ©0.534 1.738 0.486 2.170 0.46% 0.90	0 * 1 0 * 9 0 * 0 *		1.39 0.26 0.86 0.24 1.08	71 88** 350 50 *		90% 90,5593 90.1068 0.34% 0.0974 0.4340	
Oitch) Pond) Stream) Pond) Stream) Pond) Stream) Stream) Stream) Stream) Stream) Oitch) Pond)		5.5930 1.0680 3.4750 0.9739 4.3400 0.9313 1.831@ 2.2560 4.2800	* * * * * * * * * * * * * * * * * * * *		©796 ©0.534 1.738 0.486 2.170 0.465	1 0 * 9 * 0 *		0.26 0.86 0.24 0.1.08	71 88** 350 50 *		0.5593 0.1068 0.3475 0.0974	(V) * \(\(\) \
Pond) Stream) Pond) Stream) Pond) Stream) Stream) Stream) Stream) Stream) Ditch) Pond)		1.0680 3.4750 0.9739 4.3400 0.9313 1.8310 2.2560 4.2800	* * * * * * * * * * * * * * * * * * * *		0.534 1.738 0.486 2.170 0.465 0.915	1 0 * 9 * 0 *		0.26 0.86 0.24 0.24	71 88** 350 50 *		0.1068 0.3475 0.0974 .0.4340	(V) * \(\(\) \
Stream) Pond) Stream) Pond) Stream) Stream) Stream) Stream) Stream) Ottch) Pond)		3.4750 0.9739 4.3400 0.9313 1.831@ 2.256@ 4.2800	* * * * * * * * * * * * * * * * * * * *		1.738 0.486 2.170 0.465 0.915	0 * (7 9 * (7 0 * (7)		0.86 0.24 1.08	88 35 50 *		0.3475 0.0974 0.4340	* (
Pond) Stream) Stream) Stream) Stream) Stream) Stream) Ottch)		0.9739 4.3400 0.9313 1.831@ 2.25@ 4.2800	* *Q * *		0.486 2.170 0.465 0.905	9 0 7*		0.24 0.28	350 50*	Ý	0,0974 0,4340	
Stream) Pond) Stream) Stream) Stream) Stream) Stream) Oitch) Pond)		4.3400 0.9313 1.831@ 2.256@ 4.2800	* * * * *		2.170 0.465 0.905	0 *** 7**		1.08	5 0 *	4	0@974 _0.4340	
Pond) Stream) Stream) Stream) Stream) Ottch) Pond)		0.9313 1.831@ 2.256@ 4.2800 14.8720	****		0.465 0.905	7*			5/	D	0.4340	1.4
Stream) Stream) Stream) Stream) Ditch) Pond)		1.831@ 2.256@ 4.2800 14.8720	*	ŽĮ	° 0.945		°~	0.23	30 × \			
Stream) Stream) Stream) Ditch) Pond)	Ø.	2.2560 4.2800 14.8720	*		0.9 0 5	ካ ተ ላ		700 T		, 5	0.093	4
Stream) Stream) Ditch) Pond)		4.2800 1×8720	1 1	(7) n		/ ^ _ ~	Ų"	≪ 0.45	, AL D	°^	0.1831	
Stream) Ditch) Pond)	, O	14.87 20	*	1 1	1 28	0 ***	, >	©0.56	369 *	2,	032256	* .
Oitch)	40.		. ~ (4.	~ I	2 .140	00	, (1.07	00 *	O _x	20 °.4280	*
Pond)	40.	¥ 1000			×0.93×	7 ľ	A	037	06 4,		®0.19 0 2	
Pond) Stream)	40.	エ・サンスじ	*	. W	1,.2\$0) \ \ \	Ø.62	480*	X)	0.2	*
Stream)		0.586¥	ľ	Z	2 93	1 🗸	Ó	50.14			0.0586	;
Pond)	4	1. 5§3 0	* %	7	Ø.776	5 0		0,38	83 * <u>*</u>		, @ .1553	*
		0.5344	Po (2	. 0.26₹	⊉		Q\$\frac{1}{2}		[*]	1K. /	
Stream)	¥ (P.9390	3		0.969	6 * 4		% 0.48	480*		0.1939	*
Stream) Pond) Stream)	% Y	0.5165	*	F	6 ,258		æ.	0.12	*		0.0517	
Stream)	Q.	~ (V	L		0.422							
Stream)	. 💜	മാന്നവ	"W"				Ç"	0.25	20			
		9136	*	4			Ĭ.	W 3	4			
	Ø _D	$0.87 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$		»	° 0436	8 🖳	an and	0.21	9)			
			*_\$	7			O _X					
	% 4	® 3573			. .		0					
Tream) O		0 7841	/ *			الام	/ *	$\bigcirc 0.19$	60 *			
ond)	&	0.3257		\$ '	© 162		K					
Stream)		- //	*				On.					
Pond)				Ô	0.165	0 * 3	Ű					
Stream	*			~			۲					
Stream		0.5089	*									
Stream)		0 9657	*	Q ₁								
Stroam)		Ø 4332		Ô								
Atch)		0.7719	*	~								
Pond O	. Ö	0.72150			-@n″122	5						
Stream) . O		0.4792	*		©.122.							
Pond)	y <u>5</u>	g. 1752 N 2234		W)	0.237							
Stream®		0.2233	* 。	W	0.111	2 *					0.0223	*
Ponda		0.3250	*~0	Y	0.27	5 *		0.11	88 *		0.0335	*
Stream)	~" _~	\$2525			0.117	3 *						
Stream)	" 4	y.232‰ ศ 311∩	¥		0.120	5 *		0.00	78 *			
ktream)	Q	0.5962	*		0.135	1 *		0.07	75 *		0.0511	*
Stream)		0.5502			0.275	5		0.11	36		0.0350	,
	Stream)	Stream) Stream Oitch Ood Oond Ostream Oond Ostream Ost	Stream) Stream One One One One One One One On	Stream) Stream) Stream) Ondo Ondo Ondo Ondo Ondo Stream) Ondo Ondo Ondo Ondo Ondo Ondo Ondo Ondo	Stream) Stream Ond Ond Ond Ond Ond Ond Ond On	Stream) Stream Ona Ona Ona Ona Ona Ona Ona O	Stream) Stream O.8723 O.6309 O.6309 O.6309 O.7841 * O.963 * O.6309 O.7841 * O.9791 O.7840 * O.6309 O.7841 * O.9921 * O.6309 O.7840 * O.7840 * O.6309 O.7841 * O.9921 * O.620 O.7840 * O.7840 * O.6309 O.7841 * O.9921 * O.620 O.7840 * O.7840 * O.6309 O.7840 * O.7840 * O.9921 O	Stream) Stream) Stream) Ondo Ondo Ondo Ondo Ondo Ondo Ondo Ondo	Stream) Stream) Stream) Ono80	Stream) Stream) Stream) Ottoh	Stream) Stream) Stream) Ottoh	Stream) Stream) Stream) Stream) O.5040 * O.5040 * O.2520 * O.1913 O.8723 O.8723 O.8723 O.885 O.885 O.885 O.885 O.885 O.885 O.9863 * O.2191 O.8885 O.885 O.88

Table 9.2.5-11: Summary of FOCUS Step 4 PEC_{sw} values of phosphonic acid (3×3.6 kg fosetyl-Al/ha, 7d int.); Entries marked with * result from single applications - Pome/stone fruit, late applications

	applications		Phosn	honic	acid						<u>') </u>
				sw [μg/							0
Buffer			120	,s,,, [h-8/		le Redu	uction &			4 .4	Ö
Width & Type	Scenario		0%		50%		45%			, 90%	A C
	D3 (Ditch)		6.0610		30300		1.5150	×	Ű I	~0,6061	Ş
	D4 (Pond)		6.2870		3 .1440		1.5720		1	Ş0.91 3 4	
	D4 (Stream)		6.1360 *	4	3.0680	* 0	2.8450	Ű		^{)*} 2.8 4\$ 0	Q (
	D5 (Pond)		6.6600	1.40°	3.3970		. 1.7650	P	<i>*</i>	0,7866	Ŵ
5m	D5 (Stream)		9.0820 *		4.5420	**	2.2710	* #	*	2.2060	8
Spray	R1 (Pond)		6.1700	%	3.1230		1,6000		, x	J 0.6861	
drift	R1 (Stream)		8.3720		8. 322 0	***	₹8 .3720	Ŏ,	°~>	8.3 7/2 0	
	R2 (Stream)		8.42 30		8.42 30		®8.4236		L	<u>84</u> 230	0
	R3 (Stream)		11,200 *	7	\$5.4230 \$5.6000	® ,	2.8000	* ()"	2 .4370	Y
	R4 (Stream)		1 4.720 €	7	×11.720	į	10.720	L n		[©] 11.7 2 0	
	D3 (Ditch)		Z.8240		1,4420	O _X	7 7.7060	\[\nage \]	l E	0.2824	
	D4 (Pond)	4	2 3.4500		1 7250	W)	1.03			0.7609	
	D4 (Stream)		2.8450		2.8450		2,89 50	400) } }	, ② .8450	
10m	D5 (Pond)	Z Z	3.7150	7	. 1.92/400		190290		%	$\gtrsim 0.5739$	
Spray	D5 (Stream) R1 (Pond) R1 (Stream)		A.0590	F	2.2000		[⊘ 2.20 6 @)	&	2.2060	
drift &	R1 (Pond)	°/-	3.3760				0.8668		o l	0.3651	
Runoff	iti (Sircuiii)	&	3.6730	,	_₹ 3.613 6	/ °×	₹ 3.6130			3.6130	
	R2 (Stream) 📞 🧔	O"	\$ \$8000		3.8000		3,8000	S		3.8000	
	R3 (Stream)		5.0040		2 50 020	*	∠J1.25 † Q	*		1.0970	
	R4 (Stream)	Q	0 5.1740	())	5 .1740	*	5.1740			5.1740	
	D3 (Ditch)		1,4000	\$	₩ 0.7001					0.1400	
	D4 (Possi)	(D)	2.1030		1.1440/0	4,	@.8580			0.6885	
	D4 (Stream)	l n	2.8450		2:\$450	@	\$\times 2.8450			2.8450	
15m					1.2250	Zy	0.6798			0.5504	
Spray	DS (Stream)		2.2060		[©] 2.20 ⊚					2.2060	
drift &	R1 (Pond)	?	£2.069 6	0	1.0500		0.5403			0.2345	
Runoff 💸	R1 (Stream)	Į.	Ø 3.6130		3.6130	Ŋ	3.6130			3.6130	
	R2 (Stream)	-//	3.8000	P	3.8000) ?.	3.8000			3.8000	
	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	4)	258270	," &	1.2630	*	1.0970			1.0970	
	Ter (Sugarri)	Ž.	8.17400		51740		5.1740			5.1740	
	D3 (Bitch)		0.8196 *	Q	Ø A098	*	0.2049			0.0820	
	D47(Pond)O	°~	1.420		© .9631		0.7692			0.6530	
20	DA (Stream)	Ŋ.	2.8450 4.6310		× 2.8450		2.8450			2.8450	
20m	DA (Stream) D5 (Pond) D5 (Stream) R1 (Pond)	P (7.63190		0.8824		0.5766			0.5389	
Spray	D5 (Stream)	_	2.2060 1.4140 .^				2.2060			2.2060	
drift &	RI (Pond		1 44 1 40 °	y	0.7145		0.3649			0.1551	
Rungf	RI (Stream)	* }	2.855U		1.8550		1.8550			1.8550	
,	R2 (Stream) "O" O	0	1.9850		1.9850	*	1.9850			1.9850	
	R3 (Stream)		2.6800		0.7722 2.6800		0.5720 2.6800			0.5720 2.6800	
	D4(Pond) D4 (Stream) D5 (Pond) D5 (Stream) R1 (Pond) R2 (Stream) R3 (Stream) R4 (Stream))	1.4,440 2.8550 1.9850 1.5,440 * 2.6800		2.0000		2.0000			2.0000	

Table 9.2.5- 12: Summary of FOCUS Step 4 PECsed values of phosphonic acid (3×3.6 kg fosetyl-Al/ha, 7d int.); Entries marked with * result from single applications - Pome/stone fruit, late applications

			Phosph	onic (neid						
			PECsec								4
Buffer			1 L Cset	i [MS/ i		e Reduc	tion S				Ş,
Width & Type	Scenario		0%		50%		45%			⁷ 90%	(
	D3 (Ditch)		4.9700		2 4850		1.2420		W"	4970	Ş
	D4 (Pond)		29.910		§ 15.340		8.1820		,	\$4.08 2 0	r I
	D4 (Stream)		1.1740	4	1.1500		1.1370	(J	Õ,	^{J*} 1.1 30 0	(
	D5 (Pond)		28.830	1	15.010		。8.1140)	. [4 0 350	(C
5m	D5 (Stream)		2.3140	6 J	1.2890	**	0.7.767	. (2	0.7767	
Spray	R1 (Pond)		23.260	1	11.790		6,0580		*	رِي 2.61 %	
drift	R1 (Stream)		4.8750	Ò	4.8350	, Y	√4.8150	%	°~	4.8 63 0	
	R2 (Stream)		6.372 © °		6.35 60		© 6.3499)	7	4	6 13440	0
	R3 (Stream)		2.5580 * 4) I	Ø .4860	Z , ~	1.4610)"	@ .4450	
	R4 (Stream)		19 /150 >		¥10.1 20		16.110	L 1		🥄 10.1 0 0	
	D3 (Ditch)		2 .3160	Z	1.1580	, O	, Ø.5790	y		0.2916 2.9360	,
	D4 (Pond)		16.750		8,8710		5.0549	1]		2.9360	
	D4 (Stream)		1.1/80	7	Ž.1370		1,1510 50150 0.7767 3.2750	\$	77	🎤 🖣 .1270	
10m	D5 (Pond)	Q' /	16.360	8	, 8.7 % 500 1		5 Ø150	Õ	%	$\frac{8}{7}$ 3.2030	
Spray	D5 (Stream)	, K	7.1800	F	0.7767		0 0.7767		L	0.7767	
drift &	D5 (Stream) R1 (Pond) R1 (Stream)		12.720	10	6 ,4210				0,	1.3840	
Runoff	R1 (Stream)		1.7890	}	_{@v} 1.7710₩		1.0610	Ö		1.7560	
	R2 (Stream)		201690 V	a.	2.1620		2,71580	Kıĭ I		2.1560	
		'	1.1436		0.6977	<i>z</i> ,	∠0.59 5 9			0.5889	
	R4 (Stream)	- 49 - 47	3.27\80	Ö'	3.2540) 	3.2490			3.2340	
	D3 (Ditch)		1480	ĺ	₩0.5741°		0. \$ 871			0.1148	
	D4 (Ports)		0.580	,~Q`	5.8750	4	3.6640			2.3970	
1.5	D4 (Stream)	4	1.1360		1,310	#	1.1280			1.1260	
15m	D5 Pond	\bigcirc	10.440 0.4767	J [*]	5.8380	»	3.7420			2.8080 0.7767	
Spray drift &	DS (Stream) R1 (Pond)	L I	0.7767	A 70	₩0.77 6 3° 3. <u>9</u> 630	W KJ	0.7767 2.0440			0.7767	
Runoff	D1 (Stream)		7700	.0	3.9030 4.7610	_ Or	1.7570			1.7540	
Kulloll	R1 (Stream)		2.1680	Ş	2.1580	2	2.1560			2.1550	
	R3 (Stream)	W	2.020 00075	l Co	, 0.59 .5 8		0.5900			0.5865	
	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) D3 (Bitch) D4 (Stream)	\$ ×	8.25400°		3.2420		3.2360			3.2320	
	D3 (Bitch)		0.6692	~	Ø 346		0.1673			0.0669	
	D4%(Pond)O		7.6030		% 4600		2.9990			2.1340	
	DA (Stream)			*	7 1.1280		1.1270			1.1260	
20m 🚄	DA (Stream) D5 (Pond) D5 (Stream) R1 (Pond)		1.71320 77.545 ©		4.4010		3.2490			2.6160	
Spray Grift &	D5 (Stream)	Ø"	0.7767		0.7767		0.7767			0.7767	
drift &	R1 (Pond)		5.1270)"	2.6940		1.3780			0.5887	
Runoff⊌	R1 (Stream)	\\ \operatorum \ \(\phi \)	0.7767 5.4270 9.8788		0.8734		0.8707			0.8691	
~	R2 (Stream)		Y.0630		1.0610		1.0600			1.0590	
	R3 (Stream)		0.3537		0.3061		0.3027			0.3007	
	R4 (Stream)		0.3537 * 1.6020		1.5950		1.5920			1.5890	
	D5 (Stream) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	<i>)</i> ~									

Document MCP – Section 9: Fate and behaviour in the environment Fosetyl-aluminium WG 80

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- 14).

KCP 9.2.5/03 : 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
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 seducent (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 principally a combination of spray drift and runoff/erosion or drain flow) were considered in these calculations.

The use of fosetyl-Al in pome fruits was assessed according to the Good Agricultural Practice GAP) in Europe. Detailed application parameters are presented in Yable 2.5- 65.

General and FOCUS specific data on the use pattern of fosety)-Al in Europe (for Table 9.2.5- 13: FOCUS Step 3 & 2) 🖔

Individual Crop	FOCUS crop used for season linterception [g as/ha] Application Plant Interval Int	Season
Pome fruits	pome stone fruit sate apfulns struit crops / 3 × 3600 555-85	Mar May

For fosetylal and its metabolite Phosphonic acid, FOCUS Step 3 and Step 4 values were calculated in addition to FOCUS Step I and Step 2 Values.

additional sety Al. Amalgamate input parameter.

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

faximum occurrence in soil (%) faximum occurrence in water (hold) faxing faximum occurrence in water (hold) faximum occurrence in water (hold) faxing faximum occurrence in water	' <mark>arameter</mark>	l li	<mark>nput</mark>	Remarks
Aximum occurrence in soil (%) Interpretation of all acceptable of the properties of		Fosetyl-Al		(Concerning phosphonic acid parameters)
daximum occurrence in soil (%) faximum occurrence in water (based on the studies of the faximum occurrence in water (based on the based on the slow phase of the DFOP model (water occurrence) faximum occurrence in water (based on the based on the slow phase of the DFOP model (water occurrence) faximum occurrence in water (based on the based on the slow phase of the DFOP model (water occurrence) faximum occurrence in water (based on the based on the slow phase of the DFOP model (water occurrence) faximum occurrence in the slow phase of the DFOP model (water occurrence) faximum occurrence in the slow phase occurrence in the slow phas	OT ₅₀ soil (days)	0.1	133.7	Geometricomean of all acceptable (2)
Tso water/sed system (days) (STEP 1) 3 1000 1000 1000 1000 1000 1000 1000	Maximum occurrence in soil (%)		100	- 5 S
Top uptake factor Top uptake fa	Maximum occurrence in water (%)	_		
Top uptake factor Top uptake fa		3	V -	
Top uptake factor Top uptake fa		3		
Top uptake factor 15.9 Geometric mean of all acceptable values defived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values derived from batch studies in a company of all acceptable values for the company of a company			(a) 1000	
rop uptake factor ; 2015; M-532341-01-1; BCS; please refer to Document MCA, Section 7, chapter CA-7, 1, 2,		0.1		
rop uptake factor ; 2015; M-532341-01-1; BCS; please refer to Document MCA. Section 7, chapter CA.7,1.2.1.2 ; 1999; M-184316-01-0; BCS; please forer to Document MCA. Section 7, chapter CA.7,1.2.1.2 ; 2015; S15-00506; Foseto Al Task Force ; 2008; B30701; ISK Biosciences Europe S.A. ; 2007; GAB-014/7-13; Fosetyl-Al Task Force lues for calculation of PEC in groundwater. The value of 133.7 days is presumably based on using 100 days for the soil based on the slow phase of the DFOP model (120, 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the AIRITH task force (120, 2015; 5-00506) based on the MS model. Since both soils show a similar pattern, the HS model is more propriate for soil in this light, instead of a very conservative estimation of 1000 days	Lf (L/Kg)		15.9	
conservative assumption 2015; M-532341-01-1; BCS; please refer to Document MCA, Section 7, chapter CA-7.1.2.1.2 1999; M-184316-01-0 BCS; please refer to Document MCA, Section 7, chapter CA-7.1.2.1.2 2015; S15-00506; Fosety Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2007; GAB-014/7-13; Posetyl-Al Task Force 2007; GAB-014/7-13; Posetyl-Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2007; GAB-014/7-13; Posetyl-Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2007; GAB-014/7-13; Posetyl-Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2007; GAB-014/7-13; Posetyl-Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2007; GAB-014/7-13; Posetyl-Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2007; GAB-014/7-13; Posetyl-Al Task Force 2008; B30701; ISK Biosciences Europe S.A. 2008; B30701; B30701	<mark>/n</mark>	10	0.69	
; 2015; M-532341-01-1; BCS; please refer to Document MCA. Section 7, chapter CA. J. 1.2.1.2 ; 1999; M-184316-01-0 BCS please refer to Document MCA. Section 7, chapter CA. J. 1.2.1.2 ; 2015; S15-00506; Foset Al Task Force ; 2008; B30701; ISK Biosciences Europe S.A. ; 2007; GAB-014/7-13; Fosetyl-Al Task Force lues for calculation of PEC in groundwater. The value of 1357 days is presumably based on using do days for the solve based on the slow phase of the DFOP model (12015; M-2341-01-1), and 532 days for the LOFA soil submitted by the AIRITE task force (12015; S-00506) based on the HS model since both soils show a similar pattern, the HS model is more propriate for soil in this light, instead of a very conservative estimation of 1000 days	Crop untake factor			
; 1999; M-184316-01-0 BCS please refer to Document MCA, Section 7, chapter CA 7.1.2.1.2 ; 2015; S15-00506; Fosety Al Task Force ; 2008; B30701; ISK Biosciences Europe S.A. ; 2007; GAB-014/7-13; Fosetyl-Al Task Force emark notifier: ANSES proposes to use 133.7 days as geometric mean \$\text{D}_{50}\$ of all acceptable lues for calculation of PEC in groundwater. The value of 135.7 days is presumably based on using 000 days for the sold submitted by the FAIRITE task force (\$\text{LOF}\$A soil submitted by the FAIRITE task force (\$\text{LOF}\$); 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRITE task force (\$\text{LOF}\$); 2015; 5-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for soil in this light, instead of a very conservative estimation of 1000 days	· 2015· M 522241 01 1· BCS·	please refer to	o Decument MC	A Spotion T chapter CA 7 1 2 1 2
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1357 days for the LOFA, instead of a very conservative estimation of 1000 days	; 1999; M-184316-01 _z	D BCS pleas	e fe fer to Docum	nent MCA, Section 7, chapter
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1357 days for the LOFA, instead of a very conservative estimation of 1000 days	CA 7.1.2.1.2			
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1357 days for the LOFA, instead of a very conservative estimation of 1000 days	; 2015; S15-00506; Fosets A	l Task Force		
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1357 days for the LOFA, instead of a very conservative estimation of 1000 days	; 2008; B30701; ISK Bioscier	nces Europé S	A. S	
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1357 days for the LOFA, instead of a very conservative estimation of 1000 days	; 2007; GAB-014/7-13; Posetyl-A	M Task Force		
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1500 propriate			/	
lues for calculation of PE in groundwater. The value of 1357 days is presumably based on using 100 days for the 1357 days for the 1357 days is presumably based on using 2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the FAIRIFF task force (12015; S-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for the 1500 propriate				
lues for calculation of PEG in groundwater. The value of 1357 days is presumably based on using 100 days for the part of the part of the DFOP model (2015; M-2341-01-1), and 532 days for the LOFA soil submitted by the AIRITY task force (2015; 5-00506) based on the HS model Since both soils show a similar pattern, the HS model is more propriate for soil in this light, instead of a very conservative estimation of 1000 days	emark notifier: ANSES pr o poses	to us ⇔ 133,	Z@days as geo	metric mean $\beta \Gamma_{50}$ of all acceptable
2341-01-1), and 532 days for the LUFA soil submitted by the FAIRIFF task force (2015; 5-00506) based on the HS model. Since both soils show a similar pattern, the HS model is more propriate for soil in this light, instead of a very conservative estimation of 1000 days	ilues for calculation of PEGin grow	ndwater. The	value of 136	7 days/1s presumably based on using
5-00506) based on the HS model Since both soils show a similar pattern, the HS model is more propriate for a very conservative estimation of 1000 days				
propriate for a second soil in this light, instead of a very conservative estimation of 1000 days				

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 grand (2005, M-251520-01-1) shows that phosphonic acid clearly declines in sediment with a D 50 of 402 days. Thus, the degradation half-live estimated from the sediment compartment should be used as a conservative endpoint for FOCUS modelling. Despite these points, the DEC calculations were carried out with the input parameters proposed by ANSES.

For the metabolite phosphonic and adsorption 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 washus not regarded to be the main mechanism for sorption. Consequently, the use of a standard K_{∞} 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 $(K_f \text{ or } K_d)$ 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 valeulations:

FOCUS Steps 1-2 requires a K_{oc} value as input, which was calculated as pseudo K_{oc} value of 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 com value of 177 mL/g from the scenario specific organic matter content of 9% in the sediment of all OCUS Step 3 scenarios.

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

Compound specific input data are summarised below for FOCLUS Step 3/4 (see Table 9.2.5.75).

Table 9.2.5- 15: Substance parameters used for fosetyl-Al and its metabolite

	A 0		
Parameter	L DIA:4	Parent	Metabolite W
Substance SWASH code General Molar mass		Fosetyl-Al D	Phosphonic acid
SWASH code			REPOSE
General Molar mass	(g/mgt)	354.14	
Molar mass Water solubility (temp.) Vapour pressure (temp.)	(g/mol/) (mg/L)	110000 (20%)	82 0 1 100000 (26°°C) (3E-07 (25°C)
Vapour pressure (temp.)	(Pa)	1E 07 (25°C) & \$\gamma\$	6 E-07 (25 °C)
Crop processes Coefficient for uptake by plant (TSCF)			0 ~ ~
Wash-off factor	(-) (10n)	0 50 50	500
Coefficient for uptake by plant (TSCF) Wash-off factor Sorption Koc KoM Freundlich exponent (1/2) Transformation DT 50 in soil temperature			S .
Koc & & S	(mL/g)	0.06 L	305.15 a)
Freundlich exposent (12)			177 ^{a)} 0.69
		0.06 0.06 0.1 20 2 2	0.07
DT ₅₀ in soil	, (uay	70.1	133.7
		0.1 20 24	20
Transformation DT ₅₀ in soil temperature moisture content (pF) formation fraction in soil DT ₅₀ in water temperature formation fraction in vater DT ₅₀ in sediment temperature	(°C) (log(cm)) (-)		3
DT ₅₀ in water	(days)	3 ×	1000
temperature Q		20, 0 - 0	20
DT ₅₀ in sediment	days) 7	1000	1000
temperature S		2 <mark>0</mark>	<mark>20</mark> 3
formation fraction in sediment		-	3 10
DT ₅₀ of canopy	crays 1 0	10	10
PRZM and TOXSWA (Walker exp.)		0.7	0.7
moistage content (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 proistage PRZM and TOXSWA (Walker exp.) MACRO (calibrated value) Effect of temperature	(days) (cy) (days) (cy) (days) (days) (days)	0.49	0.49
Effect of temperature	<i>y</i>		
TOXSWA (molar activation energy) MACRO Acffect of temperature)	(kJ/mol)	65.4 0.0948	65.4 0.0948
MACRO reffect of temperature) PRZM (Q10)	(1/K) (-)	2.58	2.58
The state of the s			

a) K_f warue used for Spop 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 in the day in a five 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 9.2.5-16.

Table 9.2.5- 16: Application dates of fosetyl-Al for the FQCUS Step 3 calculations for the use in pome fruits

	fruits		V			29" J
Run IDs			DER I / PMT Pome fruit (th)		W .	
GAP Name (DG	R)		Pome fruit (th)	cefold appln)		
Assessment nam	e (PMT)		Pome fruit (thi	eefold appln)		i a a a a a a a a a a a a a a a a a a a
FOCUS model c	rop (crop group)	" ~	DGR I / PMT I Pome fruit (the Pome fruit (the Pome/stone)	iit, late applas	(fruit cro	ps/late)
Use pattern		Ŏ.	3%3.6 kg/a.s./ha	347 days int.	Ğ.	4
Appl. method (R	un off CAM, dept		Air blast (2 - a	ppln foliar lin	ear, 4 em)	
PAT start dat	<mark>te</mark>	solute)		A	, <u> </u>	
(relative to	o crop event or ab	solute)	Absolute		N 5	
PAT window ra			¶4 days >141 d	ays, scenario		
Drainage	PAT	Application &		PAT		Application
scenarios	start/end date a (Jul. day, range)	Q date	scenarios	start/end Jul. day, 1		date
						,
D3 Ditch	08-May/26-Sep (128/269, 141)	17-May 24-May 31-Jun 3	K1 Pood/Stream	08 May/20 128/269,		09-May 13-Jun
Ditch		24-Viay 0,	r coru/Suearii	420/209,	141 Kg	05-Jul
						03 341
	26-Jun/11-Oct			*	(V)	
D4	2 3 Jun/11-Oct	Ş <mark>Q4⁄Jul</mark> Ş	R2 R2	@8-Jul/ 2 0	-	31-Jul
Pond/Stream		27-Aug	Stream	(1890263)	, 74)	07-Aug
	25 Jun/11-Oct (174/284, 110)	10-Sep		W II		14-Aug
	28 jun/11-Oct (5 74/284, 110)		R2 Stream	.0		
D5 Q	21-May/18-Sep	₹V-Mav	Ray	21-May/22	2-Sep	01-Jun
Pond Stream	(1410)61, 120)	09-Jun	Stream ^	(141/265,		16-Jun
~ "		19gul -	Stream S			30-Jun
			Q Q 4	19-May/22	2-Sen	27-May
w w			Stream	(139/265,		12-Jun
, 9						25-Jun
			V			
			7			
₄ <						
**						
(C						
		W' W				
	O' Z					
Õ	21-May/18-Seg (141/261, 120)					

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- 17: Summary of the maximum PEC_{sw} and PEC_{sed} values fosetyl-Al (FOCUS Steps 1-2)

		PEC D	etyl-Al (FEA) TWA 7 days	
Usage	Scenario Q		Sed Sed	SW Sed @
Pome / stone fruit, late applns 3×3600g a.s./ha, 7 days int. full canopy	Step 1 Step 2 N-EU ₄ Multi		2.0 26 4 418 0.0625	
Spring (Mar May)	S-EU Multi N-EU Single SEU Single	463.56 0.10904 81 188.70 0.1254 93 188.70 0.127 93	.418 0.0625 .934 0.0421 .934 0.0721	33.5 % 0.0 % 3 38.758 % 315 38 .758 0 .0315

Table 9.2.5- 18: Summary of the maximum PECs and PECsed values phosphonic acid (FOCUS Steps 1-2)

		*************************************		~~~~	- 4	as -		Oy /	\	
	\$	Š (L			Paospho	nic acid	<i>)</i>	
Pome / stone fruit, 3×3600g a.s./ha/full canopy Spring (Mary-May	. Ø	O ^y			PI	EČ Ş	Palospho	VA _K Ş	T	VA
	**	4			, dan	iax ~	√√7 d	aysy Sed	21	days
J <mark>sage</mark>		F 4	Scenario		SW	Sed	K/SW ?	Sed	SW	Sed
					Jug/L	__ [μg/kg]	μg/Lĵ	[µg/kg]	[µg/L]	[µg/kg]
ome / stone fruit	Date appuis		Step 1 Step 2 N-EV M S-EU Sif	y j	3905\$	12939	3787.6	11955	3763.7	11939
<3600g a.s./ha	days int.	. %	Step 2		200 21	1000	200.03	076.50	20624	071.07
II canopy 🔘			N-EXMI SÆLLMi		329.21 145.37	9/8.96 ₂	424.71	976.59 1344.8	306.34 421.66	971.87 1338.3
ome / stone truit. ×3600g a.s./ha ull canopy pring (Mary- May	<u>,</u>		BEU Si	ngle a	142.83	12939 578.96 13484 41925 596.79	132.33	418.23	131.22	416.21
		5	S-EU Sir	igle 🎊	182.18	₂ 5∰6.79	172.37	545.46	171.06	542.83
			, Ô		, Y	2 ×				
l.		W.). S					
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		Q .								
. * J	79 A	,	SEU SIII							
Pome / stone fruit, 3×3600g a.s./ha full canopy Spring (Mar Mar.			Q (
_s ©			Ÿ Á							
O'Y		, J	7 Y							
		2	~							
~&") O									
		A.								
			S-EU Sir							
Õ										
3×3600g a.s./ha										

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FOCUS Step 3 and 4:

Single and multiple application PEC_{sw} and PEC_{sed} values are presented for all relevant scenarios in Step 3 and 4.

Table 9.2.5- 19: PEC_{sw} and PEC_{sed} values of fosetyl-Al in pome fruits (3x3600 g/ha - 7 day intervals) for all calculated scenarios according to FOCUS SW Step_3

			Fosetyl-Al		
	Scenario	Entry route Spray drift Runoff Drainage	PEC\max SW Sed [#g/L] [#g/kg]	SWY Sed	SW Sad
Multiple applications.	D3 (Ditch) D4 (Pond) D4 (Stream) D5 (Pond) D5 (Stream) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)			09.810 4.9460 3.3340 0.938 3.6060 0.7967 2.9990 0.8223 5.4640 1.5036 2.9820 0.5564 1.4680 0.5256 5.2620 1.5780 2.1470 0.6249	2.3010 0.7800 1.2020 0.307 2.3600 0.6705 3.6090 0.5737 0.7183 0.3290 1.4670 0.4329 3.5080 1.2090
Single application.	D3 (Difely) D4 (Pond) D4 (Stream) D5 (Pond) P3 (Stream) R1 (Pond)	SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	132.10 8.2860 0.6502 132.60 4.4530 5.9360 9.7446 143.20 5.5606 7.9250 0.8144 99.740 2.3460	22.830 2.7616 \$4020 0.627 3.0520 1.1660 3.8340 0.7206	7.6190 2.6750 1.5670 0.5042 1.6840 0.6033 1.8810 0.5958 2.5050 0.8934 2.2900 0.7035 0.6199 0.2219 0.6856 0.2456 2.4580 0.8759

Table 9.2.5- 20: PEC_{sw} and PEC_{sed} values of phosphonic acid in pome fruits (3x3600 g fosetyl-Al/ha – 7 day intervals) for all calculated scenarios according to FOCUS SW Step 3

	r day mici vai	s) ioi aii ca	aicuiaicu sc	CHAILUS AV	coruing u	FOCUS S		
			Phosphon	ic acid				
	Scenario	•	PEC SW [µg/L]	max Sed [µg/kg]	TWA 7	7 days Sed	TWA 2	Q days S
Multiple applications.	D3 (Ditch) D4 (Pond) D4 (Stream) D5 (Pond) D5 (Stream) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	.	8.7580 5.8420 8.7620 15.550 14.840 5.7860 1©390 15.990	11.\$10 \$4.340 \$6.6470	2.9140 5.8310 2.1750 15.390 5.7640 1.4940 20990 0.6249 4.7130	54.320 5.4850 170.46 30.740 44.810 6.1590 7.2340 4.4500 \$\int_{\chi\}}\chi_{\chi\}{\chi_{\chi\}\}\}\}\}\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi\}\}\}\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi\}\}\}\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi_{\chi\}\chi_{\chi\}\}\}\}\chi_{\chi_{\chi_{\chi}\}\}\}\chi_{\chi_{\chi_{\chi_{\chi\}\}\}\chi_{\chi_{\chi}\}\chi_{\chi_{\chi}\}\chi_{\chi_{\chi}\}\chi_{\chi}\}\chi_{\chi}\chi_{\chi}\}\chi\}\chi\chi\}\chi\}\chi\chi\}\chi\}\chi\}\chi\chi\}\chi\}\chi\}\chi\chi\}\chi\\\\\\\\\\	0.3406 0.8628 0.4170 2.91 30	77.4236 54.260 4.2690 169.76 28.3760 44.280 4.8450 6.1536 3.8450 16.650
Single application.	D5 (Stream) R1 (Pond)		11.770 2.8030	7.3500 26.930 3.6960 3.9540 22.150 4.2040 4.1230 7.0420	391740 0.3423 3.3380 0.5988 2.7946	3.5530 26.956 1.1440 3.690 2.7530 22.150 3.740 3.1150 2.6380 6.6500	3.2890 0.2449 2.7370 9.2633	3:9420 0.8656 32.640 2.0580 22.140 2.4940 2.7050 1.8430 6.3940
bold: highest						S S		
					-			
	R1 (Streage) R2 (Stream) R3 (Stream) R4 (Stream) PECS value		Q,					

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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.

Table 9.2.5-21: Summary of FOCUS Step 4 PEC_{sw} values of fosetyl-Al (3×3/6 kg a.s./ha, 7 days int.)

Entries marked with * result from single applications. Pome/stone fruit, laterapplications

			Fosetyl- PEC _{sw} [µ		Ö.	1 5 5 6	
Buffer			4	7.1	eduction	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$ 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Width & Type	Scenario	0%	() Q	50%	y 7		\$ <mark>90%</mark> \$
5m	D3 (Ditch) D4 (Pond) D4 (Stream) D5 (Pond) D5 (Stream)	S 6.78 S 193 S 8.78	50 * 5 20 * S	44.570 9.3900 51.750 3.3990 55.890		22.286	8,9130 * 6781 * ° 10.356 * 0.6382 * 10.180 *
<mark>Spray</mark> drift	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	A Common of the	30 * 7 5	38.9 10 38.9 10 53.050 55.890 38.760		1.6940 *	9.6776 * 7.7830 * 10.630 * 11.180 * 7.7520 *
10m Spray drift &	D3 (Ditch) D4 (Pond) D4 (Stream) D5 (Pond) D5 (Stream) R1 (Pond) R1 (Stream)	S 3.76 S 46.2 S 3.76	30 * S -10 * S -20 * S -50 * S -80 * S	79.920 1.8800 25.1200 7.8810 24.970 1.8790		99580 * S 99402 * S 11.569 * S 0.9404 * S 12.490 * S 0.9395 * S	4.6250 * 0.3762 *
Runoff	R3 (Stream) R4 (Stream) D3 (Ditch)	S D" 49.5	10 × 22	23.756 24.980 172320	*	8.6940 * S 11.880 * S 12.490 * S 8.6600 * S	2.0110 *
15m Spray drift & Runoff	D5 (Pond) D5 (Stream) R6 (Pond) R1 (Stream)	S 2.40 S 25.2		1.2010 11.680 10020 2.610 1.2010 8.7800 11.990	* S : : : : : : : : : : : : : : : : :	0.6007 * S 5.8380 * S 0.6008 * S 0.6003 * S 4.3900 * S 5.9960 * S	2.3350 * 0.2403 * 2.5220 * 0.2401 * 1.7560 *
4			20 *	12.610 8.7450 6.1450 0.8555 7.1360	* S * S * S	6.3050 * S 4.3730 * S 3.0730 * S 0.4277 * S 3.5680 * S	2.5220 * 1.7490 * 1.2290 * 0.1711 * 1.4270 *
20m Spray drift & Runoff	R4 (Stream) D3 (Ditch) D4 (Pond) D4 (Stream) D5 (Pond) D5 (Stream) R1 (Pond) R4 (Stream) R3 (Stream) R4 (Stream) R4 (Stream)	S 15.4	10 * S 10 * S 00 * S 30 * S 660 * S 10 * S	7.7070 0.8549 5.3660 7.3290 7.7070	* S 1 1 1 1 1 1 1 1 1	0.4278 * S 3.8530 * S 0.4274 * S 2.6830 * S 3.6650 * S 3.8540 * S 2.6720 * S	1.5410 * 0.1710 * 1.0730 * 1.4660 *

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

Table 9.2.5- 22: Summary of FOCUS Step 4 PEC_{sed} values of fosetyl-Al (3×3.6 kg a.s./ha, 7 days int.); Entries marked with * result from single applications. Pome/stone fruit, late

	applications				<u> </u>
			tyl-Al ı [µg/kg]		\$ 90% \$
		I L'Ose		Reduction S	
Buffer Width &			NOZZIE K	reduction &	
Type	Scenario	<mark>0%</mark>	50%	45%	90%
<u> </u>	D3 (Ditch)	5.5930 *	23 960 *	1.3980	10.5593
	D4 (Pond)	1.0680	0 .5341		9.1068
	D4 (Stream)	3.4750 *	1.7380	0.8688	0.3475
5	D5 (Pond)	0.9739	0.4869	0.2435	0.0974
5m	D5 (Stream) R1 (Pond)	4.3400 * a 0.9313 * a	2.1700	0.2328	0.4340
Spray drift	R1 (Folid) R1 (Stream)	1.8310 % *		1 0.2320 1 0.2578	0.1834
GIII	R2 (Stream)	2.25600*	0.9157 * 3 0 1.5280 * 3	20.56396 *	_
	R3 (Stream)	4.2800 *	2 400 2	1.0700 *	0,3256 *. 0,4280 *
	R4 (Stream)	1.8720	≈ 30.937 %	0.0006	0.1902
	D3 (Ditch)	2,4990	0 1.2500 * 0 2931 &	0.6248	№ 0.24 *
	D4 (Pond)	0.5861	9.7765 9.7765	0.146	0.0586 0.0586 0.0534
	D4 (Stream)			0.3883	2 1553 *
10m	D5 (Pond)	Q" 0.5344	0.2672	0 336	
Spray drift &	D5 (Stream) R1 (Pond)	\$39390 *	0.9696	* 0.129 *	0.1939 * 0.0517 *
Runoff	P.1 (Stroom)		0.4238	0.129\\ 0.2022	0.0317
Kulloff	R2 (Stream) R3 (Stream)	0.8489	[O 5040] *	0.2520	0.1008 *
	R3 (Stream)		0.9583	20.4781 *	0.1913 *
	R3 (Stream) R4 (Stream) D3 (Ditch)	0.8729	Q 9368 5	(a) 0.2129	0.0885
			0 .6309 **	0.3455	0.1262 *
	D4 (Popus)		0.1789	0893	0.0358
1 7	D4 (Spream)	0.7841 * * 0.3267	0.3921	* (0.1960 *	0.0784 *
15m	DSOPORATION		0.1629	0.0814 0.2448 *	0.0326
Spray drift &	DS (Streated) R1 (Pond)	0.9791	0.1650 *	0.0825	0.0330 *
Runoff	R1 (Stream)	0.4203	0.2105	0.1056	0.0426
	R2 (Stream)	0.5089	5 ^y 6 2545 •	0.1272	0.0509
7 7	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)		% 0.4828 **	0.2414 *	0.0966 *
	R4 (Stroam) ₄	0.4332	0.2173	0.1094	0.0446
	R2 (Stream) R3 (Stream) R4 (Stream) D3 (Bitch) D4/(Pond)	0.7712	0.3856 * 0.1225	0.1928 *	0.0771 *
	D4 (Stream)	$\left \begin{array}{c} \bigcirc \bigcirc \\ \bigcirc \bigcirc \bigcirc \\ \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \\ \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \\ \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \bigcirc \\ \bigcirc \bigcirc$	0.1225	0.0613	0.0245
20	SD5 (Pond)	y 0,7792 3**	0.2396	0.1198	0.0479
20m = 2		0.598	0.1117 0.2992	0.0558 0.1496 *	0.0223 *
Spray drift &	DA (Stream) D5 (Pond) D5 (Stream) R1 (Pond)	0.3950	0.2992	0.0588 *	0.0398
Runoff	R1 (Stream)	0.2500 0.	0.1263	0.0631 *	0.0253 *
	R2 (Stream)	0.31100**	0.1555 *	0.0778 *	0.0311 *
	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	0.5962 *	0.2951 *	0.1475	0.0590 *
	R4 (Stream)	0.5967 *	0.1265	0.0636	0.0259

S, R and D denote main entry routevia spray drift, runoff or drainage, respectively

Table 9.2.5- 23: Summary of FOCUS Step 4 PEC_{sw} values of phosphonic acid (3×3.6 kg fosetyl-Al/ha, 7 days int.); Entries marked with * result from single applications - Pome/stone fruit, late applications

	iate application				
			ionic acid w [μg/L]		\$ 90% \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
D 66		120,		Reduction S	
Buffer Width &			T TOZZIC I	T T	
Type	Scenario	<mark>0%</mark>	50%	45 %	90%
Турч	D3 (Ditch)	5.9940	29900	1.4930	4
	D4 (Pond)	6.7030	4 .0090	3.0120 8.7620	0.4310 8.7620 1.8870 5.3930 4.77313
	D4 (Stream)	8.7620	8.7620	8.7620 W	8.7620° 4C
	D5 (Pond)	7.6130	3.9110	* 1 2 1 7 2 A W 1	1.8870
<mark>5m</mark>	D5 (Stream)	9.1860	5.3930 3.3180		5.3930
Spray	R1 (Pond)	6.6180	3.3189	1.6910	0.73 L
drift	R1 (Stream)	13.390	13.399 15.990 26820 23.468	3390 75.990 4 7060	' % 13.3 %
	R2 (Stream)	15.990 [©]	15.390 15.990 26820	015.990	153990
	R3 (Stream)	11.3\(\)0 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	2 6820	1 2 1 1.720)' 407 060
	R4 (Stream)	23.460	23.460		23.460 20.2753
	D3 (Ditch)	2 7860	1.39¶0 2.080 &	0.6944 2.5736 8.7620 1.9580 3.3930	0.27
	D4 (Pond)	24.2050	3 1080 4 8 7620	2.5730	2.2620
10	D4 (Stream)	8.7620 4,2690	^y 3.7620	8.7620	§ 27620
10m	D5 (Pond)	Q ^y 42690	3.4080 \$7620 2.2640 5.3930 1.57760 7.2110	1.6580 2.7	1.8010
Spray	D5 (Stream) R1 (Pond) R1 (Stream)	5.3930	5.3930 1.5740	0.894	5.3930
drift &	R1 (Pond)	′	1.4/40 0.7	0.8941	0.3701
Runoff	R1 (Stream) R2 (Stream)	7.3110	7.2110	5,7 % 0 7,2110	5.7760 7.2110
	R2 (Stream)	5.0780	2.5580	2.0490	2.0490
	R4 (Stream)	10.350	2.5\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	(10.359)	10.350
	R3 (Stream) R4 (Stream) D3 (Ditch)	1.3790	0.6885 °	0.3438	0.1373
	D4 (D. St	\$\frac{1}{2}\frac{1}{		2.3690	2.1830
	D4 (Speam)	8.7620	8 7690 6	8.7620	8.7620
15m	D5 (Pond)	2.7000 × 5.3930	2.0160	1.8560	1.7610
Spray		5.3930	3.3930	5.3930	5.3930
drift &	R1 (Pond)	<u> 1640</u>		\$ 0.5556	0.2438
Runoff 🕺	R1 (Stream)	5.7760	5.7.60	5.7760	5.7760
	R2 (Stream)	7.2110		7.2110	7.2110
,	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	2.6630	2.049 6	2.0490	2.0490
	R3 (Stream) R4 (Stream) D3 (Ditch) D4 (Stream)	10.350	0 10 <u>350</u>	10.350	10.350
	D3 (Bitch)	0.8093	0.4042 * 0.4870 *	0.2019 *	0.0807
	D47(Pond)OV	2.900	D [*] 2 2.4870	2.2710	2.1450
	DA (Stream) D5 (Pond)	8 7620 67	8.7620	8.7620	8.7620
20m	D5 (Pond)	2.1370 2.1370 3.1370 3.1370		1.8060	1.7410
Spray drift &	DA (Stream) D5 (Pond) D5 (Stream) R1 (Pond)	5.3930	5.3930	5.3930	5.3930
uriit &	R1 (Pond)	1.4590	0.7272	0.3676	0.1563
Runeff	RI (Stream)	29650 × ×	2.9650	2.9650	2.9650
4	R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	3.76500	3.7650	3.7650	3.7650
	R3 (Stream)	1.5660 *	1.0550	1.0550	1.0550
	R4 (Stream)	5.3600	5.3600	5.3600	5.3600

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

Table 9.2.5- 24: Summary of FOCUS Step 4 PECsed values of phosphonic acid (3×3.6 kg fosetyl-Al/ha, 7 days int.); Entries marked with * result from single applications - Pome/stone fruit, late applications

	iate applicatio				<u> </u>
			onic acid		
		PECse	d [μg/kg]	`	
Buffer			Nozzle F	Reduction S	4 .4
Width &		0%	50%	45%	.// >/
Type	Scenario		50 70	2/ 2	90% V
	D3 (Ditch)	8.2770	4 5040	2.4380 24.700	U" 10750 \$
	D4 (Pond)	60.000	36.850		97.450
	D4 (Stream)	6.5890	6.4750	6.4120 6	6.3760
-	D5 (Pond)	73.400	45.670 4.1580	31.480 [©]	7,450 6,3760 22,760 3,9490 8,6790 8,9080
5m	D5 (Stream)	4.4020	4.1580 ×		3.9490
Spray	R1 (Pond)		28.230		8.6/94
<mark>drift</mark>	R1 (Stream) R2 (Stream)	9.0960 & 11.090	8.99336 11.5910	\$ \$39400 \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	3. 103940 a
	R3 (Stream)	5.1200	8.9933 11.5910 28690	1 6070	100940 205870
	R4 (Stream)	214770	21.700	2 10000	81 (48
	D3 (Ditch)			19.276 19.276 6.3750 24.900 3.9580	21.640 20.5467
	D4 (Pond)	239.180		19.270	15.P90
	D4 (Stream)	6.4660	2.2990 25.850 6.4070 32.890 4.0260 16.390 3.7630 4.6890	6.3.250	2 2 2 2 3 5 3 0
10m	D5 (Pond)		32.890	24900	20.110
Spray	D5 (Stream)	48.390	4.0360 16/390	∮ <mark>3</mark> .9580	(a) 3.9190
drift &	D5 (Stream) R1 (Pond) R1 (Stream)		O 16 390 S	9.3240	4.7330
Runoff	R1 (Stream)	3.8000	3.7630 ₽	3,7 3 40	3.7170
	R2 (Stream) R3 (Stream)	10 1 4.9310 6.9	4.6890	\$\\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	4.6490
	R3 (Stream)	2.1950	👸 <mark>2.0060</mark>	S V Y Y Y Y Y Y	1.8770
	R3 (Stream) R4 (Stream) D3 (Ditch)	8.9630	2.0080 89010	****	8.8500
	D3 (Ditch)	2.2630	r № 2.2240 r	0.6564	0.2865
	D4 (Posa)			6.640	14.100
1 /7		6.4070	6.3540 26.620 \$ 3.9576		6.3450
15m	Dog old o		26.620 3.957	21.800 2 3.9250	18.830 3.9060
Spray drift &	DS (Stream) R1 (Pond)	4.0190 S		₩ <mark>6 2910</mark>	3.4590
Runoff 3	R1 (Stream)	\$\text{19.350}{\text{3.7620}}		3.7190	3.7110
Runoff	R2 (Stream)	4 6880	3.7340 × 4.6650 × 6650	4.6520	4.6440
44	R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream) R4 (Stream)	4.6880 2.0250	% 1.93 50	1.8870	1.8560
	R3 (Stream) R4 (Stream) D3 (Brtch) D4 (Stream)	2.0250 8.9000 1.4040	© 8.8690	8.8530	8.8440
	D3 (Bitch)	\$\frac{8}{23.720}\$		0.4030	0.1754
	D4 Pond	23.700	D 108,170	15.320	13.550
	DA (Stream)	23.020 63800	% <mark>6.3600</mark>	6.3490	6.3420
20m	AD5 (Pond)	63800 57 247.2700 23.9680	6.3600 23.610	20.260	18.190
Spray 《		3.9680 S	3.9310	3.9120	3.9000
	D5 (Stream) R1 (Pond) R1 (Stream) R2 (Stream) R3 (Stream) R4 (Stream)	13,500	7.6690	4.3890	2.2710
Rune	R1 (Stream)	© \$800 ° 7	1.9620	1.9520	1.9460
V	R1 (Pond) R1 (Stream) R2 (Stream) R3 @stream)	2.4810	2.4660	2.4580	2.4530
	R3 Stream	1.0990	1.0420	1.0110	0.9917
	R4 (Stream)	4.8760	4.8560	4.8460	4.8390

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

CP 9.3 Fate and behaviour in air

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

CP 9.4 Estimation of concentration for other routes of exposure

There are no other routes of exposure if the product is used according to good agreed.

Therefore no further estimations are considered necessary CP 9.4 Estimation of concentrations for other poures of exposure.

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