

FINAL REGISTRATION REPORT

Part B

Section 8

Environmental Fate

Detailed summary of the risk assessment

Product code: AKO 600 SC

Product name(s): Tanger 600 SC, Libretto 600 SC

Chemical active substance(s):

Aclonifen, 600g/L

Central Zone

Zonal Rapporteur Member State: Poland

Co-Rapporteur Member State: Hungary, Slovakia, Germany,
Romania

CORE ASSESSMENT

(authorization)

Applicant: Innvigo sp z o.o.

Submission date: 18.11.2024

zRMS Assessment : 28/06/2025

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Final version:29/06/2026

Version history

When	What
June 2025	zRMS evaluation
October 2025	Following commenting period
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8 Fate and behaviour in the environment (KCP 9)

According to Regulation 1107/2009 data protection for data at European level lasts for 10 years. Due to the fact that the aclonifen annex I was approved on 1/08/2009, data protection has expired 1/08/2019. Therefore, Innvigo can use the European data for aclonifen for the registration of the product AKO 600 SC [Libretto 600 SC, Tanger 600 SC]

Fate and behaviour in the environment was discussed in the meeting of experts PRAPeR 42 (March – April 2008), on basis of the DAR (August 2006) and the Addendum 1 (March 2008). A new Addendum 3 (May 2008) has been made available after the meeting of experts.

General comment
This document presents the environmental fate summary and exposure calculations for the plant protection product AKO 600 SC (product names: Tanger 600 SC, Libretto 600 SC), a suspension concentrate type formulation (SC) containing 600 g/L aclonifen for use as a herbicide. The following data and information were provided by the applicant Innvigo Sp. z o.o. as a dRR. For the purpose of this application, Innvigo Sp. z o.o. relies on data for which data protection period has expired 1/08/2019. The basis of such request is in Art.34(1) of the Regulation 1107/2009 All comments of the evaluator there are in the “greyboxes”. The additional information/calculations added by the applicant during the evaluation are marked in colour.

8.1 Critical GAP and overall conclusions

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

GAP ver. 1.4 date: 22.05.2024

PPP (product name/code): AKO 600 SC / Tanger 600 SC, Libretto 600 SC
Active substance 1: Aclonifen
Safener:
Synergist:
Applicant: Innvigo sp. z o.o.
Zone(s): Central Zone
Verified by MS:
Field of use: Herbicide

Formulation type: SC
Conc. of as 1: 600 g/L
Conc. of as 2: (c)
Conc. of as: (c)
Conc. of safener: (c)
Conc. of synergist: (c)
Professional use:
Non professional use:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use- No. (e)	Member state(s)	Crop and/ or situation (crop destination / purpose of crop)	F, Fn, Fpn G, Gn, Gpn or I	Pests or Group of pests controlled (additionally: devel- opmental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g safen- er/synergist per ha (f)	Conclusion
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between appli- cations (days)	kg or L product / ha a) max. rate per appl. b) max. total rate per crop/season	g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min / max			
Zonal uses (field or outdoor uses, certain types of protected crops)														
1	PL, DE	Potato <i>Solanum tuberosum</i> SOLTU	F	Mono and dicots weeds	Spray	BBCH 01-09	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 400	40		A

2	PL	Potato <i>Solanum tuberosum</i> SOLTU	F	Mono and dicots weeds	Spray	BBCH 01-09	a) 1 b) 1	n/a	a) 0.8- 2.0 L/ha AKO 600 SC + 0.2 L/ha Boa Pro 480 EC (clomazon 480 g/L) b) 0.8-2.0 L/ha AKO 600 SC + 0.2 L/ha Boa Pro 480 EC (clomazon 480 g/L)	a) 0.48-1.2 + 0.096 kg as/ha b) 0.48-1.2 + 0.096 kg as/ha	200- 400	40		A
3	HU, RO, SK	Sunflower <i>Helianthus annuus</i> HELAN	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
Interzonal uses (use as seed treatment, in greenhouses (or other closed places of plant production), as post-harvest treatment or for treatment of empty storage rooms)														
4														
5														
Minor uses according to Article 51 (zonal uses)														
6	PL	Sunflower <i>Helianthus annuus</i> HELAN	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
7	PL, DE, SK	Spring rapeseed BRSNN BRSNS	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
8	PL, HU, RO, SK	Flax LIUUT	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
9	PL, DE, HU, RO, SK	Opium poppy <i>Papaver somniferum</i> PAPSO	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
10	PL, RO, SK	Mustard 3MUSC	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
11	PL	Soybeans GLXMA	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
12	PL, DE, HU, RO, SK	Pumpkin CUUPE	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A

13	PL, DE, HU, RO, SK	Hemp CNISA	F	Mono and dicots weeds	Spray	BBCH 00-08	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
14	PL, HU, RO, SK	Tobacco <i>Nicotiana tabacum</i> NIOTA	F	Mono and dicots weeds	Spray	Before planting	a) 1 b) 1	n/a	a) 1.8 - 2.5 L/ha b) 1.8 - 2.5 L/ha	a) 1.08 - 1.50 kg as/ha b) 1.08 - 1.50 kg as/ha	150- 400	n/a		A
15	PL, HU, RO, SK	Forest nurseries plants (pine tree, spruce, fir tree, larch) YPFLG	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 3.0 L/ha b) 1.95 - 3.0 L/ha	a) 1.17 - 1.8 kg as/ha b) 1.17 - 1.8 kg as/ha	200- 300	n/a		A
16	PL, HU, RO, SK	Ornamental shrubs NNNZG	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 2.5 L/ha b) 1.95 - 2.5 L/ha	a) 1.17 - 1.50 kg as/ha b) 1.17 - 1.50 kg as/ha	200- 300	n/a		A
17	PL, HU, RO, SK	Basket willow <i>Salix</i> sp. SAXSS	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 2.5 L/ha b) 1.95 - 2.5 L/ha	a) 1.17 - 1.50 kg as/ha b) 1.17 - 1.50 kg as/ha	200- 300	n/a		A
18	PL, HU, RO, SK	Purple willow SAXPU	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 2.5 L/ha b) 1.95 - 2.5 L/ha	a) 1.17 - 1.50 kg as/ha b) 1.17 - 1.50 kg as/ha	200- 300	n/a		A
19	PL, HU, RO, SK	Forest tree 3FORC	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 2.5 L/ha b) 1.95 - 2.5 L/ha	a) 1.17 - 1.50 kg as/ha b) 1.17 - 1.50 kg as/ha	200- 300	n/a		A
20	PL, HU, RO, SK	Christmas tree PIEAB	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 2.5 L/ha b) 1.95 - 2.5 L/ha	a) 1.17 - 1.50 kg as/ha b) 1.17 - 1.50 kg as/ha	200- 300	n/a		A
21	PL, HU, RO, SK	Energetic willow SAXSS	F	Mono and dicots weeds	Spray	Immediately after planting, when trees are dormant	a) 1 b) 1	n/a	a) 1.95 - 2.5 L/ha b) 1.95 - 2.5 L/ha	a) 1.17 - 1.50 kg as/ha b) 1.17 - 1.50 kg as/ha	200- 300	n/a		A
Minor uses according to Article 51 (interzonal uses)														
22														

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1

** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

Explanation for column 15 “Conclusion”

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

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Use-No. *	Member state(s)	Product name	F, Fn, Fpn G, Gn, Gpn or I **	Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group)	Preparation		Application			Application rate			PHI (days)	Remarks: e.g. g safener/ synergist per ha	
					Type	Cond. Of as	Method kind	Growth stage & season	Max. number a) per use b) per crop/ season	Min. interval between applica- tions (days)	kg or L product/ha a) max. rate per appl. b) max. total rate per crop/season	g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season			Water L/ha min/max
Sunflower	EU		F	Monocot and dicot weeds	SC	600 g/L	Overall spray	Pre-emergence	a) 1 b) 1	n.a	0.6-1.2	2.4	200-400	n.a	[1] [2]

[1] Technical specification not agreed.

[2] Data gaps were identified in section 5 with regard to the long-term risk to birds and mammals, the risk to aquatic organisms and non-target plants.

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1

** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

General comment zRMS

AKO 600 SC (product names: Tanger 600 SC, Libretto 600 SC) is a suspension concentrate type formulation (SC) containing 600 g/L aclonifen for use as a herbicide.

Aclonifen (2-chloro-6-nitro-3-phenoxyaniline; CAS No 74070-46-5) is recognised as approved for use in plant protection products under Regulation (EC) No 1107/2009 in Annex of Commission Implementing Regulation (EU) No 540/2011 of 25 May 2011 with the expiration of approval on 31 October 2026.

For aclonifen only uses as herbicide may be authorised.

In this assessment used endpoints evaluated on EU level in accordance with EFSA documents:

- The SANCO report for Aclonifen (SANCO/161/08 – rev. 2; 28 September 2012);
- “Conclusion regarding the peer review of the pesticide risk assessment of the active substance Aclonifen” - EFSA Scientific Report (2008) 149, 1-80.

8.2 Metabolites considered in the assessment;

8.2.1 Metabolites of Aclonifen potentially relevant for exposure assessment; EFSA Scientific Report (2008) 149, 1-80.

The potential metabolites arising from the phenyl ring of Aclonifen would be phenol and hydroquinone, both of which are naturally occurring in the environment. The relevance of these potential metabolites was not considered either in the DAR or in the peer review.

zRMS comment
Information relating to no aclonifen relevant metabolites for further exposure assessment is in line with EFSA Scientific Report (2008) 149, 1-80.

8.3 Rate of degradation in soil (KCP 9.1.1)

Studies on degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. Endpoints which are required for data extrapolation are evaluated in EFSA Scientific Report (2008) 149, 1-80.'

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

8.3.1 Aerobic degradation in soil (KCP 9.1.1.1)

Table 8.3-1: Summary of aerobic degradation rates for Aclonifen - laboratory studies; EFSA Scientific Report (2008) 149, 1-80.

Aclonifen, Laboratory studies, aerobic conditions								
Soil type	X⁹	pH	t.°C / %MWHC	DT₅₀/DT₉₀	DT₅₀ (d) 20°C pF2/10kPA	St.(chi²)	Method of calculations	Evaluated on EU level y/n/ Reference
Aldhams House (94/8/2) silty sand		6.7	20 °C / 60 % FC	134 / 443	93.6	10.4	SFO	EFSA Scientific Report (2008) 149, 1-80.
Shelley Field (94/9/2) silty loam		7.0	20 °C / 60 % FC	73 / 242	51.0	7.2	SFO	EFSA Scientific Report (2008) 149, 1-80.
Westleton (94/10/2) silty loam		6.8	20 °C / 60 % FC	95 / 315	66.4	5.4	SFO	EFSA Scientific Report (2008) 149, 1-80.
Westleton (94/10/2) silty sand		6.8	20 °C / 30 % FC	>> 118 d			reduced soil moisture	EFSA Scientific Report (2008) 149, 1-80.

sandy loam Arable		7.3	22 °C / 40 % MWHC	32/ 107	29.5	10.1	SFO	EFSA Scientific Report (2008) 149, 1-80.
sandy loam Standard soil 2.3		6.6	22 °C / 40 % MWHC	78/ 259	72.6	4.8	SFO	EFSA Scientific Report (2008) 149, 1-80.
oamy sand (Speyer 2.2 A)		6.0	22 °C / 40 % MWHC	93/309	83.7	0.7	SFO, initial residue at day14	EFSA Scientific Report (2008) 149, 1-80.
loamy sand (Speyer 2.2 B)		6.0	22 °C / 40 % MWHC	76/ 254	68.7	2.7	SFO, initial residue at day14	EFSA Scientific Report (2008) 149, 1-80.
sandy loam (Speyer 2.3)		7.0	22 °C / 40 % MWHC	34 / 114 53/ 177	41.9	2	SFO, initial residue at day14	EFSA Scientific Report (2008) 149, 1-80.
oamy sand Westleton		6.8	10 °C / 50 % MWHC	222/ 740	86.5	3.4	SFO	EFSA Scientific Report (2008) 149, 1-80.
clay loam Stockland		7.2	10 °C / 50 % MWHC	206 / 684 218/ 723	61.8	3.2	SFO	EFSA Scientific Report (2008) 149, 1-80.
Geometric mean (n=10)					62.3/67.6			
pH-dependency:					NO			

8.3.2 Anaerobic degradation in soil (KCP 9.1.1.1)

Table. 8.3-2 Summary of anaerobic degradation rates for Aclonifen - laboratory studies; reference: EFSA Scientific Report (2008) 149, 1-80.

Parent	Anaerobic conditions						
Soil type	X ¹⁰	pH	t. °C / % MWHC	DT ₅₀ / DT ₉₀ (d)	DT ₅₀ (d) 20 °C pF2/10kPa	St. (r ²)	Method of calculation
Speyer 2.3			22 °C	-		-	-
Geometric mean/median							

Degradation of aclonifen in soil under anaerobic conditions was investigated in one of the studies presented in the dossier that was not considered reliable. Therefore, the meeting identified a data gap that was not considered essential to finalize the risk assessment of the EU representative uses.

8.4 Field studies (KCP 9.1.1.2)

Field studies with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. Endpoints which are required for data extrapolation are evaluated in EFSA Scientific Report (2008) 149, 1-80.

Evaluation by zRMS	Field studies (KCP 9.1.1.2)
Comments	No new data. Information in Section 8.4 is available in dossiers of active substance: aclonifen and can be extrapolated to formulation. Therefore no studies

have been conducted. EU agreed data were correctly reported.

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

Table. 8.4.1-1 Soil dissipation testing of Aclonifen on a range of representative soils; reference: EFSA Scientific Report (2008) 149, 1-80.

Parent	Aerobic conditions								
Soil type (indicate if bare or cropped soil was used)	Location (country or USA state)	X ¹	pH	Depth (cm)	DT ₅₀ (d) actual	DT ₉₀ (d) actual	St. (chi ²)	DT ₅₀ (d) Norm.	Method of calculatio n
silty loam	Goch- Nierswalde, Germany		5.9	0 – 10	61	202	13.3		SFO
silty loam	Meißner- Vockerode, Germany		6.4	0 – 10	119	395	25.9		SFO
sandy loam	Schwichteler, Germany		6.3	0 – 30	195	649	11.3		SFO
sandy loam	Niederkirchen, Germany		7.3	0 – 30	13 / 57 ¹	188.7	7.2		FOMC ($\alpha = 0.72$, $\beta = 8.29$)
clay loam (cropped with sunflower)	Almacelles, Spain		7.8	0 – 30	51/ 108 ¹	357	18.5		FOMC ($\alpha =$ 1.279, $\beta =$ 70.628)
sandy silt loam (cropped with sunflower)	Cruas, France (Southern EU)		8.2	0 – 30	31	104	0.95 14.7		SFO
Geometric mean/median (DT₅₀) for SFO					80.4 / 84.5	-	-		not normalis ed

¹ first order DT50 (DT50 = DT90/3.32 see FOCUS Degradation Kinetics)

8.4.2 Soil accumulation testing (KCP 9.1.1.2.2), reference: EFSA Scientific Report (2008) 149, 1-80

Soil accumulation and plateau con- centration	Germany: 3 year study, 2 soils (silty loam), application of BANDUR SC 600 g/L every year in spring with 2700 g as/ha: no accumulation of aclonifen residues was observed at the two accumulation study trial sites, but the dissipation at the sites was too rapid to represent a realistic worst case.
	Measured plateau concentrations: Werl: 1.0115 mg/kg at day 0, 0.0153 mg/kg at day 350 Bibertal: 0.7392 mg/kg at d 0, 0.0290 mg/kg at day 357 Calculation of PECsoil accumulation: 2400 g as/ha, no interception, one application per year, soil density: 1.5 g/cm ³ DT50 = 195 d (max. field trials) back-ground concentration over 20 cm: 0.3008 mg/kg PECini (5 cm): 3.2 mg/kg PECsoil,accumulated = 0.3008 mg/kg + PECini = 3.5008 mg/kg

8.5 Mobility in soil (KCP 9.1.2)

Studies on mobility in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. Endpoints which are required for data extrapolation are evaluated in EFSA Scientific Report (2008) 149, 1-80.

Evaluation by zRMS	Field studies (KCP 9.1.2)
Comments	No new data. Information in Section 8.5 is available in dossier of active substance: aclonifen and can be extrapolated to formulation. Therefore no studies have been conducted. EU agreed data were correctly reported.

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

Aclonifen									
Soil name	Soil type	OC (%)	Soil pH(-)	K _d (mL/g)	K _{oc} (mL/g)	K _f (mL/g)	K _{foc} (mL/g)	1/n (-)	Evaluated on EU level y/n/ Reference
-	Loam	1.1	6.4			58.5	5318	0.878	EFSA Scientific Report (2008) 149, 1-80.
-	Sandy loam	1.7	7.3			92.6	5447	0.885	EFSA Scientific Report (2008) 149, 1-80.
-	Loamy sand	2.5	5.7			265.3	10612	1.003	EFSA Scientific Report (2008) 149, 1-80.
Arithmetic mean (n=3)							7126	0.922	
Geometric mean (n=3)							6749	-	
pH-dependency y/n							NO		

8.5.1 Column leaching (KCP 9.1.2.1)

Table 8.5.1-1 Mobility in soil – column leaching of Aclonifen; reference: EFSA Scientific Report (2008) 149, 1-80.

Column leaching	Elution (mm): 400 mL Time period (d): 48 h Three soils: Speyer 2.1, 2.2 and 2.3
	Aclonifen was not detected in leachate (LOD < 2 µg / 386 mL or 0.3 % of applied).

8.5.2 Lysimeter studies (KCP 9.1.2.2)

Table 8.5.2-1 Lysimeter / field leaching studies on Aclonifen; reference: EFSA Scientific Report (2008) 149, 1-80.

Lysimeter/ field leaching studies	Location: Study type (e.g. lysimeter, field): lysimeter Soil properties: texture, pH = , OC = , MWHC = Dates of application : Crop : /Interception estimated: Number of applications: x
-----------------------------------	--

	years, x applications per year Duration. Application rate: x g/ha/year Average annual rainfall (mm): x mm Average annual leachate volume (mm): x mm % radioactivity in leachate (maximum/year): x % AR Individual annual maximum concentrations (e.g. 1 st , 2 nd , 3 rd yr): x µg/L active substance, x µg/L Met I, xµg/L Met VII. Unidentified radioactivity, no of components, x µg/L parent equivalents. Individual annual average concentrations (e.g. 1 st , 2 nd , 3 rd yr): x µg/L active substance, x µg/L Met I, xµg/L Met VII. Unidentified radioactivity, no of components, x µg/L parent equivalents. Amount of radioactivity in the soils at the end of the study = % AR; XX % AR as parent, XX % AR as Met I
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8.6 Degradation in the water/sediment systems (KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3)

Studies on degradation in water/sediment systems with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. Endpoints which are required for data extrapolation are evaluated in EFSA Scientific Report (2008) 149, 1-80.

Evaluation by zRMS	Degradation in the water/sediment systems (KCP 9.2)
Comments	No new data. Information in Section 8.6 is available in dossier of active substance: aclonifen and can be extrapolated to formulation. Therefore no studies have been conducted. EU agreed data were correctly reported.

Parent	Distribution: in sediment max of 53.4 % at day 7; in water max of 98.3 % at day 0 No metabolites > 5 % at two subsequent measures in water and sediment									
Water / sediment system	pH water	pH sed.	t. °C	DT ₅₀ - DT ₉₀ whole sys.	St. (chi²)	DT ₅₀ - DT ₉₀ water	St.	DT ₅₀ - DT ₉₀ sed.	St. (chi²)	Method of calculation
I Mannin g-tree	6.7	6.8	20	11.2/ 37.9	- 18.9	3.2/- -	- -	92/- -	-	SFO (non-linear) SFO
II Ongar	7.5	8.4	20	- 17.3/ 57.7	- 13.4	5.6/-	- -	no decl.*	- -	SFO (non-linear) SFO
DT ₅₀ Geometric mean/median ¹⁾						4.2/4.4 ¹⁾		1000** ¹⁾		SFO (non-linear)

(* no decline, ** 1000 d worst case assumption, 1) For PEC_{sw} and PEC_{sd} calculations separated DT₅₀ for water and sediment cannot be used, instead worst case DT₅₀ whole sys. of 17.3 d to be used.)

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

8.7.1 Justification for new endpoints

According to EFSA Scientific Report (2008) 149, 1-80, no new endpoints were established.

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

Table 8.7-1: Input parameters related to application for PEC_{soil} calculations

Use No.	1.
Crop	Potatoes
Application rate (g as/ha)	Aclonifen: 1800 g as/ha 1390g as/ha 1200g as/ha
Number of applications/interval	1
Crop interception (%)	0%
Depth of soil layer (relevant for plateau concentration) (cm)	5/20 cm

Table 8.7-2: Input parameter for active substance(s) and relevant metabolite(s) for PEC_{soil} calculation

Compound	Molecular weight (g/mol)	Max. occurrence (%)	DT50 (days)	Value in accordance to EU endpoint y/n/ Reference
Aclonifen	264.7	-	195 days (worst case field degradation) Kinetics: SFO	EFSA Scientific Report (2008) 149, 1-80,

Aclonifen's PEC_{soil} calculations were presented for worst case scenario – potatoes – that covers all intended uses presented in GAP table (table 8.1-1).

Potato as the representative worst case scenario crop:

- a) crop interception: 0%
- b) maximum application rate of aclonifen: 1.8 kg/ha

Table 8.7-3: PEC_{soil} for Aclonifen on Potatoes

PEC _{soil} (mg/kg)		Potatoe			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		2.4000	--	--	--
Short term	24h	2.3915	2.3957	--	-
	2d	2.3830	2.3915	--	--
	4d	2.3661	2.3830	--	--
Long term	7d	2.3410	2.3704	--	
	14d	2.2835	2.3413	--	
	21d	2.2274	2.3126	--	

	28d	2.1726	2.2844	--	
	50d	2.0092	2.1988	--	
	100d	1.6820	2.0198	--	
Plateau concentration (20 cm) after year 1		0.2256 mg/kg	--	--	--
PEC _{accumulation} (PEC _{act} + PEC _{soil plateau}) (Escape ver. 2)		2.6256 mg/kg	--	--	--

Table 8.7-4: PEC_{soil} for Aclonifen on Potatoes – 1.39 kg of aclonifen/ha – values for the proposed dose of the aclonifen which ultimately poses no unacceptable risk for mammals

PEC _{soil} (mg/kg)		Potatoe			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		1.8533	--	--	--
Short term	24h	1.8468	1.8500	--	--
	2d	1.8402	1.8468	--	--
	4d	1.8272	1.8402	--	--
Long term	7d	1.8078	1.8305	--	
	14d	1.7634	1.8080	--	
	21d	1.7200	1.7859	--	
	28d	1.6778	1.7641	--	
	50d	1.5516	1.6980	--	
	100d	1.2989	1.5597	--	
Plateau concentration (20 cm) after year 1		0.1742	--	--	--
PEC _{accumulation} (PEC _{act} + PEC _{soil plateau}) (Escape ver. 2)		2.0275	--	--	--

Table 8.7-5: PEC_{soil} for Aclonifen on Potatoes – 1.2 kg of aclonifen/ha – values for the proposed dose of the aclonifen necessary for secondary poisoning risk assessment for earthworm-eating mammals

PEC _{soil} (mg/kg)		Potatoe			
		Single application		Multiple applications	
		Actual	TWA	Actual	TWA
Initial		1.6000	--	--	--
Short term	24h	1.5943	1.5972	--	--
	2d	1.5887	1.5943	--	--
	4d	1.5774	1.5887	--	--
Long term	7d	1.5607	1.5803	--	
	14d	1.5223	1.5608	--	
	21d	1.4849	1.5417	--	
	28d	1.4484	1.5230	--	

	50d	1.3395	1.4659	--	
	100d	1.1214	1.3465	--	
	Plateau concentration (20 cm after year 1)	0.1504	--	--	--
	PEC _{accumulation} (PEC _{act} + PEC _{soil plateau}) (Escape ver. 2)	1.7504	--	--	--

8.7.2.1 PEC_{soil} of AKO 600 SC

The PEC_{soil} of the formulation AKO 600 SC was calculated using the following formula based on the relevant worst case crop interception: 0% and maximum application rate that is 1800 g/ha (potato)

$$PEC_{soil} = \text{application rate of formulation [g/ha]} \cdot (1 - (\text{crop interception [\%]}/100)) / 100 \cdot d [\text{g/cm}^3] \cdot l [\text{cm}]$$
if:

Application rate of formulation: 3635.4 g/ha (application rate [L/ha] x density of formulation)

Density of formulation: 1.2118 g/ml

Worst case volume: 3L

d – soil density: 1.5 g/cm³

l – soil depth: 5 cm

For the worst crop case scenario – Potatoes

$$PEC_{soil} = 3635.4 [\text{g/ha}] \cdot ((1 - 0)) / 100 \cdot 1.5 [\text{g/cm}^3] \cdot 5 [\text{cm}] = 4.8472 [\text{mg/kg}]$$

Table 8.7-4 6: PEC_{soil} for AKO 600 SC on potato (worst case scenario)

Active substance/ reparation	Application rate (g/ha)	PEC _{act} (mg/kg)	PEC _{twa21 d} (mg/kg)	Tillage depth (cm)	PEC _{soil,plateau} (mg/kg)	PEC _{accu} = PEC _{act} + PEC _{soil,plateau} (mg/kg)
Aclonifen (1800g/ha)	3635.4	4.8472	-	5	-	-
Aclonifen (1500 g/ha)	3029.5	4.0393	-	5	-	-

Evaluation by zRMS	PEC _{soil} (KCP 9.1.3)
Modelling	The assumptions and results of calculations are acceptable. The predicted environmental concentrations in soil (PEC_{soil}) of aclonifen were calculated according to recommendations of the FOCUS workgroup on degradation kinetics using single application on potatoes as the representative worst case scenario crop: - 3.0 l product/ha (1800 g/ha aclonifen) Additionally, the calculations for doses: - 1.39 kg of aclonifen/ha (value which ultimately poses no unacceptable risk for mammals) - 1.2 kg of aclonifen/ha (value necessary for secondary poisoning risk assessment for earthworm-eating mammals) were made.

	No interception was considered. For calculation of the PEC_{soil}, the longest DT50 value of the field trials of 195 days was used correctly. It was assumed that the active substance was distributed in the top 5 cm soil layer with a soil bulk density of 1.5 g/mL. The calculated PECs values are presented in Tables from 8.7-3 to 8.7.5. The applicant also correctly calculated the PEC_{soil} for the formulation AKO 600 SC (Tanger 600 SC, Libretto 600 SC). The results are shown in the Table 8.7-6. The calculated PEC_{soil} values for AKO 600 SC (Tanger 600 SC, Libretto 600 SC) and aclonifen are appropriate to be used for the subsequent risk assessment for soil organisms.
Agreed Endpoints	Aclonifen: 1800 g/ha Initial PEC_{soil}: 2.4000 mg/kg PEC_{accumulation} = 2.6256 mg/kg Aclonifen: 1390 g/ha Initial PEC_{soil}: 1.8533mg/kg PEC_{accumulation} = 2.0275 mg/kg Aclonifen: 1200 g/ha Initial PEC_{soil}: 1.600mg/kg PEC_{accumulation} = 1.7504 mg/kg Formulation: AKO 600 SC (Tanger 600 SC, Libretto 600 SC) PEC_{act} = 4.8472 mg/kg PEC_{act} = 4.0393 mg/kg

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

8.8.1 Justification for new endpoints

No new endpoint were established

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

In order to calculate PEC_{gw} values for crops presented in the GAP, risk envelopes with maximum application rate scenario were used.

Table 8.8.2-1 Potato – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Potatoes	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Potatoes	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8.2-2 Sunflower and maize as surrogate scenario for sunflower – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Sunflower	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Sunflower	Aclonifen	1800	Spray	1	n/a	BBCH 00
Maize as a surrogate crop for sunflower due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8.2-3 ~~Cabbage and~~ Potato as surrogate scenario for pumpkin – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Pumpkin	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Cabbage as a surrogate crop for pumpkin due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Potatoea as a surrogate crop for pumpkin due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8.2-4 Soybean and peas and beans as surrogate scenario for soybean – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Soybean	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Soybean	Aclonifen	1800	Spray	1	n/a	BCCH 00
Peas as a surrogate crop for soybean due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Beans (field) as a surrogate crop for soybean due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Beans (vegetables) as a surrogate crop for soybean due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8.2-6 Spring oilseed rape and winter oilseed rape as surrogate scenario for spring rapeseed – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Spring rapeseed	Aclonifen	1500 1170 - 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Spring oilseed rape as a surrogate crop for spring rapeseed due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Cabbage Winter oilseed rape as a surrogate crop for spring rapeseed due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8.2-7 Spring Winter oilseed rape and cabbage as surrogate scenario for flax, breadseed poppy, mustard, hemp – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Flax	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Breadseed poppy	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Mustard	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Hemp	Aclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Spring oilseed rape as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Winter oilseed rape as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Cabbage as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8.2-8 Tobacco and pome fruit (apple) as surrogate scenario for tobacco – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Tobacco	Aclonifen	1500	Spray	1	n/a	Before planting
Representative use – risk envelope						
Tobacco	Aclonifen	1500	Spray	1	n/a	BCCH 00
Pome fruit (apple) as a surrogate crop for tobacco due to lack of scenarios	Aclonifen	1500	Spray	1	n/a	BCCH 00

Table 8.8.2-9 Cabbage and Pome fruit (apple) as surrogate scenario for forest nurseries plants, ornamental shrubs, basket willow, purple willow, forest trees, Christmas trees and energetic willow – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Forest nurseries plants (pine tree, spruce, fir tree, larch)	Aclonifen	1500 1170- 1800	Spray	1	n/a	When trees are dormant
Ornamental shrubs	Aclonifen	900 1170-1500	Spray	1	n/a	Immediately after planting
Basket willow	Aclonifen	900 1170-1500	Spray	1	n/a	Immediately after planting
Purple willow	Aclonifen	900 1170-1500	Spray	1	n/a	Immediately after planting
Forest tree	Aclonifen	900 1170-1500	Spray	1	n/a	Immediately after planting
Christmas tree	Aclonifen	900 1170-1500	Spray	1	n/a	Immediately after planting
Energetic willow	Aclonifen	900 1170-1500	Spray	1	n/a	Immediately after planting
Representative use – risk envelope						
Cabbage as a surrogate crop for ornamental shrubs due to lack of scenarios	Aclonifen	1500	Spray	1	n/a	BCCH 00
Pome fruit (apple) as a surrogate crop for forest nurseries plants, ornamental shrubs, basket willow, purple willow, forest tree, christmas tree, energetic willow due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.8-3: Input parameters related to application for PEC_{gw} calculations

Use No.	1, 12	2,3&6
Crop	Potatoe	Sunflower
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Relative application date	15 days before emergence	21 days before emergence
Crop interception (%)	0	0
Frequency of application	annual	annual
Models used for calculation	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4
Use No.	3&6	4,
Crop	Maize (surrogate crop)	Cabbage
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Relative application date	15 days before emergence	1 day before emergence
Crop interception (%)	0	0
Frequency of application	annual	annual
Models used for calculation	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4
Use No.	5,11	6,11
Crop	Soybean	Peas (surrogate crop)
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Relative application date	1 day before emergence	16 days before emergence
Crop interception (%)	0	0
Frequency of application	annual	annual
Models used for calculation	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4
Use No.	7,11	8,11
Crop	Beans (field) (surrogate crop)	Beans (vegetables) (surrogate crop)
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Relative application date	16 days before emergence	1 day before emergence
Crop interception (%)	0	0
Frequency of application	annual	annual
Models used for calculation	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4

Use No.	9. 7, 8, 9, 10	10. 7
Crop	Winter oilseed rape (surrogate crop)	Spring oilseed rape
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Relative application date	8 days before emergence	1 day before emergence
Crop interception (%)	0	0
Frequency of application	annual	annual
Models used for calculation	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4
Use No.	11. 14	12. 14,15, 16, 17, 18, 19, 20, 21
Crop	Tobacco	Pome fruit (surrogate crop)
Application rate (g as/ha)	1500	1800
Number of applications/interval (d)	1	1
Relative application date	1 day before emergence	1 day before emergence
Crop interception (%)	0	0
Frequency of application	annual	annual
Models used for calculation	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4	FOCUS PEARL v5.5.5. FOCUS PELMO v6.6.4

Table 8.8.4 Input parameters related to active substance Aclonifen for PEC_{gw} calculations

Compound	Aclonifen	Value in accordance with EU endpoint y/n/ Reference*
Molecular weight (g/mol)	264.7	EFSA Scientific Report (2008) 149, 1-80
Water solubility (mg/L):	1.4 (20°C)	EFSA Scientific Report (2008) 149, 1-80
Saturated vapour pressure (Pa):	0.321 x 10 ⁻⁴ (25°C)	EFSA Scientific Report (2008) 149, 1-80
DT ₅₀ in soil (d)	62.3 (geomean, normalisation to 10 kPa/pF2, 20 °C with Q ₁₀ of 2.2, n =10)	EFSA Scientific Report (2008) 149, 1-80
K _{foc} (mL/g)	6749 (geomethric mean, n = 3)	EFSA Scientific Report (2008) 149, 1-80
1/n	0.922 (arithmetic mean, n = 3)	EFSA Scientific Report (2008) 149, 1-80
Plant uptake factor	0	EFSA Scientific Report (2008) 149, 1-80

Table 8.8-5: PEC_{gw} for Aclonifen on Potato (with FOCUS PEARL 5.5.5)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Potatoe	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001
	Thiva	< 0.001

Table 8.8-6: PEC_{gw} for Aclonifen on Sunflower (with FOCUS PEARL 5.5.5)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Sunflower	Piacenza	< 0.001
	Sevilla	< 0.001

Table 8.8-7: PEC_{gw} for Aclonifen on Maize (with FOCUS PEARL 5.5.5) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Maize	Châteaudun	< 0.001
	Hamburg	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001

Table 8.8-8: PEC_{gw} for Aclonifen on Cabbage (with FOCUS PEARL 5.5.5)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Cabbage	Châteaudun	< 0.001

	Hamburg	< 0.001
	Jokioinen	< 0.001
	Kremsmünster	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001
	Thiva	< 0.001

Table 8.8-9: PEC_{gw} for Aclonifen on Soybean (with FOCUS PEARL 5.5.5)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Soybean	Piacenza	< 0.001

Table 8.8-10: PEC_{gw} for Aclonifen on Peas (with FOCUS PEARL 5.5.5) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Peas	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Okehampton	< 0.001

Table 8.8-11: PEC_{gw} for Aclonifen on Beans (field) (with FOCUS PEARL 5.5.5) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Beans (field)	Hamburg	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001

Table 8.8-12: PEC_{gw} for Aclonifen on Beans (vegetables) (with FOCUS PEARL 5.5.5) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Beans (vegetables)	Porto	< 0.001
	Thiva	< 0.001

Table 8.8-13: PEC_{gw} for Aclonifen on Winter oilseed rape (with FOCUS PEARL 5.5.5) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Winter oilseed rape	Châteaudun	< 0.001
	Hamburg	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001

Table 8.8-14: PEC_{gw} for Aclonifen on Spring oilseed rape (with FOCUS PEARL 5.5.5)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Spring oilseed rape	Jokioinen	< 0.001
	Okehampton	< 0.001
	Porto	< 0.001

Table 8.8-15: PEC_{gw} for Aclonifen on Pome fruit (Apple) (with FOCUS PEARL 5.5.5) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Pome fruit (Apple)	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001
	Thiva	< 0.001

Table 8.8-16: PEC_{gw} for Aclonifen on tobacco (with FOCUS PEARL 5.5.5)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Tobacco	Piacenza	< 0.001
	Thiva	< 0.001

Table 8.8-17: PEC_{gw} for Aclonifen on Potato (with FOCUS PELMO 6.6.4)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Potatoe	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001
	Thiva	< 0.001

Table 8.8-18: PEC_{gw} for Aclonifen on Sunflower (with FOCUS PELMO 6.6.4)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Sunflower	Piacenza	< 0.001
	Sevilla	< 0.001

Table 8.8-19: PEC_{gw} for Aclonifen on Maize (with FOCUS PELMO 6.6.4) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Maize	Châteaudun	< 0.001
	Hamburg	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001

Table 8.8-20: ~~PEC_{gw} for Aclonifen on Cabbage (with FOCUS PELMO 6.6.4)~~

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Cabbage	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Kremsmünster	< 0.001
	Porte	< 0.001
	Sevilla	< 0.001
	Thiva	< 0.001

Table 8.8-21: PEC_{gw} for Aclonifen on Soybean (with FOCUS PELMO 6.6.4)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Soybean	Piacenza	< 0.001

Table 8.8-22: PEC_{gw} for Aclonifen on Peas (with FOCUS PELMO 6.6.4) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Peas	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Okehampton	< 0.001

Table 8.8-23: PEC_{gw} for Aclonifen on Beans (field) (with FOCUS PELMO 6.6.4)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Beans (field)	Hamburg	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001

Table 8.8-24: PEC_{gw} for Aclonifen on Beans (vegetables) (with FOCUS PELMO 6.6.4) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Beans (vegetables)	Porto	< 0.001
	Thiva	< 0.001

Table 8.8-25: PEC_{gw} for Aclonifen on Winter oilseed rape (with FOCUS PELMO 6.6.4) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Winter oilseed rape	Châteaudun	< 0.001
	Hamburg	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001
	Piacenza	< 0.001
	Porto	< 0.001

Table 8.8-26: PEC_{gw} for Aclonifen on Spring oilseed rape (with FOCUS PELMO 6.6.4)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Spring oilseed rape	Jokioinen	< 0.001
	Okehampton	< 0.001
	Porto	< 0.001

Table 8.8-27: PEC_{gw} for Aclonifen on Pome fruit (Apple) (with FOCUS PELMO 6.6.4) - (surrogate crop)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Pome fruit (Apple)	Châteaudun	< 0.001
	Hamburg	< 0.001
	Jokioinen	< 0.001
	Kremsmünster	< 0.001
	Okehampton	< 0.001

	Piacenza	< 0.001
	Porto	< 0.001
	Sevilla	< 0.001
	Thiva	< 0.001

Table 8.8-28: PEC_{gw} for Aclonifen on tobacco (with FOCUS PELMO 6.6.4)

Crop	Scenario	80 th Percentile PEC _{gw} at 1 m Soil Depth (µg/L)
		Aclonifen
Tobacco	Piacenza	< 0.001
	Thiva	< 0.001

Calculations have shown that the PEC_{gw} for the AKO 600 SC formulation does not exceed European standards - its value is far from the maximum permissible concentration - 0.1 µg/L.
It should be assumed that the formulation intended uses presented in the GAP do not negatively affects ground-waters.

Evaluation by zRMS	PEC _{gw} (KCP 9.2.4)
Modelling	For the active substance aclonifen the calculations presented here are accepted. The applicant has used appropriate models for ground water FOCUS-PEARL 5.5.5, FOCUS-PELMO 6.6.4. PEC _{GW} values were calculated for single application: 1800 g a.s./ha, beyond tobacco. In general the applicant selected properly the surrogate crops for missing scenarios. zRMS considered that only the surrogate crop Leafy vegetables was not applicable. Input parameters used in FOCUS ground water modelling for active substance are correct.
PEC _{gw}	Results of modelling with FOCUS-PEARL 5.5.5, FOCUS-PELMO 6.6.4. show that the active substance aclonifen are not expected to penetrate into groundwater at concentrations of ≥ 0.1 µg/L in any of the intended uses for all scenarios.
Conclusion for risk assessment	Safe use - the maximum PEC _{GW} values for aclonifen for proposed uses in GAP Table were well below the trigger value of 0.1 µg/L.

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

8.9.1 Justification for new endpoints

According to EFSA Scientific Report (2008) 149, 1-80, no new endpoints were established.

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

In order to calculate PEC_{sw} values for crops presented in the GAP, risk envelopes with maximum applica-

Table 8.9.2-1 Potato – GAP – defined uses:

Table 8.9.2-2 Sunflower and maize as surrogate scenario for sunflower – GAP – defined uses:

Table 8.9.2-3 Leafy vegetables Legumes and potato as surrogate scenario for pumpkin – GAP – defined uses:

[illegible]

Leafy vegetables as a surrogate crop for pumpkin due to lack of scenarios	Acronifen	1800	Spray	1	n/a	BCCH 00
Surrogate crop: Legumes for D5 and R4 scenarios						
Potatoes as a surrogate crop for pumpkin due to lack of scenarios	Acronifen	1800	Spray	1	n/a	BCCH 00

Table 8.9.2-4 Soybean, beans and legumes as surrogate scenario for soybean – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Soybean	Acclonifen	1500 1170- 1800	Spray	1	n/a	BBCH 00-08
Representative use – risk envelope						
Soybean	Acclonifen	1800	Spray	1	n/a	BCCH 00
Beans as a surrogate crop for soybean due to lack of scenarios	Acclonifen	1800	Spray	1	n/a	BCCH 00
Legumes as a surrogate crop for soybean due to lack of scenarios	Acclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.9.2-6 Spring oilseed rape and leafy vegetables winter OSR and legumes as surrogate scenario for spring rapeseed – GAP – defined uses:

[illegible]

Table 8.9.2-7 Spring oilseed rape, winter oilseed rape and heavy vegetables legumes as surrogate scenario for flax, breadseed poppy, mustard, hemp – GAP – defined uses:

[illegible]

Spring oilseed rape as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Winter oilseed rape as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00
Cabbage as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios Legumes as a surrogate crop for flax, breadseed poppy, mustard and hemp due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.9.2-8 Tobacco and pome fruit (apple) as surrogate scenario for tobacco – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Tobacco	Aclonifen	1500	Spray	1	n/a	Before planting
Representative use – risk envelope						
Tobacco	Aclonifen	1500	Spray	1	n/a	BCCH 00
Pome fruit (apple) as a surrogate crop for tobacco due to lack of scenarios	Aclonifen	1500	Spray	1	n/a	BCCH 00

Table 8.9.2-9 ~~Leafy vegetables and~~ Pome fruit (apple) as surrogate scenario for forest nurseries plants, ornamental shrubs, basket willow, purple willow, forest trees, Christmas trees and energetic willow – GAP – defined uses:

Use	Active substance	Application rate (g a.s /ha)	Application method	Number of applications	Minimum application interval (days)	Application timing
Forest nurseries plants (pine tree, spruce, fir tree, larch)	Aclonifen	1500 1170- 1800	Spray	1	n/a	When trees are dormant
Ornamental shrubs	Aclonifen	900 1170- 1500	Spray	1	n/a	Immediately after planting
Basket willow	Aclonifen	900 1170- 1500	Spray	1	n/a	Immediately after planting
Purple willow	Aclonifen	900 1170- 1500	Spray	1	n/a	Immediately after planting
Forest tree	Aclonifen	900 1170- 1500	Spray	1	n/a	Immediately after planting
Christmas tree	Aclonifen	900 1170- 1500	Spray	1	n/a	Immediately after planting
Energetic willow	Aclonifen	900 1170- 1500	Spray	1	n/a	Immediately after planting
Representative use – risk envelope						
Leafy vegetables as a surrogate crop for ornamental shrubs due to lack of scenarios	Aclonifen	1500	Spray	1	n/a	BCCH 00
Pome fruit (apple) as a surrogate crop for forest nurseries plants, ornamental shrubs, basket willow, purple willow, forest tree, christmas tree, energetic willow due to lack of scenarios	Aclonifen	1800	Spray	1	n/a	BCCH 00

Table 8.9.3: Input parameters related to application for PEC_{SW/SED} calculations

Use No.	1, 8,9,10	2, 3&6
Crop	Potatoes	Sunflower
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Application window	30 days (AppDate ver. 3.06)	30 days (AppDate ver. 3.06)
Crop interception (%)	0	0
Frequency of application	annual	annual
CAM (Chemical application method)	Cannopy	Cannopy
Models used for calculation	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1
Use No.	3&6	4,
Crop	Maize	Leafy vegetables
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Application window	30 days (AppDate ver. 3.06)	30 days (AppDate ver. 3.06)
Crop interception (%)	0	0
Frequency of application	annual	annual
CAM (Chemical application method)	Cannopy	Cannopy
Models used for calculation	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1
Use No.	5-11	6-1,7,8,9,10, 11
Crop	Soybean	Legumes
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Application window	30 days (AppDate ver. 3.06)	30 days (AppDate ver. 3.06)
Crop interception (%)	0	0
Frequency of application	annual	annual
CAM (Chemical application method)	Cannopy	Cannopy
Models used for calculation	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1
Use No.	7-11	8-14, 15, 16, 17, 18, 19, 20, 21
Crop	Field beans	Pome fruit
Application rate (g as/ha)	1800	1800
Number of applications/interval	1	1

(d)		
Application window	30 days (AppDate ver. 3.06)	30 days (AppDate ver. 3.06)
Crop interception (%)	0	0
Frequency of application	annual	annual
CAM (Chemical application method)	Cannopy	Cannopy
Models used for calculation	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1
Use No.	9-7	10-7
Crop	Winter oilseed rape	Spring oilseed rape
Application rate (g as/ha)	1800	1800
Number of applications/interval (d)	1	1
Application window	30 days (AppDate ver. 3.06)	30 days (AppDate ver. 3.06)
Crop interception (%)	0	0
Frequency of application	annual	annual
CAM (Chemical application method)	Cannopy	Cannopy
Models used for calculation	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1
Use No.	11-14	
Crop	Tobacco	
Application rate (g as/ha)	1500	
Number of applications/interval (d)	1	
Application window	30 days (AppDate ver. 3.06)	
Crop interception (%)	0	
Frequency of application	annual	
CAM (Chemical application method)	Cannopy	
Models used for calculation	FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v4.4.3, SWAN 4.0.1, SWAN 5.0.1	

Table 8.9.4: FOCUS Step 3 Scenario related input parameters for PEC_{sw/sed} calculations for the application of AKO 600 SC

Crop	Scenario	Application window used in modelling
Potatoes (data used for both calculations: acetonif and clomazone – STEP 3 and 4)	D3	30.04 – 30.05
	D4	12.05 – 11.06
	D6	31.03 – 30.04
	R1	25.04 – 25.05
	R2	05.03 – 04.04

	R3	31.03 – 30.04
Crop	Scenario	Application window used in modelling
Soybean	R3	10.05 – 9.06
	R4	10.03 – 9.04
Crop	Scenario	Application window used in modelling
Sunflower	D5	21.04 – 21.05
	R1	21.04 – 21.05
	R3	05.04 – 05.05
	R4	20.03 – 19.04
Crop	Scenario	Application window used in modelling
Maize	D3	25.04 – 25.05
	D4	30.04 – 30.05
	D5	30.04 – 30.05
	D6	10.04 – 10.05
	R1	23.04 – 23.05
	R2	21.04 – 21.05
	R3	21.04 – 21.05
	R4	31.03 – 30.04
Crop	Scenario	Application window used in modelling
Winter oilseed rape	D2	15.09 – 15.10
	D3	2.09 – 2.10
	D4	3.09 – 3.10
	D5	20.09 – 20.10
	R1	4.09 – 4.10
	R3	5.10 – 4.11
Crop	Scenario	Application window used in modelling
Spring oilseed rape	D1	19.05 – 18.06
	D3	10.04 – 10.05
	D4	1.05 – 31.05
	D5	15.03 – 14.04
	R1	10.04 – 10.05
Crop	Scenario	Application window used in modelling
Beans (field)	D2	02.11 – 02.12
	D3	20.04 – 20.05
	D4	05.04 – 05.05
	D6	22.03 – 21.04
	R1	31.03 – 30.04

	R2	28.02 – 30.03
	R3	23.03 – 22.04
	R4	23.03 – 22.04
Crop	Scenario	Application window used in modelling
Leafy vegetables	D3	25.04 – 25.05
	D4	10.05 – 09.06
	D6	15.08 – 14.09
	R1	20.04 – 20.05
	R2	28.02 – 30.03
	R3	01.03 – 31.03
	R4	01.03 – 31.03
Crop	Scenario	Application window used in modelling
Legumes	D3	05.04 – 05.05
	D4	13.04 – 13.05
	D5	05.03 – 04.04
	D6	10.04 – 10.05
	R1	05.04 – 05.05
	R2	10.04 – 10.05
	R3	11.04 – 11.05
	R4	11.04 – 11.05
Crop	Scenario	Application window used in modelling
Tobacco	R3	10.05 – 09.06
Crop	Scenario	Application window used in modelling
Pome fruits	D3	15.04 – 15.05
	D4	20.04 – 20.05
	D5	01.04 – 01.05
	R1	15.04 – 15.05
	R2	15.03 – 14.04
	R3	01.04 – 01.05
	R4	15.03 – 14.04

Table 8.9-5: Input parameters related to active substance Aclonifen for PEC_{sw/sed} calculations STEP 1/2 and 3(4) (if necessary) and Clomazone (necessary for the tank risk assessment)

Compound	Aclonifen		Clomazone (input parameters necessary for the tank mix risk assessment)	
	Input value	Value in accordance to EU end-point y/n/ Reference	Input value	Value in accordance to EU end-point y/n/ Reference
Molecular weight (g/mol)	264.7	EFSA Scientific Report (2008) 149, 1-80	239.7	EFSA Scientific Report (2007) 109, 1-73
Saturated vapour pressure (Pa)	not required for Step 1+2 / 0.321×10^{-4} Pa (25°C)	EFSA Scientific Report (2008) 149, 1-80	not required for Step 1+2 / 1.92×10^{-2} Pa (97.5%, 25°C) (extrapolated)	EFSA Scientific Report (2007) 109, 1-73
Water solubility (mg/L)	1.4	EFSA Scientific Report (2008) 149, 1-80	1102	EFSA Scientific Report (2007) 109, 1-73
Diffusion coefficient in water (m ² /d)	not required for Step 1+2/ 4.3×10^{-5}	default	not required for Step 1+2/ 4.3×10^{-5}	default
Diffusion coefficient in air (m ² /d)	not required for Step 1+2/0.43	default	not required for Step 1+2/0.43	default
K _{foc} (mL/g)	6749 (geomethric mean, n = 3)	EFSA Scientific Report (2008) 149, 1-80	286.5 (arth. mean, n=4) 240.81 (geo. mean, n=4) (worst case)	EFSA Scientific Report (2007) 109, 1-73; Draft Renewal Assessment Report prepared according to the Commission Regulation (EU) N° 1107/2009 CLOMAZONE Volume 3 – B.8 (AS)
Freundlich Exponent 1/n	0.922 (arithmetic mean/median, n = 3)	EFSA Scientific Report (2008) 149, 1-80	0.88 (arth. mean, n=4)	EFSA Scientific Report (2007) 109, 1-73;
Plant Uptake	-	EFSA Scientific Report (2008) 149, 1-80	-	default
Wash-Off factor from Crop (1/mm)	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	default	not required for Step 1+2/ 0.05 (MACRO) 0.50 (PRZM)	default

DT _{50,soil} (d)	53.9 days for step 1 and 2; 62.3 days for step 3 (Geom. Mean, n = 10),	EFSA Scientific Report (2008) 149, 1-80	167.5 (In accordance with FOCUS SFO; maximum of n = 3 DT _{50lab} , 20°C, 100% FC) (worst case)	EFSA Scientific Report (2007) 109, 1-73;
DT _{50,water} (d)	4.4 days for step 1 and 2; 17.3 days for step 3 (worst case total system DT ₅₀)	EFSA Scientific Report (2008) 149, 1-80	52.5 (geometric mean of n = 2 DT ₅₀ in the whole system, 20°C)	EFSA Scientific Report (2007) 109, 1-73;
DT _{50,sed} (d)	1000 (worst case assumption)	EFSA Scientific Report (2008) 149, 1-80	1000	EFSA Scientific Report (2007) 109, 1-73;
DT _{50,whole system} (d)	4.4 days for step 1 and 2; 17.3 days for step 3 (worst case total system DT ₅₀)	EFSA Scientific Report (2008) 149, 1-80	52.5 (geometric mean of n = 2 DT ₅₀ in the whole system, 20°C)	EFSA Scientific Report (2007) 109, 1-73;

Regulatory acceptable concentration (RAC):

Parent - Aclonifen: 0.5 µg/L (*Pimephales promelas* – Toxicity - Growth, NOEC 0.005 mg/L)

8.9.3 PEC_{sw/sed}

Table 8.9-1.1: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to potatoes (dose: 1.8 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	76.56	Drainage/Run-off	48.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	ditch	9.372	Drainage	0.4938	6.973
D4	pond	0.3777	Drainage	0.2458	2.538
D4	stream	7.735	Drainage	0.02197	0.358
D6	ditch	9.268	Drainage	0.214	3.23
R1	pond	0.3928	Run-off	0.2603	7.472
R1	stream	6.475	Run-off	0.1834	36.22
R2	stream	8.575	Run-off	0.1149	240.7
R3	stream	9.144	Run-off	0.2972	28.44

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.2: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to potatoes (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS mode		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 ditch	0.8450			0.08432			0.08432		
D4 pond	0.1618			0.02031			0.02031		
D4 stream	0.8963			0.1427			0.1427		
D6 ditch	0.8356			0.1132			0.1132		
R1 pond	0.1648			0.05328			0.01617		
R1 stream	0.7503			0.5697			0.07489		
R2 stream	0.9936			0.2065			0.09919		
R3 stream	1.060			0.6536			0.1058		

Table 8.9-1.3 FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to potatoes (dose: 1.5 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	63.80	Drainage/Run-off	15.27 35.04	3370
Step 2	-----				
Northern Europe	March-May	13.80	Drainage/Run-off	7.66 9.30	721.85 734.67
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	ditch	7.809	Drainage	0.4114	5.817
D4	pond	0.3146	Drainage	0.2047	2.126
D4	stream	6.445	Drainage	0.01831	0.2983
D6	ditch	7.722	Drainage	0.1783	2.693
R1	pond	0.3271	Run-off	0.2166	6.239
R1	stream	5.395	Run-off	0.1508	30.87

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	63.80	Drainage/Run-off	15.27 35.04	3370
Step 2	-----				
Northern Europe	March-May	13.80	Drainage/Run-off	7.66 9.30	721.85 734.67
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
R2	stream	0.6045	Run-off	189.6	200.8
R3	stream	7.619	Run-off	0.2458	24.02

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.4: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to potatoes (dose: 1.5 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.07031		
D4 pond	0.01631		
D4 stream	0.1154		
D6 ditch	0.09129		
R1 pond	0.04381		
R1 stream	0.4682		
R2 stream	0.1694		
R3 stream	0.5365		

Table 8.9-1.5: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to potatoes (dose: 1.4 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	59.55	Drainage/Run-off	14.25 32.70	3150
Step 2	-----				
Northern Europe	March-May	12.88	Drainage/Run-off	7.15 8.68	673.73 685.69
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	ditch	7.288	Drainage	0.3839	5.432
D4	pond	0.2937	Drainage	0.191	1.988
D4	stream	6.016	Drainage	0.01708	0.2784
D6	ditch	7.207	Drainage	0.1664	2.514
R1	pond	0.3053	Run-off	0.202	5.828
R1	stream	5.035	Run-off	0.14	29.06
R2	stream	6.668	Run-off	0.849	186.5
R3	stream	7.111	Run-off	0.2287	22.53

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.6: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to potatoes (dose: 1.4 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.06575		
D4 pond	0.01501		
D4 stream	0.1064		
D6 ditch	0.08416		
R1 pond	0.04070		
R1 stream	0.4347		
R2 stream	0.1555		
R3 stream	0.4979		

Table 8.9-1.6.1: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to potatoes (dose: 1.2 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	51.04	Drainage/Run-off	12.21 28.03	2700
Step 2					
Northern Europe	March-May	11.04	Drainage/Run-off	6.13 7.44	577.48 587.74
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	ditch	6.247	Drainage	0.3289	4.660
D4	pond	0.2516	Drainage	0.1635	1.711
D4	stream	5.156	Drainage	0.0146	0.2386
D6	ditch	6.177	Drainage	0.1426	2.156
R1	pond	0.2615	Run-off	0.1729	5.004
R1	stream	4.315	Run-off	0.1187	25.38
R2	stream	5.715	Run-off	0.0748	161.5
R3	stream	6.095	Run-off	0.1948	19.53

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.6.2: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to potatoes (dose: 1.2 kg)

Scenario	STEP 4 Aclonifen					
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90
D3 Ditch		0.5634			0.05630	
D4 Pond		0.1079			0.01247	
D4 Stream		0.5973			0.08892	
D6 Ditch		0.5571			0.07016	
R1 Pond		0.1098			0.03452	
R1 Stream		0.4999			0.3681	
R2 Stream		0.6621			0.1329	
R3 Stream		0.7061			0.4213	

Summary made by zRMS

Potatoes – the lack of two relevant scenarios for Central Zone: D5 and R4

Surrogate crop: Legumes

The calculations of PEC_{sw}/sed for the following doses of acetonifin: 1.8 kg/ha and 0.8 kg/ha

Legumes

Dose: 1.8 kg/ Scenarios D5, R4/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
D5 Pond	Pond	0.3778	Drainage	0.2536	2.776
D5 Stream	Stream	7.786	Drainage	0.01320	0.2165
R4 Stream	Stream	6.469	Run-off	0.5472	172.3

Legumes

Dose: 1.8 kg/ Scenarios D5, R4/ STEP 4

Scenario	STEP 4 Alconifen					
	VFS					
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90
D5 Pond	0.1620			0.01636		
D5 Stream	0.9022			0.09006		
R4 Stream	1.159			1.159		

Legumes

Dose: 0.8 kg/ Scenarios D5, R4/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
D5	Pond	0.1678	Drainage	0.1123	1.261
D5	Stream	3.459	Drainage	0.005862	0.09618
R4	Stream	2.874	Run-off	0.2306	78.37

Legumes

Dose: 0.8 kg/ Scenarios D5, R4/ STEP 4

Scenario	STEP 4 Alconifen		
	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D5 pond	0.007264		
D5 stream	0.03993		
R4 stream	0.4819		

Table 8.9-1.7: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to sunflower (dose: 1.8 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	76.56	Drainage/Run-off	18.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D5	Pond	0.3779	Drainage	0.2498	2.600
D5	Stream	8.469	Drainage	0.02884	0.4693
R1	Pond	0.3952	Run-off	0.2730	8.083
R1	Stream	6.469	Run-off	0.1891	45.71
R3	Stream	9.138	Run-off	0.2820	33.48
R4	Stream	6.487	Run-off	0.5715	44.07

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.8: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to sunflower (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90

D5 pond	0.1620	0.01629	0.01629
D5 stream	0.9814	0.09796	0.09796
R1 pond	0.1653	0.05719	0.01617
R1 stream	0.7495	0.5821	0.3663
R3 stream	1.059	0.6882	0.1057
R4 stream	1.005	1.005	0.07669

Table 8.9-1.9: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to sunflower (dose: 1.5 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	63.80	Drainage/Run-off	15.27 35.04	3370
Step 2	-----				
Northern Europe	March-May	13.80	Drainage/Run-off	7.66 9.30	721.85 734.67
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D5	Pond	0.3148	Drainage	0.2080	2.177
D5	Stream	7.057	Drainage	0.02403	0.3910
R1	Pond	0.3291	Run-off	0.2253	6.750
R1	Stream	5.390	Run-off	0.1554	38.92
R3	Stream	7.614	Run-off	0.2333	28.25
R4	Stream	5.405	Run-off	0.4702	37.13

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.10: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to sunflower (dose: 1.5 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D5 pond	0.01351		
D5 stream	0.08157		
R1 pond	0.04702		
R1 stream	0.4783		
R3 stream	0.4648		
R4 stream	0.8253		

Table 8.9-1.11: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to sunflower (dose: 0.9 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	38.28	Drainage/Run-off	9.16 21.02	2020
Step 2	-----				
Northern Europe	March-May	8.28	Drainage/Run-off	4.60 5.58	433.11 440.80
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D5	Pond	0.1888	Drainage	0.1245	1.324
D5	Stream	4.233	Drainage	0.01441	0.2346
R1	Pond	0.1972	Run-off	0.1316	4.07
R1	Stream	3.233	Run-off	0.08972	24.79
R3	Stream	4.567	Run-off	0.1371	17.55
R4	Stream	3.242	Run-off	0.2721	22.95

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.12: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to sunflower (dose: 0.9 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D5 pond	0.008133		
D5 stream	0.04879		
R1 pond	0.02721		
R1 stream	0.2758		
R3 stream	0.3247		
R4 stream	0.4750		

Summary made by zRMS

Sunflower – the lack of two scenarios relevant for Central Zone: D3 and D4

Surrogate crop: Maize

The calculations of PEC_{sw}/sed for the following doses of aclonifen: 1.8kg/ha

Table 8.9-1.13: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to maize (dose: 1.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	76.56	Drainage/Run-off	18.32	4050
Step 2					
Northern Europe	March-May	16.55	Drainage/Run-off	9.19	866.22
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	0.08433 9.3740	Drainage	0.004469 0.5005	0.6527 7.0580
D4	Pond	0.01617 0.3777	Drainage	0.01001 0.2367	0.1249 2.4350
D4	Stream	0.09284 8.0260	Drainage	0.002346 0.03404	0.03550 0.5521
D5	Pond	0.01626	Drainage	0.01005	0.1196
D5	Stream	0.09251	Drainage	0.000188	0.003642
D6	Ditch	0.09314	Drainage	0.005576	0.08165
R1	Pond	0.05403	Run-off	0.03619	1.206
R1	Stream	0.5821	Run-off	0.04302	2.084
R2	Stream	0.1726	Run-off	0.008127	7.329
R3	Stream	0.5273	Run-off	0.03584	1.611
R4	Stream	1.105	Run-off	0.1336	3.795

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.14: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to maize (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 ditch	0.8452			0.08433			0.08433		
D4 pond	0.1619			0.01617			0.01617		
D4 stream	0.9300			0.09284			0.09284		
D5 pond	0.1619			0.01626			0.01626		
D5 stream	0.9268			0.09251			0.09251		
D6 ditch	0.8454			0.09314			0.09314		
R1 pond	0.1655			0.05403			0.01617		
R1 stream	0.7503			0.5821			0.07489		

R2 stream	0.9976	0.1726	0.09958
R3 stream	1.062	0.5273	0.1060
R4 stream	1.105	1.105	0.08213

Table 8.9-1.15: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to maize (dose: 1.5 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21-d-PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	—	63.80	Drainage/Run-off	15.27	3370
Step 2					
Northern Europe	March-May	13.80	Drainage/Run-off	7.66	721.85
Southern Europe	March-May	—	Drainage/Run-off	—	—
Step 3					
D3	Ditch	7.811	Drainage	0.4169	5.888
D4	Pond	0.3147	Drainage	0.1970	2.039
D4	Stream	6.688	Drainage	0.02836	0.4601
D5	Pond	0.3147	Drainage	0.1961	2.031
D5	Stream	6.664	Drainage	0.01355	0.2219
D6	Ditch	7.813	Drainage	0.5225	6.987
R1	Pond	0.3299	Run-off	0.2186	6.041
R1	Stream	5.395	Run-off	0.1531	29.17
R2	Stream	7.173	Run-off	0.05257	118.4
R3	Stream	7.634	Run-off	0.1380	19.75
R4	Stream	5.394	Run-off	0.4671	37.41

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.16: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to maize (dose: 1.5 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No-spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.07032		
D4 pond	0.01341		
D4 stream	0.07730		
D5 pond	0.01348		
D5 stream	0.07703		

D6 ditch	0.07504
R1 pond	0.04443
R1 stream	0.4783
R2 stream	0.1416
R3 stream	0.4331
R4 stream	0.9075

Table 8.9-1.17: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for acelonifen following single / multiple application(s) of AKO 600 SC to maize (dose: 0.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d PEC _{sw,twa} (µg/L)*	Max PEC _{sed} (µg/kg)*
Step 1	---	34.03	Drainage/Run-off	8.14	1800
Step 2					
Northern Europe	March-May	7.36	Drainage/Run-off	4.09	384.99
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	4.164	Drainage	0.2221	3.152
D4	Pond	0.1678	Drainage	0.1048	1.107
D4	Stream	3.565	Drainage	0.01512	0.2454
D5	Pond	0.1678	Drainage	0.1043	1.102
D5	Stream	3.553	Drainage	0.007225	0.1183
D6	Ditch	4.165	Drainage	0.2781	3.743
R1	Pond	0.1756	Run-off	0.1305	3.240
R1	Stream	2.876	Run-off	0.07791	16.76
R2	Stream	3.824	Run-off	0.02742	66.93
R3	Stream	4.070	Run-off	0.07345	11.25
R4	Stream	2.876	Run-off	0.2390	20.72

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.18: FOCUS Step 4 PEC_{sw} and PEC_{sed} for acelonifen following single / multiple application(s) of AKO 600 SC to maize (dose: 0.8 kg)

Scenario	Acelonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.03742		
D4 pond	0.007193		
D4 stream	0.04117		

D5 pond	0.007227
D5 stream	0.04102
D6 ditch	0.03743
R1 pond	0.02269
R1 stream	0.2431
R2 stream	0.07160
R3 stream	0.2197
R4 stream	0.4599

Table 8.9-1.19: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to spring oilseeds (dose: 1.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	76.56	Drainage/Run-off	18.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D1	Ditch	11.38	Drainage	1.377	16.84
D1	Stream	9.110	Drainage	0.03177	0.5167
D3	Ditch	11.32	Drainage	0.5431	7.756
D4	Pond	0.3899	Drainage	0.2662	2.860
D4	Stream	8.693	Drainage	0.02008	0.3282
D5	Pond	0.3901	Drainage	0.2618	2.864
D5	Stream	8.974	Run-off	0.01521	0.2495
R1	Pond	0.3996	Run-off	0.2617	6.586
R1	Stream	7.457	Run-off	0.1615	33.87

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.20: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to spring oilseeds (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D1 ditch	0.8489			0.08470			0.08470		
D1 stream	0.9159			0.09143			0.09143		

D3 ditch	0.8442	0.08424	0.08424
D4 pond	0.1618	0.01617	0.01617
D4 stream	0.8740	0.08724	0.08724
D5 pond	0.1620	0.01637	0.01637
D5 stream	0.9022	0.09006	0.09006
R1 pond	0.1637	0.04495	0.01617
R1 stream	0.7497	0.5148	0.3017

Table 8.9-1.21: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to spring oilseeds (dose: 1.7 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	72.31	Drainage/Run-off	17.30 39.71	3820
Step 2	-----				
Northern Europe	March-May	15.63	Drainage/Run-off	8.68 10.54	818.10 832.63
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D1	Ditch	10.75	Drainage	1.301	15.92
D1	Stream	8.604	Drainage	0.03001	0.2326
D3	Ditch	10.69	Drainage	0.5128	7.328
D4	Pond	0.3682	Drainage	0.2513	2.705
D4	Stream	8.210	Drainage	0.01897	0.3100
D5	Pond	0.3684	Drainage	0.2472	2.709
D5	Stream	8.475	Run-off	0.01437	0.2356
R1	Pond	0.3773	Run-off	0.2471	6.225
R1	Stream	7.043	Run-off	0.1518	32.21

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.22: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to spring oilseeds (dose: 1.7 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D1 ditch	0.08012		
D1 stream	0.08643		
D3 ditch	0.07968		

D4 pond	0.01528
D4 stream	0.08247
D5 pond	0.01547
D5 stream	0.08513
R1 pond	0.04229
R1 stream	0.4838

Summary made by zRMS

Spring oilseeds – the lack of two scenarios relevant for Central Zone: R3 and R4

Surrogate crop: winter OSR for R3 scenario and Legumes for R4 scenarios

The calculations of PEC_{sw}/sed for the following doses of acelonifen: 1.8kg/ha and 1.3 kg/ha for scenario R3

The calculations of PEC_{sw}/sed for the following doses of acelonifen: 1.8kg/ha and 0.8 kg/ha for scenario R4

Winter OSR

Dose: 1.8 kg/ Scenario R3/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
R3	Stream	10.47	Run-off	0.3030	55.10

Winter OSR

Dose: 1.8 kg/ Scenario R3/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
R3 stream	1.053			0.6532			-		

Winter OSR

Dose: 1.3 kg/ Scenario R3/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
R3	Stream	7.560	Run-off	0.2155	40.41

Winter OSR

Dose: 1.3 kg/ Scenario R3/ STEP 4

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
R3 stream	0.4590		

Legumes

Dose: 1.8 kg/ Scenario R4/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
R4	Stream	6.469	Run-off	0.5472	172.3

Dose: 1.8 kg/ Scenario R4/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
R4 Stream	1.159			1.159			-		

Legumes

Dose: 0.8 kg/ Scenario R4/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
R4	Stream	2.874	Run-off	0.2306	78.37

Legumes

Dose: 0.8 kg/ Scenario R4/ STEP 4

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
R4 stream	0.4819		

Table 8.9-1.23: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to winter oilseeds (dose: 1.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	76.56	Drainage/Run-off	18.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D2	Ditch	11.47	Drainage	3.511	39.84
D2	Stream	10.20	Drainage	3.024	35.42
D3	Ditch	11.37	Drainage	0.9523	12.49
D4	Pond	0.3901	Drainage	0.2513	2.705
D4	Stream	9.794	Drainage	0.1341	2.119
D5	Pond	0.3902	Drainage	0.2405	2.543
D5	Stream	10.57	Run-off	0.1915	2.977
R1	Pond	0.4087	Run-off	0.2716	6.580
R1	Stream	7.487	Run-off	0.1183	12.41
R3	Stream	10.47	Run-off	0.3030	55.10

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.24: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to winter oilseeds (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D2 ditch	0.8558			0.08573			-		
D2 stream	1.026			0.1025			-		
D3 ditch	0.8481			0.08462			-		
D4 pond	0.1619			0.01751			-		
D4 stream	0.9846			0.1606			-		
D5 pond	0.1620			0.01622			-		
D5 stream	1.062			0.1060			-		
R1 pond	0.1656			0.06870			-		
R1 stream	0.7527			0.4672			-		
R3 stream	1.053			0.6532			-		

Table 8.9-1.25: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to winter oilseeds (dose: 1.3 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	55.29	Drainage/Run-off	13.23 30.37	2920
Step 2	-----				
Northern Europe	March-May	11.96	Drainage/Run-off	6.64 8.06	625.61 636.72
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D2	Ditch	8.283	Drainage	2.531	28.92
D2	Stream	7.369	Drainage	2.180	25.71
D3	Ditch	8.212	Drainage	0.6872	9.048
D4	Pond	0.2816	Drainage	0.1812	1.971
D4	Stream	7.072	Drainage	0.09683	1.531
D5	Pond	0.2817	Drainage	0.1734	1.852
D5	Stream	7.630	Run-off	0.1382	2.151
R1	Pond	0.2949	Run-off	0.1922	4.748
R1	Stream	5.406	Run-off	0.08359	9.234
R3	Stream	7.560	Run-off	0.2155	40.41

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.26: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to winter oilseeds (dose: 1.3 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D2 ditch	0.06181		
D2 stream	0.07414		
D3 ditch	0.06108		
D4 pond	0.01190		
D4 stream	0.1096		
D5 pond	0.01166		
D5 stream	0.07670		
R1 pond	0.04859		
R1 stream	0.3294		
R3 stream	0.4590		

Table 8.9-1.27: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to legumes (dose: 1.8 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	76.56	Drainage/Run-off	18.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	9.357	Drainage	0.4195	6.047
D4	Pond	0.3776	Drainage	0.2594	2.802
D4	Stream	7.497	Drainage	0.01662	0.2716
D5	Pond	0.3778	Drainage	0.2536	2.776
D5	Stream	7.786	Drainage	0.01320	0.2165
D6	Ditch	9.376	Drainage	0.6263	8.372
R1	Pond	0.3900	Run-off	0.2555	5.634
R1	Stream	6.476	Run-off	0.1386	22.15
R2	Stream	8.610	Run-off	0.04954	91.80
R3	Stream	9.162	Run-off	0.3248	265.2
R4	Stream	6.469	Run-off	0.5472	172.3

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.28: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to legumes (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 Ditch	0.8437			0.08419			-		
D4 Pond	0.1618			0.01617			-		
D4 Stream	0.8687			0.1107			-		
D5 Pond	0.1620			0.01636			-		
D5 Stream	0.9022			0.09006			-		
D6 Ditch	0.8454			0.08436			-		
R1 Pond	0.1643			0.03553			-		
R1 Stream	0.3101			0.4980			-		
R2 Stream	0.9977			0.1391			-		

R3 Stream	1.062	0.6872	-
R4 Stream	1.159	1.159	-

Table 8.9-1.29: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to legumes (dose: 0.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	34.03	Drainage/Run-off	8.14 18.69	1800
Step 2	-----				
Northern Europe	March-May	7.36	Drainage/Run-off	4.09 4.96	384.99 391.83
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	4.157	Drainage	0.1862	2.699
D4	Pond	0.1677	Drainage	0.1149	1.273
D4	Stream	3.330	Drainage	0.007384	0.1207
D5	Pond	0.1678	Drainage	0.1123	1.261
D5	Stream	3.459	Drainage	0.005862	0.09618
D6	Ditch	4.165	Drainage	0.2776	3.743
R1	Pond	0.1730	Run-off	0.1129	2.52
R1	Stream	2.877	Run-off	0.05796	10.99
R2	Stream	3.825	Run-off	0.02162	43.97
R3	Stream	4.070	Run-off	0.1399	119.1
R4	Stream	2.874	Run-off	0.2306	78.37

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.30: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to legumes (dose: 0.8 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.03735		
D4 pond	0.007190		
D4 stream	0.04309		
D5 pond	0.007264		
D5 stream	0.03993		
D6 ditch	0.03743		

R1 pond	0.01508
R1 stream	0.2077
R2 stream	0.05781
R3 stream	0.2850
R4 stream	0.4819

zRMS comment

Spring oilseed rape, winter oilseed rape and legumes are the surrogate crops for flax, breadseed poppy, mustard and hemp due to lack of scenarios. Thus for this crops should be used PEC_{sw}/sed calculated above.

Table 8.9-1.31: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to soybeans (dose: 1.8 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	76.56	Drainage/Run-off	18.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
R3	Stream	9.112	Run-off	0.2393	33.52
R4	Stream	6.464	Run-off	0.4174	26.08

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary.

Table 8.9-1.32: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to soybeans (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
R3 Stream	1.056			0.6245			-		
R4 Stream	0.7490			0.7230			-		

Table 8.9-1.33: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to soybeans (dose: 1.2 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	51.04	Drainage/Run-off	12.21 28.04	2700
Step 2	-----				
Northern Europe	March-May	11.04	Drainage/Run-off	6.13 7.44	577.48 587.74
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
R3	Stream	6.073	Run-off	0.1571	22.98
R4	Stream	4.308	Run-off	0.2707	17.95

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.34: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to soybeans (dose: 1.2 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	50
R3 stream	0.4022		
R4 stream	0.4684		

Summary made by zRMS

Soybeans – the lack of four scenarios relevant for Central Zone: D3, D4, D5 and R1

Surrogate crop: field beans for D3, D4, R1 scenarios and legumes for D5 scenario

The calculations of PEC_{sw}/sed for the following doses of aclonifen: 1.8kg/ha and 0.9 kg/ha for scenario D3, D4, R1

The calculations of PEC_{sw}/sed for the following doses of aclonifen: 1.8kg/ha and 0.8 kg/ha for scenario D5

Field beans

Dose: 1.8 kg/ Scenarios:D3, D4, R1/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
D3	Ditch	9.367	Drainage	0.4688	6.663
D4	Pond	0.3776	Drainage	0.2594	2.802
D4	Stream	7.497	Drainage	0.01662	0.2716

R1	Pond	0.3885	Run-off	0.2595	7.332
R1	Stream	6.467	Run-off	0.1793	38.17

Field beans

Dose: 1.8 kg/ Scenarios:D3, D4, R1/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 Ditch	0.8445			0.08427			0.08427		
D4 Pond	0.1618			0.01617			0.01617		
D4 Stream	0.8687			0.08671			0.08671		
R1 Pond	0.1640			0.05331			0.01617		
R1 Stream	0.7493			0.5503			0.3371		

Field beans

Dose: 0.9 kg/ Scenarios:D3, D4, R1/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
D3	Ditch	4.681	Drainage	0.2341	3.345
D4	Pond	0.1887	Drainage	0.1293	1.428
D4	Stream	3.747	Drainage	0.008307	-0.1358
R1	Pond	0.1939	Run-off	0.1267	3.695
R1	Stream	3.232	Run-off	0.08511	20.72

Field beans

Dose: 0.9 kg/ Scenarios:D3, D4, R1/ STEP 4

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.04227		
D4 pond	0.00808		
D4 stream	0.04319		
R1 pond	0.02538		
R1 stream	0.2607		

Legumes

Dose: 1.8 kg/ Scenarios: D5/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 3					
D5	Pond	0.3778	Drainage	0.2536	2.776
D5	Stream	7.786	Drainage	0.01320	0.2165

Legumes

Dose: 1.8 kg/ Scenarios: D5/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D5 Pond	0.1620			0.01636			-		
D5 Stream	0.9022			0.09006			-		

Legumes

Dose: 0.8 kg/ Scenarios: D5/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
D5	Pond	0.1678	Drainage	0.1123	1.261
D5	Stream	3.459	Drainage	0.005862	0.09618

Legumes

Dose: 0.8 kg/ Scenarios: D5/ STEP 4

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D5 pond	0.007264		
D5 stream	0.03993		

Table 8.9-1.35: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to tobacco (dose: 1.5 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	63.80	Drainage/Run-off	15.27 35.04	3370
Step 2	-----				
Northern Europe	March-May	13.80	Drainage/Run-off	7.66 9.30	721.85 734.67
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
R3	Stream	7.004	Run-off	0.2045	36.09

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.36: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to tobacco (dose: 1.5 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
R3 Stream	0.8819			0.5357			-		

Table 8.9-1.37: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to tobacco (dose: 1.4 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	59.55	Drainage/Run-off	14.25 32.70	3150
Step 2	-----				
Northern Europe	March-May	12.88	Drainage/Run-off	7.15 8.68	673.73 685.69
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
R3	Stream	6.537	Run-off	0.1903	33.87

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.38: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to tobacco (dose: 1.4 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
R3 stream	0.4972		

Summary made by zRMS

Tobacco – the lack of five scenarios relevant for Central Zone: D3, D4, D5, R1 and R4

Surrogate crop: pome fruits for D3, D4, D5, R1, R4 scenarios

The calculations of PEC_{sw}/sed for the following doses of aclonifen: 1.8kg/ha and 1.4 kg/ha for D3, D4, D5, R1, R4 scenarios.

Pome fruits

Dose: 1.8 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
D3	Ditch	138.9	Drainage	7.378	101.6
D4	Pond	8.433	Drainage	5.853	57.10
D4	Stream	131.4	Drainage	0.3033	4.950
D5	Pond	8.434	Drainage	5.762	56.33
D5	Stream	137.8	Drainage	0.2604	4.247
R1	Pond	8.433	Run-off	5.551	52.58
R1	Stream	112.3	Run-off	0.9005	14.47
R4	Stream	112.4	Run-off	0.9071	14.57

Pome fruits

Dose: 1.8 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 4

Scenario	STEP 4 Alconifen					
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduc- tion [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduc- tion [%]
	20	90	0	20	90	90
D3 Ditch	0.4208			0.04197		
D4 Pond	0.09153			0.009163		
D4 Stream	0.4350			0.04972		
D5 Pond	0.09157			0.009204		
D5 Stream	0.4564			0.04558		
R1 Pond	0.09153			0.009163		
R1 Stream	0.3720			0.3071		

R4 Stream	1.024	0.6354
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Pome fruits

Dose: 1.4 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 3					
D3	Ditch	108.1	Drainage	5.735	79.20
D4	Pond	6.558	Drainage	4.547	44.73
D4	Stream	102.2	Drainage	0.2358	3.850
D5	Pond	6.559	Drainage	4.476	44.13
D5	Stream	107.2	Drainage	4.244	3.303
R1	Pond	6.558	Run-off	4.312	41.19
R1	Stream	87.37	Run-off	0.7003	11.26
R4	Stream	87.39	Run-off	0.7054	11.33

Pome fruits

Dose: 1.4 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 4

Scenario	STEP 4 Alconifen						VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	90	0	20	90	90	-	-	-
D3 Ditch	0.3272			0.03253			-		
D4 Pond	0.07117			0.007092			-		
D4 Stream	0.3383			0.03699			-		
D5 Pond	0.07121			0.007122			-		
D5 Stream	0.3550			0.03557			-		
R1 Pond	0.07117			0.007092			-		
R1 Stream	0.2893			0.2345			-		
R4 Stream	0.4868			0.4868			-		

Table 8.9-1.39: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for acelonifen following single / multiple application(s) of AKO 600 SC to leafy vegetables (dose: 1.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	76.56	Drainage/Run-off	18.32 42.05	4050
Step 2	-----				

Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	11.33	Drainage	0.5923	8.362
D4	Pond	0.3899	Drainage	0.2540	2.626
D4	Stream	8.881	Drainage	0.02432	0.3965
D6	Ditch	11.09	Drainage	0.1440	2.291
R1	Pond	0.4941	Run-off	0.3032	12.36
R1	Stream	7.465	Run-off	0.1715	140.0
R2	Stream	9.792	Run-off	0.09121	80.93
R3	Stream	10.49	Run-off	0.2719	91.31
R4	Stream	7.456	Run-off	0.4461	34.32

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.40: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to leafy vegetables (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 Ditch	0.8450			0.08431			0.08431		
D4 Pond	0.1618			0.01889			0.01889		
D4 Stream	0.8928			0.1341			0.1341		
D6 Ditch	0.8267			0.5082			0.5082		
R1 Pond	0.1643			0.09938			0.01617		
R1 Stream	0.7505			0.5291			0.07492		
R2 Stream	0.9844			0.1569			0.09827		
R3 Stream	1.055			0.6656			0.1053		
R4 Stream	0.8744			0.8744			0.07482		

Table 8.9-1.41: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to leafy vegetables (dose: 1.6 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	68.06	Drainage/Run-off	16.28 37.38	3600
Step 2	-----				

Northern Europe	March-May	14.71	Drainage/Run-off	8.17 9.92	769.98 783.65
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	10.07	Drainage	0.5263	7.438
D4	Pond	0.3466	Drainage	0.2257	2.342
D4	Stream	7.893	Drainage	0.02161	0.3524
D6	Ditch	9.853	Drainage	0.1280	2.036
R1	Pond	0.4358	Run-off	0.2674	11.03
R1	Stream	6.635	Run-off	0.1511	126.2
R2	Stream	8.703	Run-off	0.08034	72.63
R3	Stream	9.323	Run-off	0.2406	82.54
R4	Stream	6.627	Run-off	0.3937	31.09

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.42: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / ~~multiple ap-
plication(s)~~ of AKO 600 SC to leafy vegetables (dose: 1.6 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.07487		
D4 pond	0.01640		
D4 stream	0.1169		
D6 ditch	0.4405		
R1 pond	0.08762		
R1 stream	0.4658		
R2 stream	0.1380		
R3 stream	0.5858		
R4 stream	0.7706		

Table 8.9-1.43: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / ~~mul-
tiple application(s)~~ of AKO 600 SC to leafy vegetables (dose: 1 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	42.53	Drainage/Run-off	40.48 23.36	2250
Step 2	-----				
Northern Europe	March-May	9.20	Drainage/Run-off	5.11 6.20	481.24 489.78

Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	6.293	Drainage	0.3286	4.662
D4	Pond	0.2165	Drainage	0.1407	1.483
D4	Stream	4.932	Drainage	0.01350	0.2202
D6	Ditch	6.156	Drainage	0.07995	1.273
R1	Pond	0.2642	Run-off	0.1621	7.010
R1	Stream	4.146	Run-off	0.09111	83.29
R2	Stream	5.438	Run-off	0.04838	47.10
R3	Stream	5.826	Run-off	0.1476	55.13
R4	Stream	4.141	Run-off	0.2391	20.98

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.44: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to leafy vegetables (dose: 1 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.04685		
D4 pond	0.009316		
D4 stream	0.06755		
D6 ditch	0.2488		
R1 pond	0.05306		
R1 stream	0.2807		
R2 stream	0.08284		
R3 stream	0.3518		
R4 stream	0.4650		

Table 8.9-1.45: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to field beans (dose: 1.8 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	76.56	Drainage/Run-off	48.32 42.05	4050
Step 2	-----				
Northern Europe	March-May	16.55	Drainage/Run-off	9.19 11.16	866.22 881.61
Southern Europe	March-May	-	Drainage/Run-off	-	-

Step 3					
D2	Ditch	9.451	Drainage	1.516	19.87
D2	Stream	8.367	Drainage	0.06767	1.075
D3	Ditch	9.367	Drainage	0.4688	6.663
D4	Pond	0.3776	Drainage	0.2594	2.802
D4	Stream	7.497	Drainage	0.01662	0.2716
D6	Ditch	9.268	Drainage	0.2142	3.228
R1	Pond	0.3885	Run-off	0.2595	7.332
R1	Stream	6.467	Run-off	0.1793	38.17
R2	Stream	8.515	Run-off	0.09723	90.54
R3	Stream	9.111	Run-off	0.1779	19.12
R4	Stream	6.479	Run-off	0.5475	42.14

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.46: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to field beans (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D2 Ditch	0.8522			0.08512			0.08512		
D2 Stream	0.9695			0.09678			0.09678		
D3 Ditch	0.8445			0.08427			0.08427		
D4 Pond	0.1618			0.01617			0.01617		
D4 Stream	0.8687			0.08671			0.08671		
D6 Ditch	0.8356			0.09641			0.09641		
R1 Pond	0.1640			0.05331			0.01617		
R1 Stream	0.7493			0.5503			0.3371		
R2 Stream	0.9866			0.1685			0.09848		
R3 Stream	1.056			0.6251			0.1054		
R4 Stream	1.047			1.047			0.07656		

Table 8.9-1.47: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to field beans (dose: 1.5 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	63.80	Drainage/Run-off	15.27 35.04	3370
Step 2	-----				

Northern Europe	March-May	13.80	Drainage/Run-off	7.66 9.30	721.85 734.67
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D2	Ditch	7.875	Drainage	1.262	16.59
D2	Stream	6.972	Drainage	0.05629	0.8948
D3	Ditch	7.805	Drainage	0.3905	5.558
D4	Pond	0.3146	Drainage	0.2160	2.346
D4	Stream	6.247	Drainage	0.01385	0.2263
D6	Ditch	7.722	Drainage	0.1785	2.692
R1	Pond	0.3236	Run-off	0.2142	6.122
R1	Stream	5.389	Run-off	0.1474	32.51
R2	Stream	7.095	Run-off	0.07987	76.70
R3	Stream	7.592	Run-off	0.1462	16.02
R4	Stream	5.399	Run-off	0.4507	35.49

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.48: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to field beans (dose: 1.5 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D2 ditch	0.07096		
D2 stream	0.08059		
D3 ditch	0.07027		
D4 pond	0.01340		
D4 stream	0.07220		
D6 ditch	0.07762		
R1 pond	0.04383		
R1 stream	0.4522		
R2 stream	0.1382		
R3 stream	0.5131		
R4 stream	0.8598		

Table 8.9-1.49: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to field beans (dose: 0.9 kg)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	38.28	Drainage/Run-off	9.16	2020

				21.02	
Step 2	-----				
Northern Europe	March-May	8.28	Drainage/Run-off	4.60 5.58	433.11 440.80
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D2	Ditch	4.723	Drainage	0.7561	9.997
D2	Stream	4.182	Drainage	0.03364	0.5356
D3	Ditch	4.681	Drainage	0.2341	3.345
D4	Pond	0.1887	Drainage	0.1293	1.428
D4	Stream	3.747	Drainage	0.008307	-0.1358
D6	Ditch	4.632	Drainage	0.1070	1.617
R1	Pond	0.1939	Run-off	0.1267	3.695
R1	Stream	3.232	Run-off	0.08511	20.72
R2	Stream	4.256	Run-off	0.04604	48.18
R3	Stream	4.554	Run-off	0.08431	9.793
R4	Stream	3.238	Run-off	0.2613	21.96

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.50: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to field beans (dose: 0.9 kg)

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D2 ditch	0.04267		
D2 stream	0.04821		
D3 ditch	0.04227		
D4 pond	0.00808		
D4 stream	0.04319		
D6 ditch	0.04226		
R1 pond	0.02538		
R1 stream	0.2607		
R2 stream	0.07937		
R3 stream	0.2952		
R4 stream	0.4947		

Table 8.9-1.51: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to pome fruits (dose: 1.8 kg)

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	235.19	Drainage/Run-off	26.34 56.17	4050
Step 2	-----				
Northern Europe	March-May	175.18	Drainage/Run-off	26.81 30.75	1800 1910
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	138.9	Drainage	7.378	101.6
D4	Pond	8.433	Drainage	5.853	57.10
D4	Stream	131.4	Drainage	0.3033	4.950
D5	Pond	8.434	Drainage	5.762	56.33
D5	Stream	137.8	Drainage	0.2604	4.247
R1	Pond	8.433	Run-off	5.551	52.58
R1	Stream	112.3	Run-off	0.9005	14.47
R2	Stream	148.8	Run-off	0.6027	10.04
R3	Stream	159.0	Run-off	2.532	37.58
R4	Stream	112.4	Run-off	0.9071	14.57

Maximum value of PEC_{sw} scenarios (STEP 3) exceeds the RAC value. Therefore, step 4 calculations are necessary

Table 8.9-1.52: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single / multiple application(s) of AKO 600 SC to pome fruits (dose: 1.8 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 Ditch	15.31			1.529			1.529		
D4 Pond	1.682			0.1679			0.1679		
D4 Stream	15.83			1.581			1.581		
D5 Pond	1.682			0.1680			0.1680		
D5 Stream	16.61			1.658			1.658		
R1 Pond	1.682			0.1679			0.1679		
R1 Stream	13.54			1.352			1.352		
R2 Stream	17.94			1.791			1.791		
R3 Stream	19.16			1.913			1.913		

R4 Stream	13.54			1.352			1.352
Scenario	STEP 4 Alconifen						
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	
	20	90	0	20	90	90	
D3 Ditch	0.4208			0.04197			
D4 Pond	0.09153			0.009163			
D4 Stream	0.4350			0.04972			
D5 Pond	0.09157			0.009204			
D5 Stream	0.4564			0.04558			
R1 Pond	0.09153			0.009163			
R1 Stream	0.3720			0.3071			
R2 Stream	0.4929			0.1678			
R3 Stream	0.5894			0.5894			
R4 Stream	1.024			0.6354			

Table 8.9-1.53: **FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for acelonifen following single / multiple application(s) of AKO 600 SC to pome fruits (dose: 1.4 kg)**

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 1	---	182.93	Drainage/Run-off	20.49 43.69	3150
Step 2	-----				
Northern Europe	March-May	136.25	Drainage/Run-off	20.85 25.44	1400 1490
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					
D3	Ditch	108.1	Drainage	5.735	79.20
D4	Pond	6.558	Drainage	4.547	44.73
D4	Stream	102.2	Drainage	0.2358	3.850
D5	Pond	6.559	Drainage	4.476	44.13
D5	Stream	107.2	Drainage	4.244	3.303
R1	Pond	6.558	Run-off	4.312	41.19
R1	Stream	87.37	Run-off	0.7003	11.26
R2	Stream	115.8	Run-off	0.4682	7.862
R3	Stream	123.6	Run-off	1.967	29.25
R4	Stream	87.39	Run-off	0.7054	11.33

Table 8.9-1.54: FOCUS Step 4 PEC_{sw} and PEC_{sed} for aclonifen following single /multiple application(s) of AKO 600 SC to pome fruits (dose: 1.4 kg)

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	90	0	20	90	90	-	-	-
D3 Ditch	0.3272			0.03253			-		
D4 Pond	0.07117			0.007092			-		
D4 Stream	0.3383			0.03699			-		
D5 Pond	0.07121			0.007122			-		
D5 Stream	0.3550			0.03557			-		
R1 Pond	0.07117			0.007092			-		
R1 Stream	0.2893			0.2345			-		
R2 Stream	0.3833			0.1279			-		
R3 Stream	0.4490			0.4490			-		
R4 Stream	0.4868			0.4868			-		

Summary made by zRMS

Pumpkin – the lack of the scenarios relevant for Central Zone: D3, D4, D5, R1, R3 and R4

Surrogate crop: potatoes for D3, D4, R1, R3 scenarios and legumes for D5, R4 scenarios

The calculations of PEC_{sw}/sed for the following doses of aclonifen: 1.8kg/ha and 1.4 kg/ha for D3, D4, R1, R3 scenarios

The calculations of PEC_{sw}/sed for the following doses of aclonifen: 1.8kg/ha and 0.8 kg/ha for D5 and R4 scenarios

Potatoes

Dose: 1.8 kg/ Scenarios:D3, D4, R1, R3/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
D3	ditch	9.372	Drainage	0.4938	6.973
D4	pond	0.3777	Drainage	0.2458	2.538
D4	stream	7.735	Drainage	0.02197	0.358
R1	pond	0.3928	Run-off	0.2603	7.472
R1	stream	6.475	Run-off	0.1834	36.22
R3	stream	9.144	Run-off	0.2972	28.44

Potatoes

Dose: 1.8 kg/ Scenarios:D3, D4, R1, R3/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS mode		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D3 ditch	0.8450			0.08432			0.08432		
D4 pond	0.1618			0.02031			0.02031		
D4 stream	0.8963			0.1427			0.1427		
R1 pond	0.1648			0.05328			0.01617		
R1 stream	0.7503			0.5697			0.07489		
R3 stream	1.060			0.6536			0.1058		

Potatoes

Dose: 1.4 kg/ Scenarios: D3, D4, R1, R3/ STEP 3

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 3					
D3	ditch	7.288	Drainage	0.3839	5.432
D4	pond	0.2937	Drainage	0.191	1.988
D4	stream	6.016	Drainage	0.01708	0.2784
R1	pond	0.3053	Run-off	0.202	5.828
R1	stream	5.035	Run-off	0.14	29.06
R3	stream	7.111	Run-off	0.2287	22.53

Potatoes

Dose: 1.4 kg/ Scenarios: D3, D4, R1, R3/ STEP 4

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D3 ditch	0.06575		
D4 pond	0.01501		
D4 stream	0.1064		
R1 pond	0.04070		
R1 stream	0.4347		
R3 stream	0.4979		

Legumes

Dose: 1.8 kg/ Scenarios: D5, R4/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 3					
D5	Pond	0.3778	Drainage	0.2536	2.776
D5	Stream	7.786	Drainage	0.01320	0.2165
R4	Stream	6.469	Run-off	0.5472	172.3

Legumes

Dose: 1.8 kg/ Scenarios: D5, R4/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90	20	20	90
D5 Pond	0.1620			0.01636			-		
D5 Stream	0.9022			0.09006			-		
R4 Stream	1.159			1.159			-		

Legumes

Dose: 0.8 kg/ Scenarios: D5, R4/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
D5	Pond	0.1678	Drainage	0.1123	1.261
D5	Stream	3.459	Drainage	0.005862	0.09618
R4	Stream	2.874	Run-off	0.2306	78.37

Legumes

Dose: 0.8 kg/ Scenarios: D5, R4/ STEP 4

Scenario	Aclonifen		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	90
D5 pond	0.007264		
D5 stream	0.03993		
R4 stream	0.4819		

Summary made by zRMS

Trees, ornamental shrubs – the lack of five scenarios relevant for Central Zone: D3, D4, D5, R1 and R4

Surrogate crop: pome fruits for D3, D4, D5, R1, R4 scenarios

The calculations of PEC_{sw}/sed for the following doses of acelonifen: 1.8kg/ha and 1.4 kg/ha for D3, D4, D5, R1, R4 scenarios.

Pome fruits

Dose: 1.8 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 3					
D3	Ditch	138.9	Drainage	7.378	101.6
D4	Pond	8.433	Drainage	5.853	57.10
D4	Stream	131.4	Drainage	0.3033	4.950
D5	Pond	8.434	Drainage	5.762	56.33
D5	Stream	137.8	Drainage	0.2604	4.247
R1	Pond	8.433	Run-off	5.551	52.58
R1	Stream	112.3	Run-off	0.9005	14.47
R4	Stream	112.4	Run-off	0.9071	14.57

Pome fruits

Dose: 1.8 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 4

Scenario	STEP 4 Alconifen					
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	90	0	20	90	90
D3 Ditch	0.4208			0.04197		
D4 Pond	0.09153			0.009163		
D4 Stream	0.4350			0.04972		
D5 Pond	0.09157			0.009204		
D5 Stream	0.4564			0.04558		
R1 Pond	0.09153			0.009163		
R1 Stream	0.3720			0.3071		
R4 Stream	1.024			0.6354		

Pome fruits

Dose: 1.4 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 3

Scenario FOCUS	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
Step 3					
D3	Ditch	108.1	Drainage	5.735	79.20

D4	Pond	6.558	Drainage	4.547	44.73
D4	Stream	102.2	Drainage	0.2358	3.850
D5	Pond	6.559	Drainage	4.476	44.13
D5	Stream	107.2	Drainage	4.244	3.303
R1	Pond	6.558	Run-off	4.312	41.19
R1	Stream	87.37	Run-off	0.7003	11.26
R4	Stream	87.39	Run-off	0.7054	11.33

Pome fruits

Dose: 1.4 kg/ Scenarios:D3, D4, D5, R1, R4/ STEP 4

Scenario	STEP 4 Alconifen								
							VFS		
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	90	0	20	90	90	-	-	-
D3 Ditch	0.3272			0.03253			-		
D4 Pond	0.07117			0.007092			-		
D4 Stream	0.3383			0.03699			-		
D5 Pond	0.07121			0.007122			-		
D5 Stream	0.3550			0.03557			-		
R1 Pond	0.07117			0.007092			-		
R1 Stream	0.2893			0.2345			-		
R4 Stream	0.4868			0.4868			-		

The product AKO 600 SC is intended to be tank mixed together with BOA PRO 480 EC, therefore PEC_{sw} and PEC_{sed} calculations for clomazone were carried out. These results are necessary to perform the combi-tox risk assessment for aquatic organisms in the dRR Part B9. Since possible risk in the combi-tox assessment results from the presence of active substances in the mix, calculations do not include metabolites scenarios.

Table 8.9-1.55: FOCUS Step 1,2 and 3 PEC_{sw} and PEC_{sed} for clomazone following single application of the tank mix of AKO 600 SC with BOA PRO 480 EC to potatoes (dose: 0.096 kg of a.s/ha)

Scenario	Waterbody	Max PEC _{sw} (µg/L)*	Dominant entry route	21 d- PEC _{sw, twa} (µg/L)**	Max PEC _{sed} (µg/kg)*
FOCUS					
Step 1	---	28.24 25.11	Drainage/Run-off	21.97 21.74	35.06 58.33
Step 2	-----				
Northern Europe	March-May	5.60 5.46	Drainage/Run-off	4.35 4.85	6.96 13.01
Southern Europe	March-May	-	Drainage/Run-off	-	-
Step 3					

D3	ditch	0.5025 0.5033	Drainage	0.02783 0.02762	0.1447 0.2045
D4	pond	0.0439 0.6784	Drainage	0.04281 0.6592	0.1342 3.062
D4	stream	0.4186 0.6741	Drainage	0.02435 0.4386	0.04917 1.325
D3	ditch	0.5450 0.5508	Drainage	0.09024 0.1479	0.3003 0.8872
R1	pond	0.0459 0.07499	Run-off	0.04338 0.06383	0.0957 0.2613
R1	stream	1.421 1.116	Run-off	0.04984 0.06210	0.2919 0.3578
R2	stream	1.407 0.8993	Run-off	0.0921 0.06885	1.275 3.274
R3	stream	2.098 1.749	Run-off	0.1224 0.1125	0.5587 0.8278

In order to maintain consistency of the risk assessment STEP 4 for the clomazone has been calculated

Table 8.9-1.56: FOCUS Step 4 PEC_{sw} and PEC_{sed} for clomazone following single application in the tank mix of AKO 600 SC with BOA PRO 480 EC to potatoes (dose: 0.096 kg of a.s/ha)

Scenario	STEP 4 Clomazone					
	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]
	20	20	0	20	20	90
D3 Ditch		0.04541			0.004606	
		0.04539			0.004606	
D4 Pond		0.04276			0.04191	
		0.6779			0.6776	
D4 Stream		0.05137			0.04353	
		0.6731			0.6731	
D6 Ditch		0.5450			0.5450	
		0.3548			0.3548	
R1 Pond		0.01271			0.006907	
		0.01773			0.01333	
R1 Stream		0.3084			0.3084	
		0.2421			0.2421	
R2 Stream		0.3358			0.3358	
		0.2146			0.2146	
R3 Stream		0.4349			2.098	
		0.4185			0.4185	

To keep surface waters safe, doses of aclonifen and following risk mitigation listed in table below should be used:

Crop	Additional conditions					VFS mode used [Swan 4]
	Acceptable doses of aclonifen [kg/ha]	Vegetative strip [m]	No spray buffer [m]	Nozzle reduction [%]	Zone [scenarios relevant for that crop]*	
Potatoes	1.8	20	20	90	Poland	Yes
	1.5	20	20	90	Poland	-
	1.4	20	20	90	EU	-
Sunflower	1.8	20	20	90	Poland	Yes
	1.5	20	20	90	Poland	-
	0.9	20	20	90	EU	-
Maize	1.8	20	20	90	Poland	Yes
	1.5	20	20	90	Poland	-
	0.8	20	20	90	EU	-
Spring oilseeds	1.8	20	20	90	Poland	Yes
	1.7	20	20	90	EU	-
Winter oilseeds	1.8	20	20	90	Poland	-
	1.3	20	20	90	EU	-
Legumes	1.8	20	20	90	Poland	-
	0.8	20	20	90	EU	-
Soybeans	1.8			Crop has no scenarios relevant for Poland		
	1.2	20	20	50	EU	-
Tobacco	1.5			Crop has no scenarios relevant for Poland		
	1.4	20	20	90	EU	-
Leafy vegetables	1.8	20	20	90	Poland	Yes
	1.6	20	20	90	Poland	-
	1	20	20	90	EU	-
Field beans	1.8	20	20	90	Poland	Yes
	1.5	20	20	90	Poland	-
	0.9	20	20	90	EU	-
Pome fruits	1.8	20	90	0	Poland	-
	1.4	20	90	0	EU	-

* Poland - D3, D4, R1 scenarios, EU – all surface water scenarios in Central Zone (including scenarios relevant for Poland) for that crop

PEC_{sw/sed} of AKO 600 SC

Regulatory acceptable concentration (RAC) (see Part B9):

Formulation - AKO 600 SC: 1.35 µg/L (*Lemma gibba*)

Potatoes

Input

Application Rate (g ai/ha): 3635 Crop: Potatoes

Number of Applications: 1 Waterbody: focus_ditch

Use FOCUS (step 3) or mitigation distances (m)? FOCUS values

Info: Dimensions of receiving water body and field site (m)

Width: 1 Depth: 0.30 Length: 100

Distance: Crop <-- 0.80 --> Top of bank <-- 0.50 --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: 2.7593 B: -0.9778 C: 2.7593 D: -0.9778

Distance for change in regression (m) 1.0

Output: Drift deposition in water body per drift event

Drift percentile per event 90 based on a total of 1 applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.30	2.30	
% of application rate:	2.1349	1.2221	1.5936

Output: Drift loading onto water body

Mass loading per drift event: 5.7926 mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: 19.3088 ug/L (for comparison with modelling result)

Input

Application Rate (g ai/ha): 3635 Crop: Potatoes

Number of Applications: 1 Waterbody: focus_ditch

Use FOCUS (step 3) or mitigation distances (m)? 30

Info: Dimensions of receiving water body and field site (m)

Width: 1 Depth: 0.30 Length: 100

Distance: Crop <-- 30 --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: 2.7593 B: -0.9778 C: 2.7593 D: -0.9778

Distance for change in regression (m) 1.0

Output: Drift deposition in water body per drift event

Drift percentile per event 90 based on a total of 1 applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976

Output: Drift loading onto water body

Mass loading per drift event: 0.3548 mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: 1.1827 ug/L (for comparison with modelling result)

Sunflower

Input			
Application Rate (g ai/ha):	3635	Crop:	Sunflowers
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	FOCUS values		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 0.80	--> Top of bank <-- 0.50	--> Water
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.30	2.30	
% of application rate:	2.1349	1.2221	1.5936
Output: Drift loading onto water body			
Mass loading per drift event:	5.7926	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	19.3088	ug/L (for comparison with modelling result)	

Input			
Application Rate (g ai/ha):	3635	Crop:	Sunflowers
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	30		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 30	--> Water	
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976
Output: Drift loading onto water body			
Mass loading per drift event:	0.3548	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	1.1827	ug/L (for comparison with modelling result)	

Maize

Input			
Application Rate (g ai/ha):	3635	Crop:	Maize
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	FOCUS values		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 0.80	--> Top of bank <-- 0.50	--> Water
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.30	2.30	
% of application rate:	2.1349	1.2221	1.5936
Output: Drift loading onto water body			
Mass loading per drift event:	5.7926	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	19.3088	ug/L (for comparison with modelling result)	
Input			
Application Rate (g ai/ha):	3635	Crop:	Maize
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	30		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 30	--> Water	
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976
Output: Drift loading onto water body			
Mass loading per drift event:	0.3548	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	1.1827	ug/L (for comparison with modelling result)	

Sprig oilseeds

Input			
Application Rate (g ai/ha):	3635	Crop:	Oil seed rape, spring
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?		FOCUS values	

Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
Length:	100		
Distance:	Crop <-- 0.50	--> Top of bank <-- 0.50	--> Water

Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593
	D: -0.9778		
Distance for change in regression (m)	1.0		

Output: Drift deposition in water body per drift event			
Drift percentile per event 90 based on a total of 1 applications.			
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.00	2.00	
% of application rate:	2.7593	1.4010	1.9274

Output: Drift loading onto water body	
Mass loading per drift event:	7.0061 mg per m2 of water surface area.
Nominal concentration in water, resulting from drift event:	23.3536 ug/L (for comparison with modelling result)

Input			
Application Rate (g ai/ha):	3635	Crop:	Oil seed rape, spring
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?		30	

Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
Length:	100		
Distance:	Crop <-- 30	--> Water	

Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593
	D: -0.9778		
Distance for change in regression (m)	1.0		

Output: Drift deposition in water body per drift event			
Drift percentile per event 90 based on a total of 1 applications.			
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976

Output: Drift loading onto water body	
Mass loading per drift event:	0.3548 mg per m2 of water surface area.
Nominal concentration in water, resulting from drift event:	1.1827 ug/L (for comparison with modelling result)

Winter oilseeds

Input

Application Rate (g ai/ha): Crop:

Number of Applications: Waterbody:

Use FOCUS (step 3) or mitigation distances (m)?

Info: Dimensions of receiving water body and field site (m)

Width: Depth: Length:

Distance: Crop <-- --> Top of bank <-- --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: B: C: D:

Distance for change in regression (m)

Output: Drift deposition in water body per drift event

Drift percentile per event based on a total of applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.00	2.00	
% of application rate:	2.7593	1.4010	1.9274

Output: Drift loading onto water body

Mass loading per drift event: mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: ug/L (for comparison with modelling result)

Input

Application Rate (g ai/ha): Crop:

Number of Applications: Waterbody:

Use FOCUS (step 3) or mitigation distances (m)?

Info: Dimensions of receiving water body and field site (m)

Width: Depth: Length:

Distance: Crop <-- --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: B: C: D:

Distance for change in regression (m)

Output: Drift deposition in water body per drift event

Drift percentile per event based on a total of applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976

Output: Drift loading onto water body

Mass loading per drift event: mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: ug/L (for comparison with modelling result)

Legumes

Input			
Application Rate (g ai/ha):	3635	Crop:	Legumes
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	FOCUS values		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 0.80	--> Top of bank <-- 0.50	--> Water
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.30	2.30	
% of application rate:	2.1349	1.2221	1.5936
Output: Drift loading onto water body			
Mass loading per drift event:	5.7926	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	19.3088	ug/L (for comparison with modelling result)	

Input			
Application Rate (g ai/ha):	3635	Crop:	Legumes
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	30		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 30	--> Water	
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976
Output: Drift loading onto water body			
Mass loading per drift event:	0.3548	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	1.1827	ug/L (for comparison with modelling result)	

Soybeans

Input			
Application Rate (g ai/ha):	3635	Crop:	Soybeans
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	FOCUS values		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 0.80	--> Top of bank <-- 0.50	--> Water
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.30	2.30	
% of application rate:	2.1349	1.2221	1.5936
Output: Drift loading onto water body			
Mass loading per drift event:	5.7926	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	19.3088	ug/L (for comparison with modelling result)	

Input			
Application Rate (g ai/ha):	3635	Crop:	Soybeans
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	30		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 30	--> Water	
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976
Output: Drift loading onto water body			
Mass loading per drift event:	0.3548	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	1.1827	ug/L (for comparison with modelling result)	

Tobacco

Input			
Application Rate (g ai/ha):	3029.5	Crop:	Tobacco
Number of Applications:	1	Waterbody:	focus_ditch
Use FOCUS (step 3) or mitigation distances (m)?	FOCUS values		
Info: Dimensions of receiving water body and field site (m)			
Width:	1	Depth:	0.30
		Length:	100
Distance:	Crop <-- 1.00	--> Top of bank <-- 0.50	--> Water
Info: Drift regression terms to provide overall 90th percentile drift data			
Regression parameters	A: 2.7593	B: -0.9778	C: 2.7593 D: -0.9778
Distance for change in regression (m)	1.0		
Output: Drift deposition in water body per drift event			
Drift percentile per event	90	based on a total of 1 applications.	
	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.50	2.50	
% of application rate:	1.8562	1.1264	1.4304
Output: Drift loading onto water body			
Mass loading per drift event:	4.3333	mg per m2 of water surface area.	
Nominal concentration in water, resulting from drift event:	14.4443	ug/L (for comparison with modelling result)	

Input

Application Rate (g ai/ha): Crop:

Number of Applications: Waterbody:

Use FOCUS (step 3) or mitigation distances (m)?

Info: Dimensions of receiving water body and field site (m)

Width: Depth: Length:

Distance: Crop <-- --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: B: C: D:

Distance for change in regression (m)

Output: Drift deposition in water body per drift event

Drift percentile per event based on a total of applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	25.00	26.00	
% of application rate:	0.1185	0.1141	0.1163

Output: Drift loading onto water body

Mass loading per drift event: mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: ug/L (for comparison with modelling result)

Leafy vegetables

Input

Application Rate (g ai/ha): Crop:

Number of Applications: Waterbody:

Use FOCUS (step 3) or mitigation distances (m)?

Info: Dimensions of receiving water body and field site (m)

Width: Depth: Length:

Distance: Crop <-- --> Top of bank <-- --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: B: C: D:

Distance for change in regression (m)

Output: Drift deposition in water body per drift event

Drift percentile per event based on a total of applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.00	2.00	
% of application rate:	2.7593	1.4010	1.9274

Output: Drift loading onto water body

Mass loading per drift event: mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: ug/L (for comparison with modelling result)

Input

Application Rate (g ai/ha): 3635 Crop: Vegetables, leafy

Number of Applications: 1 Waterbody: focus_ditch

Use FOCUS (step 3) or mitigation distances (m)? 30

Info: Dimensions of receiving water body and field site (m)

Width: 1 Depth: 0.30 Length: 100

Distance: Crop <-- 30 --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: 2.7593 B: -0.9778 C: 2.7593 D: -0.9778

Distance for change in regression (m) 1.0

Output: Drift deposition in water body per drift event

Drift percentile per event 90 based on a total of 1 applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976

Output: Drift loading onto water body

Mass loading per drift event: 0.3548 mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: 1.1827 ug/L (for comparison with modelling result)

Field beans

Input

Application Rate (g ai/ha): 3635 Crop: Field beans

Number of Applications: 1 Waterbody: focus_ditch

Use FOCUS (step 3) or mitigation distances (m)? FOCUS values

Info: Dimensions of receiving water body and field site (m)

Width: 1 Depth: 0.30 Length: 100

Distance: Crop <-- 0.80 --> Top of bank <-- 0.50 --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: 2.7593 B: -0.9778 C: 2.7593 D: -0.9778

Distance for change in regression (m) 1.0

Output: Drift deposition in water body per drift event

Drift percentile per event 90 based on a total of 1 applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	1.30	2.30	
% of application rate:	2.1349	1.2221	1.5936

Output: Drift loading onto water body

Mass loading per drift event: 5.7926 mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: 19.3088 ug/L (for comparison with modelling result)

Input

Application Rate (g ai/ha): 3635 Crop: Field beans
 Number of Applications: 1 Waterbody: focus_ditch
 Use FOCUS (step 3) or mitigation distances (m)? 30

Info: Dimensions of receiving water body and field site (m)

Width: 1 Depth: 0.30 Length: 100
 Distance: Crop <-- 30 --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: 2.7593 B: -0.9778 C: 2.7593 D: -0.9778
 Distance for change in regression (m) 1.0

Output: Drift deposition in water body per drift event

Drift percentile per event 90 based on a total of 1 applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	30.00	31.00	
% of application rate:	0.0992	0.0961	0.0976

Output: Drift loading onto water body

Mass loading per drift event: 0.3548 mg per m2 of water surface area.
 Nominal concentration in water, resulting from drift event: 1.1827 ug/L (for comparison with modelling result)

Pome fruits

Input

Application Rate (g ai/ha): 3635 Crop: Pome/stone fruit, early applns
 Number of Applications: 1 Waterbody: focus_ditch
 Use FOCUS (step 3) or mitigation distances (m)? FOCUS values

Info: Dimensions of receiving water body and field site (m)

Width: 1 Depth: 0.30 Length: 100
 Distance: Crop <-- 3.00 --> Top of bank <-- 0.50 --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: 66.7017 B: -0.7520 C: 3867.9109 D: -2.4183
 Distance for change in regression (m) 11.4

Output: Drift deposition in water body per drift event

Drift percentile per event 90 based on a total of 1 applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	3.50	4.50	
% of application rate:	26.0015	21.5239	23.5987

Output: Drift loading onto water body

Mass loading per drift event: 85.7811 mg per m2 of water surface area.
 Nominal concentration in water, resulting from drift event: 285.9371 ug/L (for comparison with modelling result)

Input

Application Rate (g ai/ha): Crop:

Number of Applications: Waterbody:

Use FOCUS (step 3) or mitigation distances (m)?

Info: Dimensions of receiving water body and field site (m)

Width: Depth: Length:

Distance: Crop <-- --> Water

Info: Drift regression terms to provide overall 90th percentile drift data

Regression parameters A: B: C: D:

Distance for change in regression (m)

Output: Drift deposition in water body per drift event

Drift percentile per event based on a total of applications.

	at edge nearest field	farthest from field	areic mean
Distance from crop: (m)	75.00	76.00	
% of application rate:	0.1130	0.1094	0.1112

Output: Drift loading onto water body

Mass loading per drift event: mg per m2 of water surface area.

Nominal concentration in water, resulting from drift event: ug/L (for comparison with modelling result)

Regulatory acceptable concentration (RAC) (see Part B9):

Formulation - AKO 600 SC: 1.35 µg/L (*Lemma gibba*)

Table below presents results of PEC_{sw} of formulation and required risk mitigation for AKO 600 SC

Crop	Application rate of AKO 600 SC [g/ha]	Application rate of AKO 600 SC [L]	Buffer zone [m]	PEC _{sw} of formulation [µg/L]
Potatoes	3635	3	Default	focus ditch: 19.31 focus pond: 0.77 focus stream: 15.04
	3635	3	30	focus ditch: 1.18 focus pond: 0.25 focus stream: 1.18
Sunflower	3635	3	Default	focus ditch: 19.31 focus pond: 0.77 focus stream: 15.04
	3635	3	30	focus ditch: 1.18 focus pond: 0.25 focus stream: 1.18
Maize	3635	3	Default	19.31
	3635	3	30	1.18

Spring oilseeds	3635	3	Default	focus ditch: 23.35 focus pond: 0.80 focus stream: 17.33
	3635	3	30	focus ditch: 1.18 focus pond: 0.25 focus stream: 1.18
Winter oilseeds	3635	3	Default	23.35
	3635	3	30	1.18
Legumes	3635	3	Default	19.31
	3635	3	30	1.18
Soybeans	3635	3	Default	focus ditch: 19.31 focus pond: 0.77 focus stream: 15.04
	3635	3	30	focus ditch: 1.18 focus pond: 0.25 focus stream: 1.18
Tobacco	3030 3029.5	2.5	Default	focus ditch: 14.44 focus pond: 0.63 focus stream: 11.53
	3030 3029.5	2.5	25	focus ditch: 1.17 focus pond: 0.24 focus stream: 1.17
Leafy vegetables	3635	3	Default	23.35
	3635	3	30	1.18
Field beans	3635	3	Default	19.31
	3635	3	30	1.18
Pome fruits	3635	3	Default	focus ditch: 285.94 focus pond: 17.19 focus stream: 261.51
	3635	3	75	focus ditch: 1.3472 focus pond: 0.27 focus stream: 1.3472

In conclusion, according to available data and calculations, AKO 600 SC will not pose a risk to surface waters ($PEC_{sw} < RAC$) if:

- 30m buffer zone is used on potatoes, sunflower, flax, spring oilseeds, breadseed poppy, mustard, soybeans, pumpkin and hemp
- 25m buffer zone is used on tobacco
- 75m buffer zone is used on forest nurseries plants (pine tree, spruce, fir tree, larch), ornamental shrubs, basket willow, purple willow, forest tree, christmas tree, energetic willow in Poland

Evaluation by zRMS	PEC _{sw} (KCP 9.2.5)
Inputs for Modelling	For the active substance aclonifen the calculations presented here are accepted. Predicted environmental concentrations in surface water (PEC_{sw}) and sediment (PEC_{sed}) has been calculated for aclonifen after single application of the product AKO 600 SC (Tanger 600 SC, Libretto 600 SC) to the crops indicated in the GAP Table as zonal and minor uses, considering the pathways spray drift, drainage and runoff. The PEC_{sw} and PEC_{sed} were calculated in compliance with relevant FOCUS scenarios in stepwise procedure (Steps 1, 2, 3 and 4).

	The water DT₅₀ value of 4.4 days is a dissipation value and should not be used for modelling. According to FOCUS SW 2015 recommendations, the geomean total system DT₅₀ was used in Step 1-4 for both water and sediment compartments, namely 17.3 days. The geomean K_{foc} of acetonifene was used for calculations of PEC_{sw/sed}. According to EFSA DegT50 guidance document (2014) and to EFSA Scientific Report on Acetonifene (2008), the geomean soil DT₅₀ of 62.3 days (geomean of laboratory DT₅₀ values normalized to 20°C pF2) was used as the worst case for modelling instead of an incorrectly calculated value of DT₅₀=53.9d from the EU review. Where necessary zRMS recalculated PEC_{sw/sed} values using data: <table border="1" data-bbox="483 600 1441 790"> <tr> <td>DT_{50,soil} (d)</td><td>62.3</td></tr> <tr> <td>DT_{50,water} (d)</td><td>17.3</td></tr> <tr> <td>DT_{50,sed} (d)</td><td>1000</td></tr> <tr> <td>DT_{50,whole system} (d)</td><td>17.3</td></tr> </table> The evaluator assessed only PEC_{sw/sed} for relevant scenarios for Central Zone. The remaining scenarios have been discoloured. The applicant selected the correct surrogate crops for missing scenarios. In general the presented assumptions and calculations are acceptable with minor corrections. Calculations were carried out for a single application of the product AKO 600 SC (Tanger 600 SC, Libretto 600 SC), taking into account the application rates according to GAP. Because of the product AKO 600 SC is intended to be tank mixed together with BOA PRO 480 EC for use on potatoes, the PEC_{sw} and PEC_{sed} calculations for clomazone were additionally carried out by the Applicant. The input parameters and the results of PEC_{sw/sed} calculations (Table 8.9-1.55 and Table 8.9-1.56) are correct and can be used to perform the combi-tox risk assessment for aquatic organisms in the dRR Part B9. Since possible risk in the combi-tox assessment results from the presence of active substances in the mixture, calculations do not include metabolites. AKO 600 SC (Tanger 600 SC, Libretto 600 SC) Calculations of PEC_{sw} values for formulation has been provided by the Applicant. zRMS evaluated these PEC_{sw} for the crops included in the GAP table and for the pome fruit as surrogate crop for uses from 15 to 21. The calculations are accepted. However, PEC_{sw} values for formulation has been provided by Applicant only for FOCUS ditch. Therefore, zRMS completed calculations with waterbodies: FOCUS pond and FOCUS stream. Presented results of PEC_{sw} for formulation may be used for risk assessment.	DT _{50,soil} (d)	62.3	DT _{50,water} (d)	17.3	DT _{50,sed} (d)	1000	DT _{50,whole system} (d)	17.3
DT _{50,soil} (d)	62.3								
DT _{50,water} (d)	17.3								
DT _{50,sed} (d)	1000								
DT _{50,whole system} (d)	17.3								
Agreed endpoints	Please refer to Tables from 8.9-1.1 to 8.9-1.54.								
Implication for risk assessment	Please refer to Part B, Section 9 of this dRR.								

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

Table 8.10-1 Summary of atmospheric degradation and behaviour

Compound	Aclonifen
Direct photolysis in air	not relevant
Quantum yield of direct phototransformation	not relevant
Photochemical oxidative degradation in air	AOP-calculations: AOP version 1.91: DT50 = 1.2 d (= 30.2 h, 24 hr day; 0.5×10^6 OH/cm ³)
Volatilisation	not relevant
Metabolites	not applicable

Due to the low potential of volatilization as derived from physic-chemical properties, the volatilization experiments available and the estimated photochemical transformation half-life (1.2 d), the environmental concentrations in air and the transport through air are considered negligible - EFSA Scientific Report (2008) 149, 1-80.

Evaluation by zRMS	Fate and behaviour in air (KCP 9.3)
Comments	The data on the atmospheric degradation and behaviour for active substance follows the EU assessment and is therefore agreed by the zRMS.
Conclusion for exposure assessment	The vapour pressure at 20 °C of the active substance aclonifen is between 10^{-5} and 10^{-4} Pa. Due to the low potential of volatilisation as derived from physico-chemical properties, the environmental concentrations in air and the transport through air are considered negligible.

Appendix 1 Lists of data considered in support of the evaluation available to third parties/public.

List of data submitted by the applicant and relied on

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

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

Data point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Owner
9.1.1	Schlüter, H.	1983	Aerobic and anaerobic degradation of CME127 in the soil. 127AA-631-003 ! R003641 not GLP, unpublished BOD98-00650	N	BAY4
9.1.1	Hardy, I.	2006	Aclonifen - Kinetic evaluation of soil laboratory studies. M-266704-01-1 GLP, unpublished BOD2006-202	N	BAY4
9.1.1	Fischer, H.	2000	Determination of its residues in soil from an accumulation study in Germany - Final Report. A&M 030/97 ! C009516 GLP, unpublished BOD2001-25	N	BAY4
9.1.1	Hardy, I.	2006	Aclonifen - Re-evaluation of aclonifen field dissipation studies. M-266725-01-1 GLP, unpublished	N	BAY4

			BOD2006-203		
9.1.1	Anonymous	1982	Behaviour of pesticide active ingredients in the soil R003643 ! 127AB-921-001 not GLP, unpublished BOD2005-38	N	BAY4
9.1.1	Fischer, H	2000	Determination of its residues in soil from an accumulation study in Germany - Final Report. A&M 030/97 ! C009516 GLP, unpublished BOD2001-25	N	BAY4
9.1.1	Hoenzelaers, R. and Schulz, J.	1994	Final report on testing the fate of residues of SAG 127 01 H (Bandur in soil under field conditions (field report)). AGR/BA 92/SKG-9268 ! R007356 GLP, unpublished BOD94-00897	N	BAY4
9.1.1.	Straetz, J.	2000	Long term trial with regard to investigating the degradation behaviour in soil of the pesticide active ingredient Aclonifen contained in the herbicide Bandur ®. C009517 GLP, unpublished BOD2005-40	N	BAY4
9.1.1	Stratmann, A.	1994	Aclonifen - Determination of residues in soil samples of the study no. 92-327. A&M045/92 ! R007355 GLP, unpublished BOD94-00898	N	BAY4
9.1.1	Straetz, J.	2000	Ermittlung des Abbauverhaltens des Pflanzenschutzmittelwirkstoffes - Aclonifen in dem Herbizid Bandur in einem Langzeitversuch im Boden - Translation C009517. 97-748 ! C009518 GLP, unpublished BOD2001-20	N	BAY4
9.1.2	Godward, P.J. et al.	1991	Aclonifen-[14C] Adsorption/desorption on three soils. D.AG. 1624 ! R007158 GLP, unpublished BOD2005-44	N	BAY4
9.1.2	Anonymous	1986	Versickerungsverhalten des Pflanzenschutzmittels - Aclonifen - Translation C010546. R007354 not GLP, unpublished BOD2005-44	N	BAY4
9.1.2	Anonymous	1986	Leaching behaviour of plant protection agent - Aclonifen - Translation C010546. R007354 not GLP, unpublished BOD2005-48	N	BAY4

9.1.2	Anonymous	1981	Leaching properties of agrochemicals - CME 127. R007353 ! Rep.No. 440919 not GLP, unpublished BOD2005-41	N	BAY4
9.1.2	Newby, S.E. and Godward, P.J.	1993	Aclonifen: Aged leaching in five soils. P92/203 ! R007077 GLP, unpublished BOD98-00656	N	BAY4
9.1.3	Cooper, I. and Hardy, I.	2003	Predicted environmental concentrations in groundwater (PECgw) of aclonifen using the FOCUS grounwater scenarios. C032385 not GLP, unpublished BOD2005-46	N	BAY4
9.3.1	Maestracci, M. et al.	1993	Soil surface volatility study of aclonifen formulated as Bandur-Suspension concentrate (SC containing 600 g x 1*-1 aclonifen). R007912 ! Rep.No. 430860 GLP, unpublished LUF2005-23	N	BAY4
9.3.1	Maurer, T.	2000	Estimation of the reaction with photochemically produced hydroxyl radicals in the atmosphere. Rep. No. OE00/147 ! C010366 not GLP, unpublished LUF2001-8	N	BAY4
9.1.3	Cooper, I. and Hardy, I.	2004	Predicted environmental concentrations of aclonifen in soil, following application to sunflowers. C042603 not GLP, unpublished BOD2005-63	N	BAY4
9.2.4	Cooper, I. and Hardy, I.	2003	Predicted environmental concentrations in groundwater (PECgw) of aclonifen using the FOCUS grounwater scenarios. C032385 not GLP, unpublished WAS2005-42	N	BAY4
9.2.5	Cooper, I. and Hardy, I.	2004	Predicted environmental concentratioons in surface water (PECsw) and sediment (PECsed) for aclonifen following use of the formulation BANDUR on sunflowers. C042605 not GLP, unpublished WAS2005-43	N	BAY4

The following tables are to be completed by MS

List of data submitted by the applicant and not relied on

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

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

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

Appendix 2 Detailed evaluation of the new Annex II studies

Not relevant

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

Not relevant