

# FINAL REGISTRATION REPORT

## **Part B**

### **Section 8**

#### **Environmental Fate**

Detailed summary of the risk assessment

Product code: SHA 2600 E

Product name: PENSHUI

Chemical active substance:

Pendimethalin, 455 g/L

Central Zone

Zonal Rapporteur Member State: Poland

#### **CORE ASSESSMENT**

Applicant: Sharda Cropchem España S.L.:

Submission date: June 2020

MS Finalisation date: 11.2021; corrected 04.2022

## Version history

When	What
June 2020	Submission to RMS
February 2021	dRR assessed by zRMS
October 2021	Applicant update
November 2021	dRR assessed by zRMS for commenting
April 2022	dRR corrected by zRMS after commenting (final)

## Table of Contents

<b>8</b>	<b>Fate and behaviour in the environment (KCP 9).....</b>	<b>4</b>
8.1	Critical GAP and overall conclusions.....	5
8.2	Metabolites considered in the assessment.....	11
8.3	Aerobic degradation in soil (KCP 9.1.1.1) .....	12
8.3.1.1	Pendimethalin and its metabolites .....	12
8.3.2	Anaerobic degradation in soil (KCP 9.1.1.1).....	13
8.4	Field studies (KCP 9.1.1.2).....	14
8.4.1	Soil dissipation testing on a range of representative soils (KCP 9.1.1.2.1). .....	14
8.4.1.1	Pendimethalin and its metabolites .....	14
8.4.2	Soil accumulation testing (KCP 9.1.1.2.2) .....	15
8.5	Mobility in soil (KCP 9.1.2) .....	15
8.5.1	Pendimethalin and its metabolites .....	16
8.5.2	Column leaching (KCP 9.1.2.1).....	17
8.5.3	Lysimeter studies (KCP 9.1.2.2).....	17
8.5.4	Field leaching studies (KCP 9.1.2.3) .....	17
8.6	Degradation in the water/sediment systems (KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3) .....	18
8.6.1	Pendimethalin and its metabolites .....	18
8.7	Predicted Environmental Concentrations in soil (PEC <sub>soil</sub> ) (KCP 9.1.3) .....	19
8.7.1	Justification for new endpoints .....	19
8.7.2	Active substance and relevant metabolites .....	19
8.7.2.1	Pendimethalin and its metabolites .....	21
8.7.2.2	PEC <sub>soil</sub> of PENSUI .....	22
8.8	Predicted Environmental Concentrations in groundwater (PEC <sub>gw</sub> ) (KCP 9.2.4) .....	23
8.8.1	Justification for new endpoints .....	23
8.8.2	Active substance and relevant metabolites .....	23
8.9	Predicted Environmental Concentrations in surface water (PEC <sub>sw</sub> ) (KCP 9.2.5) .....	27
8.9.1	Justification for new endpoints .....	27
8.9.2	Active substance, relevant metabolites and the formulation (KCP 9.2.5) ...	28
8.9.2.1	Pendimethalin and its metabolites .....	33
8.9.2.2	PEC <sub>sw/sed</sub> of PENSUI .....	151
8.10	Fate and behaviour in air (KCP 9.3, KCP 9.3.1) .....	152
<b>Appendix 1</b>	<b>Lists of data considered in support of the evaluation.....</b>	<b>154</b>
<b>Appendix 2</b>	<b>Detailed evaluation of the new Annex II studies.....</b>	<b>154</b>
<b>Appendix 3</b>	<b>Additional information provided by the applicant (e.g. detailed modelling data).....</b>	<b>154</b>

## **8                    Fate and behaviour in the environment (KCP 9)**

## 8.1 Critical GAP and overall conclusions

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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Use- No. *	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: develop- mental stages of the pest or pest group)	Application				Application rate			PHI (days)	Remarks: e.g. g saf- ener/ synergist per ha	Conclusion
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (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			Groundwater
Zonal uses (field or outdoor uses, certain types of protected crops)														
1	CEU	Winter cereals (wheat, barley, rye, oats, tritica- le)	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
2	CEU	Winter cereals (wheat, barley, rye, oats, tritica- le)	F	Broadleaved and grass weeds	Spray	Post emer- gence BBCH 10-13	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
3	CEU	Maize	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-600			A
4	CEU	Maize	F	Broadleaved and grass weeds	Spray	Post emer- gence BBCH 10-13	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-600			A
5	CEU	Pome fruits (apple, pear)	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09 appli- cations between rows	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-600			C To be con- firmed by cMS
6	CEU	Stone fruits (peach, apricot, plum, nectarine,	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09 appli-	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-600			C To be con- firmed by

		cherry)				cations between rows								cMS
7	CEU	Sunflower	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.6 b) 2.6	a) 1.183 b) 1.183	200-400			C To be con- firmed by cMS
8	CEU	Soybean	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.6 b) 2.6	a) 1.183 b) 1.183	200-400			A
9	CEU	Bulb vegetables (onion, garlic, shallot, spring onion)	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
10	CEU	Bulb vegetables (onion, garlic, shallot, spring onion)	F	Broadleaved and grass weeds	Spray	Post emer- gence BBCH 10-13	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
11	CEU	Bean, pea, broad bean, field bean	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
12	CEU	Carrot, parsley	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
13	CEU	Lupine	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 2.6 b) 2.6	a) 1.183 b) 1.183	200-400			A
14	CEU	Winter oilseed rape	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 1.0 b) 1.0	a) 0.455 b) 0.455	200-400			A
15	CEU	Winter oilseed rape	F	Broadleaved and grass weeds	Spray	Post emer- gence BBCH 10-16	a) 1 b) 1	NA	a) 2.0 b) 2.0	a) 0.91 b) 0.91	200-400			A
16	CEU	Asparagus	F	Broadleaved and grass weeds	Spray	Pre emer- gence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
17	CEU	Brassica vegeta- bles (broccoli, Brussels sprouts, cabbage, cauli-	F	Broadleaved and grass weeds	Spray	Pre trans- planting	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A

		flower)												
18	CEU	<b>Strawberry</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09 applications between rows	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			C To be confirmed by cMS
19	CEU	<b>Raspberry</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09 applications between rows	a) 1 b) 1	NA	a) 3.0 b) 3.0	a) 1.365 b) 1.365	200-400			C To be confirmed by cMS
20	CEU	<b>Currants</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09 applications between rows	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			C To be confirmed by cMS
21	CEU	<b>Leek</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
22	CEU	<b>Leek</b>	F	Broadleaved and grass weeds	Spray	Post emergence BBCH 10-13	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
23	CEU	<b>Parsnip</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
24	CEU	<b>Lettuce, endive</b>	F	Broadleaved and grass weeds	Spray	Pre transplanting	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
25	CEU	<b>Potato</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 2.5-3.5 b) 2.5-3.5	a) 1.137-1.59 b) 1.137-1.59	200-400			A
26	CEU	<b>Grapevine</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09 applications between rows	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			C To be confirmed by cMS
27	CEU	<b>Ornamentals</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A

28	CEU	<b>Clover, alfalfa</b>	F	Broadleaved and grass weeds	Spray	Post emergence BBCH 13-18	a) 1 b) 1	NA	a) 2.2 b) 2.2	a) 1.0 b) 1.0	200-400			A
29	CEU	<b>Artichoke</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
30	CEU	<b>Fennel</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
31	CEU	<b>Cucurbits (melon, cucumber, squash, zucchini)</b>	F	Broadleaved and grass weeds	Spray	Pre emergence BBCH 00-09	a) 1 b) 1	NA	a) 3.5 b) 3.5	a) 1.59 b) 1.59	200-400			A
<b>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)</b>														
<b>Minor uses according to Article 51 (zonal uses)</b>														
<b>Minor uses according to Article 51 (interzonal uses)</b>														

\* 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”

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



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

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Use- No. *	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 safener/ synergist per ha
					Method / Kind	Timing / Growth stage of crop & season	Max. number a) per use b) per crop/ season	Min. interval between applications (days)	L product/ha a) max. rate per appl. b) max. total rate per crop/season	g as/ha a) max. rate per appl. b) max. total rate per crop/season	Water L/ha min/max		
1	AT, BE, CZ, DK, DE, GR, IT, IE, LU, PT, SI, ES, UK	Wheat (repre-sents small grain cereals)	F	Broadleaved weeds and grasses	Spray	pre- or post- em (BBCH 00-29) autumn	1	-	a) 3.5 b) 3.5	1593	100 – 400	-	
2	AT, BE, CZ, DK, ET, DE, GR, IT, IE, LV, LT, LU, PO, PT, SI, ES, UK	Carrot	F	Broadleaved weeds and grasses	Spray	pre- or post- em (BBCH 00-14)	1	-	a) 3.5 b) 3.5	1593	100 – 600	42	
3	DE, SI	Carrot	F	Broadleaved weeds and grasses	Spray	pre- + post- em (BBCH 12-13)	2	14 – 35	a) 1.75 b) 3.5	796 + 796	200 – 400	42	Split application: 1.75 pre + 1.75 post at BBCH 12- 13
4	DE, SI	Green bean	F	Broadleaved weeds and grasses	Spray	pre-em	1	-	a) 3.5 b) 3.5	1593	200 – 400	-	
5	AT, CZ, ET, DE, IT, LV, LU, PT, SI	Dry bean	F	Broadleaved weeds and grasses	Spray	pre- or post- em (BBCH 00-13)	1	-	a) 3.5 b) 3.5	1593	200 - 600	-	
6	AT, DK, DE	Green pea	F	Broadleaved weeds and grasses	Spray	pre- or post- em (BBCH 00-13)	1	-	a) Pre: 3.0 Post: 3.5 b) Pre: 3.0 Post: 3.5	Pre: 1365 Post: 1593	200 - 400	56	
7	DK	Green pea	F	Broadleaved weeds	Spray	BBCH 12 +	2	*	a) 1.0	455	200 – 400	56	Total per crop/season:

				and grasses		BBCH 14			b) 2.0				910 g as/ha  *In the current registration of this product in Denmark, no interval is mentioned
8	AT, BE, BG, CZ, DK, ET, DE, GR, IT, IE, LV, LT, LU, PO, PT, ES, UK	Dry pea	F	Broadleaved weeds and grasses	Spray	Pre-sowing, pre-em or post-em (BBCH 00-13)	1	-	a) 3.5 b) 3.5	1593	100 – 600	56	
9	DK	Dry pea	F	Broadleaved weeds and grasses	Spray	BBCH 12 + BBCH 14	2	*	a) 1.0 b) 2.0	455	200 - 400	56	Total per crop/season: 910 g as/ha  *In the current registration of this product in Denmark, no interval is mentioned
10	All zones	Winter cereals (winter barley, winter wheat, winter rye and triticale)	F	Mono/ dicot annual weeds	Broad	BBCH 00-14 (sept-nov)	a) 1 b) 1	-	a) 4.0 b) 4.0	1600	200	-	The PHI is covered by the time remaining between application and harvest.

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

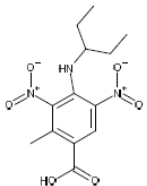
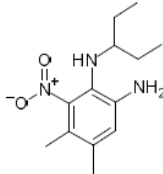
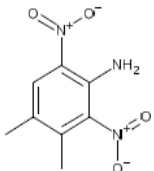
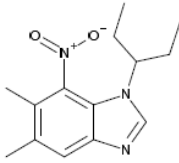
\*\* F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

**zRMS comments:** All comments and conclusions of the zRMS are presented in grey. Minor changes are introduced directly in the text and highlighted in grey. Not agreed or not relevant information is struck through and shaded for transparency.

## 8.2 Metabolites considered in the assessment

The endpoints used in the efate section are in agreement with the Pendimethalin EFSA Journal 2016;14(3):4420.

**Table 8.2-1: Metabolites of Pendimethalin potentially relevant for exposure assessment**

Metabolite	Molar mass	Chemical structure	Maximum observed occurrence in compartments	Exposure assessment required due to
2-methyl-3,5-dinitro-4-(pentan-3-ylamino)benzoic acid <b>M455H001</b> <b>P44</b>	311.3 g/mol		Soil: 6.9% Water: - Sediment: -	PEC <sub>soil</sub> PEC <sub>gw</sub> PEC <sub>sw/sed</sub>
4,5-dimethyl-3-nitro-N2-(pentan-3-yl)benzene-1,2-diamine <b>M455H033</b> <b>P48</b>	251.3 g/mol		Soil: 25.9% (anaerobic) <del>Water: 2.03%</del> <del>Sediment: 21.32%</del> <del>Total system: 23.4%</del> Water: 1.48% Sediment: 10.61% (Total system: 12.1%)	PEC <sub>soil</sub> PEC <sub>gw</sub> PEC <sub>sw/sed</sub>
2,6-dinitro-3,4-dimethylaniline	211.2 g/mol		Soil: - Water: 14.2% AR Sediment: -	PEC <sub>sw/sed</sub>
1-(1-ethylpropyl)-5,6-dimethyl-7-nitro-1H-benzimidazole <b>M455H029</b> <b>P36</b>	261.3 g/mol		<del>Soil: 25.9% (anaerobic)</del> <del>Water: 1.48%</del> <del>Sediment: 10.61%</del> <del>(Total system: 12.1%)</del> Soil: - Water: 2.03% Sediment: 21.32% Total system: 23.4%	PEC <sub>sw/sed</sub>

### 8.3 Aerobic degradation in soil (KCP 9.1.1.1)

#### 8.3.1.1 Pendimethalin and its metabolites

**Table 8.3-1: Summary of aerobic degradation rates for Pendimethalin - laboratory studies**

Pendimethalin, Laboratory studies, aerobic conditions										
Soil name	Soil type	pH (water)	t.oC	MWHC %	DT50 (d)*	DT90 (d)*	DT50 (d) 20°C pF2/10kPa	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
-	Sandy loam (USDA, North Carolina)	5.5	20	40 – 50	166.8	554	146	2.5	SFO	EFSA Journal 2016;14(3):4420
-	Sandy loam	7.5	20	50	99.8	331.5	97	1.7	SFO	
-	Loamy sand	5.7	20	40	41	404.5**	201.1****	1.3	DFOP	
-	Silt loam (USDA, Louisiana)	5.1	20	40 – 50	301.6	1001.5	269.9	2.2	SFO	
-	Clay loam (USDA, Mississippi)	5.4	20	40 - 50	301.7	1002.4	261.8	1.8	SFO	
Geometric mean (n=5)							182.28***			
pH-dependency:							No			

\*For the purpose of the application of Guidance on Information Requirements and Chemical Safety Assessment. Chapter R11: PBT/vPvB assessment (ECHA, November 2014) the range of half-lives in soil normalized to 12 °C is: 212–641 d.

\*\*For a half-life trigger at 20 °C pseudo SFO DT50 (DT90/3.32) = 121.69 d

\*\*\*Slow phase DFOP used for modelling; RMS calculated a slow phase DFOP DT50 of 177.7 days by exclusion of the last data point. The worst case value and corresponding geometric mean of the applicant is used for modelling.

**Table 8.3-2: Summary of aerobic degradation rates for M455H001 - laboratory studies**

M455H001, Laboratory studies, Dark aerobic conditions											
Soil name	Soil type	pH (water)	t.oC	MWHC %	DT50 (d)	DT90 (d)	f. f. k <sub>f</sub> / k <sub>dp</sub>	DT50 (d) 20°C pF2/10kPa*	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
-	Sandy loam	8.0	20	40	34.5	114.4	-	24.3	4.3	SFO	EFSA Journal 2016;14(3):4420
-	Loamy sand	6.5	20	40	11.2	100.7	-	31.2**	2.3	HS	
-	Loamy sand	6.6	20	40	37.9	336.3	-	47.9**	4.3	HS	
-	Sandy	7.5	20	50	72.2	239.9	0.231	70.2	11.3	SFO	

M455H001, Laboratory studies, Dark aerobic conditions											
Soil name	Soil type	pH (water)	t.oC	MWHC %	DT50 (d)	DT90 (d)	f. f. k <sub>r</sub> / k <sub>dp</sub>	DT50 (d) 20°C pF2/10kPa*	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
	loam										
Geometric mean (n=4)								39.96**			
Arithmetic mean							0.231				
pH-dependency:							No				

\*Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

\*\*Slow phase HS used as modelling endpoint

**Table 8.3-3: Summary of aerobic degradation rates for M455H033 - laboratory studies**

M455H033, Laboratory studies, Dark aerobic conditions (P48)											
Soil name	Soil type	pH (CaCl <sub>2</sub> )	t.oC	MWHC %	DT50 (d)	DT90 (d)	f. f. k <sub>r</sub> / k <sub>dp</sub>	DT50 (d) 20°C pF2/10kPa*	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
-	Sandy loam	6.2	20	40	0.36	5.9	-	1.8**	2.5	FOMC	EFSA Journal 2016;14(3):4420
-	Loamy sand	7.3	20	40	1.46	12.7	-	3.8**	2.6	FOMC	
-	Loamy sand	7.4	20	40	0.48	4.9	-	1.5**	2.0	FOMC	
Geometric mean (n=3)								2.2 (0.09d***)			
Arithmetic mean							-****				
pH-dependency:							No				

\*Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7

\*\*Back-calculated: DT50 = DT90/3.32

\*\*\*For modelling worst case anaerobic DT50 of 3.6 days is used

\*\*\*\*For modelling conservative value 1 is used

### 8.3.2 Anaerobic degradation in soil (KCP 9.1.1.1)

**Table 8.3-4: Summary of anaerobic degradation rates for Pendimethalin - laboratory studies**

Pendimethalin, Laboratory studies, Dark anaerobic conditions										
Soil name	Soil type	pH (CaCl <sub>2</sub> )	t.oC	MWHC %	DT50 (d)	DT90 (d)	DT50 (d) 20°C pF2/10kPa*	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
-	Sandy loam	7.0	20	40 - 100	11.7	38.8	11.7	3.8	HS	EFSA Journal 2016;14(3):4420
Geomean (n=1)							11.7			

\* Normalised using a Q10 of 2.58

**Table 8.3-5: Summary of anaerobic degradation rates for Pendimethalin metabolite M455H033 - laboratory studies (P48)**

M455H033, Laboratory studies, Dark anaerobic conditions										
Soil name	Soil type	pH (CaCl <sub>2</sub> )	t.oC	MWHC %	DT50 (d)	DT90 (d)	DT50 (d) 20°C pF2/10kPa*	Chi2 (%)	Kinetic model	Evaluated on EU level y/n/ Reference
-	Sandy loam	7.4	20	40 - 100	0.4	7.4	3.6	3.6	DFOP	EFSA Journal 2016;14(3):4420
Geomean (n=1)							<b>3.6</b>			

\* Normalised using a Q10 of 2.58

## 8.4 Field studies (KCP 9.1.1.2)

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

Studies on field dissipation rates with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

#### 8.4.1.1 Pendimethalin and its metabolites

**Table 8.4-1: Summary of aerobic degradation rates for Pendimethalin - field studies**

Pendimethalin, Field studies – from EFSA Journal 2016;14(3):4420								
Soil type	Location	pH (CaCl <sub>2</sub> )	Depth (cm)	DissT50 (d) actual	DT90 (d) actual	St. (x <sup>2</sup> )	Method of calculation	Evaluated on EU level y/n/ Reference
Clay	Thermi, Greece (CS)	7.6	30	187.0*	621.3	20.8	SFO	EFSA Journal 2016;14(3):4420
Clay	Thermi, Greece (EC)	7.6	30	175.4	582.5	26.3		
Silty clay loam	Longara, Italy (CS)	7.2	30	108.9	361.6	24.6		
Silty clay loam	Longara, Italy (EC)	7.2	30	77.0	255.7	16.8		
Clay loam	Emmeloord, NL (CS)	7.0	30	54.2	1536	12.1		
Clay loam	Emmeloord, NL (SC)	7.0	30	65.6	476.8	8.9		
Clay loam	Idice, Italy (CS)	7.0	30	147.9	491.4	26.5		
Clay loam	Idice, Italy (EC)	7.0	30	117.3	389.7	18.7		
Loamy sand	Brunne, Germany (CS)	4.9	40	166.2	552.1	8.2		
Silty clay loam	Sermaises, France (WG)	6.8	30	56.2	186.7	15.8	HS	

Pendimethalin, Field studies – from EFSA Journal 2016;14(3):4420								
Soil type	Location	pH (CaCl <sub>2</sub> )	Depth (cm)	DissT50 (d) actual	DT90 (d) actual	St. (x <sup>2</sup> )	Method of calculation	Evaluated on EU level y/n/ Reference
Sandy clay loam	Melbourne, UK (WG)	6.6	30	59.1	196.3	10.1	DFOP	
Clay loam	Idice, Italy (WG)	7.5	30	87.1	289.2	29.8	SFO	
Clay loam	Barry d’Islemade, France (WG)	6.4	30	87.5	290.7	38.2		
Clay silt	Goch-Nierswalde, Germany (CS)	6.1-6.2	50	120.1	398.9	14.4		
Silty sand	Lentzke, Germany (CS)	5.9	50	43.3	144.0	10.0		
Sand	Utrera, Spain (CS)	6.6-7.4	50	39.8	132.3	5.7		
Loamy sand	Dugliolo, Italy (CS)	8.4-8.5	50	99.6	330.8	28.6		
pH dependence:				No				

\*Normalization to derive modelling kinetic endpoints are meaningless when one of the processes involved in the dissipation is volatilization, therefore EFSA removed normalized endpoints from the LoEP and maximum DissT50 is used for PECsoil calculations.

**Table 8.4-2: Summary of aerobic degradation rates for M455H001 - field studies**

M455H001, Field studies – from EFSA Journal 2016;14(3):4420										
Soil type	Location	pH (CaCl <sub>2</sub> )	Depth (cm)	DissT50 (d) actual	DT90 (d) actual	f.f.	DT50 (d) norm.*	St. (x <sup>2</sup> )	Method of calc.	Evaluated on EU level y/n/ Reference
Loamy sand	Brunne, Germany	4.2	40	117.7	391	-	-*	11.1	SFO	EFSA Journal 2016;14(3):4420

\*Normalization to derive modelling kinetic endpoints are meaningless when one of the processes involved in the dissipation is volatilization. Whereas no direct volatilization is expected for metabolite M455H001 therefore, EFSA removed normalized end point because are correlated with pendimethalin endpoints that are unreliable due to volatilization.

#### 8.4.2 Soil accumulation testing (KCP 9.1.1.2.2)

Soil accumulation and plateau concentration for Pendimethalin	Plateau concentration of 0.186 mg/kg reached after 4 years (based on calculation)
---	---

#### 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.

### 8.5.1 Pendimethalin and its metabolites

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

Pendimethalin									
Soil name	Soil type	OC (%)	pH (CaCl <sub>2</sub> )	Kd (mL/g)	Kdoc (mL/g)	Kf (mL/g)	Kfoc (mL/g)	1/n (-)	Evaluated on EU level y/n/ Reference
Borstel	Loamy sand	1.29	5.4	228.5	17710	159.7	12380	0.919	EFSA Journal 2016;14(3):4420
Rendzina Soest	Silty clay loam	4.10	7.3	420	10241	366.6	8942	0.980	
LUFA 2.2	Loamy sand	2.17	5.7	362.5	16699	273.4	12599	0.943	
Parabraunerde Soest	Silt loam	1.26	6.9	169	13414	123.7	9814	0.941	
LUFA 2.1	Sand	0.60	5.6	120.74	20124	113.7	18954	0.993	
LUFA 2.3	Sandy loam	0.99	6.7	150.05	15156	110.5	11160	0.958	
Bruch West	Sandy loam	1.63	7.3	226.64	13905	202.8	12442	0.961	
Nierswalder Wildacker	Silt loam	1.85	5.7	677.16	36604	510.2	27578	0.960	
La Girona	Sandy clay loam	1.22	7.4	165.51	13566	125.1	10258	0.931	
Geomean (n=9)							12943	-	
Arithmetic mean (n=9)							-	0.954	
pH-dependency							No		

**Table 8.5-2: Summary of soil adsorption/desorption for M455H001**

M455H001									
Soil Name	Soil Type	OC (%)	pH (CaCl <sub>2</sub> )	Kd (mL/g)	Kdoc (mL/g)	Kf (mL/g)	Kfoc (mL/g)	1/n (-)	Evaluated on EU level y/n/ Reference
LUFA 2.1	Sand	0.60	5.6	1.4 - 2.2	232-366	1.896	316.0	1.01	EFSA Journal 2016;14(3):4420
LUFA 2.3	Sandy loam	1.85	5.7	5.4 - 6.7	294-362	4.840	261.6	0.97	
Li 10	Loamy sand	0.97	6.2	4.3 - 5.8	441-593	3.191	328.9	0.93	
La Girona	Sandy clay loam	1.22	7.4	3.7 - 4.6	305-373	3.246	266.1	0.96	
Brunch West	Sandy loam	1.36	7.4	0.8 - 1.8	59.7-134	1.041	76.6	0.96	
Geomean (n=5)							<b>223.2</b>	-	



M455H001									
Soil Name	Soil Type	OC (%)	pH (CaCl <sub>2</sub> )	Kd (mL/g)	Kdoc (mL/g)	Kf (mL/g)	Kfoc (mL/g)	1/n (-)	Evaluated on EU level y/n/ Reference
Arithmetic mean (n=5)							-	0.966	
pH-dependency							No		

**Table 8.5-3: Summary of soil adsorption/desorption for M455H033 (P48)**

M455H033									
Soil Name	Soil Type	OC (%)	pH (CaCl <sub>2</sub> )	Kd (mL/g)	Kdoc (mL/g)	Kf* (mL/g)	Kfoc* (mL/g)	1/n* (-)	Evaluated on EU level y/n/ Reference
LUFA 2.1	Sand	0.60	5.6	18	2921	-	-	-	EFSA Journal 2016;14(3):4420
Brunch West	Sandy loam	1.36	7.4	23	1669	-	-	-	
-	Silt loam	1.85	5.7	106	5747	-	-	-	
Li 10	Li 10	0.97	6.2	37	3861	-	-	-	
La Gironde	La Gironde	1.22	7.4	36	2974	-	-	-	
Geomean (n=5)					3173.2	-	-	1 (default)	
pH-dependency							No		

\*Could not be determined due to transformation of M455H033

### 8.5.2 Column leaching (KCP 9.1.2.1)

No data was submitted during the EU peer review of Pendimethalin renewal as considered as not required.

Data from review report (SANCO 7477/VI/98-final 13th January 2003): Mobility was very low (less than 2% of applied dose).

### 8.5.3 Lysimeter studies (KCP 9.1.2.2)

No data was submitted during the EU peer review of Pendimethalin renewal as considered as not required.

Data from review report (SANCO 7477/VI/98-final 13th January 2003): Pendimethalin was not observed in the leachate.

### 8.5.4 Field leaching studies (KCP 9.1.2.3)

No data was submitted during the EU peer review of Pendimethalin renewal as considered as not required.

Data from review report (SANCO 7477/VI/98-final 13th January 2003): Pendimethalin was not observed in the leachate.

## 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.

### 8.6.1 Pendimethalin and its metabolites

**Table 8.6-1: Summary of degradation in water/sediment of Pendimethalin**

Pendimethalin Distribution (max. water 89.8 % after 0 days, max in sediment 86.0% after 7 days)													
Water /sediment system	pH water	pH sed. (CaCl <sub>2</sub> )	t.°C	DegT 50 whole syst. (d)	DegT 90 whole syst. (d)	St. (X <sup>2</sup> )	DissT 50 water (d)	DissT 90 water (d)	St. (X <sup>2</sup> )	Diss T50 sed. (d)	Diss T90 sed. (d)	Method of calculation**	Evaluated on EU level y/n/ Reference
Wenne*	-	-	-	15.1	50.2	9.0	-	-	-	-	-	SFO	EFSA Journal 2016;14(3):4420
Mühlenteich*	-	-	-	9.3	31.0	5.0	-	-	-	-	-		
Berghäuser Altrhein (1)	8.15	7.2	20	27.5	91.4	13.4	1.1	4.9	-	31.3	96.9		
Ranschgraben (1)	8.02	5.6	20	25.4	84.2	4.8	0.6	12.0	-	31.4	-		
Berghäuser Altrhein (2)	7.66	7.3	20	101.4	336.8	2.4	0.42	4.77	4.7	-	-		
Ranschgraben (2)	7.88	6.3	20	103.1	342.6	2.1	0.41	8.18	7.1	-	-		
Geometric mean at 20°C*** (n=6)				<b>31.8</b>	<b>105.5</b>								

\*Old water sediment study evaluated in initial DAR not all data available. New kinetic evaluation available, study conducted at 20°C

\*\*For whole system kinetics

\*\*\*For the purpose of the application of Guidance on Information Requirements and Chemical Safety Assessment. Chapter R11: PBT/vPvB assessment (ECHA, November 2014) the range of half-lives in fresh water/sediment systems normalized at 12 °C is : 19.8 d - 219 d

**Table 8.6-2: Summary of degradation in water/sediment of M455H033**

P48 (M455H033) Distribution (max. water 1.48 % after 7 days, max in sediment 10.61% after 7 days)											
Water /sediment system	pH water	pH sed. (CaCl <sub>2</sub> )	t.°C	DegT 50 whole syst. (d)	DegT90 whole syst. (d)	St. (X <sup>2</sup> )	DissT 50 / DissT 90 water (d)	St. (X <sup>2</sup> )	DissT50 / DissT90 sed. (d)	Method of calculation**	Evaluated on EU level y/n/ Reference
Schaephysen	7.3	-	20	5.02	74.2 (65.95*)	6.7	-	-	-	DFOP	EFSA Journal 2016;14(3):4420
Rückhaltebecken	7.1	-	20	5.9	19.5	9.2	-	-	-	SFO	

<b>P48 (M455H033) Distribution (max. water 1.48 % after 7 days, max in sediment 10.61% after 7 days)</b>											
Water /sediment system	pH water	pH sed. (CaCl <sub>2</sub> )	t.°C	DegT 50 whole syst. (d)	DegT90 whole syst. (d)	St. (X <sup>2</sup> )	DissT 50 / DissT 90 water (d)	St. (X <sup>2</sup> )	DissT50 / DissT90 sed. (d)	Method of calculation**	Evaluated on EU level y/n/ Reference
Geometric mean at 20°C** (n=2)				5.4	38 (19.7*)						

\*Slow phase DFOP used for modelling

\*\*Normalized using a Q10 of 2.58

**Table 8.6-3: Summary of degradation in water/sediment of P36**

<b>P36 (M12; M455H029) Distribution (max. water 2.03% after 7 days, max in sediment 21.32% after 7 days)</b>											
Water /sediment system	pH water	pH sed. (CaCl <sub>2</sub> )	t.°C	DegT 50 whole syst. (d)	DegT 90 whole syst. (d)	St. (X <sup>2</sup> )	DissT50 / DissT90 water (d)	St. (X <sup>2</sup> )	DissT50 / DissT90 sed. (d)	Method of calculation**	Evaluated on EU level y/n/ Reference
Schaepfysen	7.3	-	20	3.9	12.9	6.7	-	-	-	SFO	EFSA Journal 2016;14(3):4420
Rückhalte-becken	7.1	-	20	3.1	10.4	9.2	-	-	-		
Geometric mean at 20°C* (n=2)				3.5	11.6						

\*Normalized using a Q10 of 2.58

**Table 8.6-4: Summary of observed metabolites**

<b>P48 (M455H033) Water/sediment system</b>	Max. in water :1.48%/sediment: 10.61/whole system: 12.1 % after 7 d	EFSA Journal 2016;14(3):4420
<b>P36 (M12;M455H029) Water/sediment system</b>	Max. in water: 2.03%/sediment: 21.32/ whole system: 23.4 % after 7 d	

## 8.7 Predicted Environmental Concentrations in soil (PEC<sub>soil</sub>) (KCP 9.1.3)

### 8.7.1 Justification for new endpoints

The used endpoints are the EU agreed ones in EFSA Journal 2016;14(3):4420.

### 8.7.2 Active substance and relevant metabolites

**Table 8.7-1: Input parameters related to application for PEC<sub>soil</sub> calculations**

Use No.	1, 2	3, 4	5, 6	7	8	9, 10, 27	11	12, 23, 30	13	14
---------	------	------	------	---	---	-----------	----	------------	----	----

Crop	Win- ter cere- als	Maiz e	Apple early (Pome/sto ne fruits) (between rows**)	Sun- flower	Soy- beans	Bulb veg. (onion, garlic, shallot, spring onion, ornamen- tals)	Bea n	Root veg. (carrot, pars- ley, parnsnip,fen- nel)	Leg- umes (lu- pine)	Win- ter OSR
Application rate (g as/ha)	1590*			1183		1590*			1183	455
Number of applications/inte rval	1									
Crop interception (%)	0 (worst case)									
Depth of soil layer (relevant for plateau concentration) (cm)	20		5	20						

\*Worst case for PEC<sub>soil</sub> calculations

\*\*For application between rows the treated area has been considered as the 75% as worst case.

**Table 8.7-2: Input parameters related to application for PEC<sub>soil</sub> calculations (Continuation)**

Use No.	15	16, 17, 21, 22, 24, 29	18, 31	19, 20	25	26,	27	28
Crop	Win- ter OSR	Leafy veg, (Aspara- gus, brassi- cas, leek, lettuce, endive, artichoke)	Fruiting veg. (strawber- ry – be- tween rows**, cucurbitas)	Bushber- ries (Rasp- berry, cur- rants, be- tween rows**)	Pota- to	Vines early (grape- vine, be- tween rows**)	Vines early (ornamen- tals)	Grass (clover, alfaalfa)
Application rate (g as/ha)	910	1590*		1590*	1590*			1000
Number of applications/interv al	1							
Crop interception (%)	0 (worst case)							
Depth of soil layer (relevant for plateau concentration) (cm)	20			5	20	5		20

\*Worst case for PEC<sub>soil</sub> calculations

\*\*For application between rows the treated area has been considered as the 75% as worst case.

### 8.7.2.1 Pendimethalin and its metabolites

**Table 8.7-3: PEC<sub>soil</sub> for Pendimethalin (worst case)**

PEC <sub>soil</sub> (mg/kg) <b>DT<sub>50</sub>(d): 187 days</b>		Single application	
		Actual	TWA
Initial		2.120	-
Short term	24h	2.112	2.116
	2d	2.104	2.112
	4d	2.089	2.104
Long term	7d	2.066	2.093
	14d	2.013	2.066
	21d	1.961	2.040
	28d	1.911	2.014
	50d	1.761	1.935
	100d	1.463	1.771
Plateau concentration (5) after year 12		0.739	-
PEC <sub>accumulation</sub> (PEC <sub>act</sub> + PEC <sub>soil plateau</sub> )		2.859	
Plateau concentration (20) after year 12		0.185	
PEC <sub>accumulation</sub> (PEC <sub>act</sub> + PEC <sub>soil plateau</sub> )		2.305	

**Table 8.7-4: Application rates for each relevant metabolite**

Active sub- stance	Metabolite	Application rate of the parent (g/ha)	MW parent	MW metabolite	Maximum occurrence in soil (%)	Corrected application rate (g/ha)
Pendime- thalin	M455H001	1590	281.3	311.3	6.9	121.4
	M455H033			251.3	25.9	367.9

\*For application between rows the treated area has been considered as the 75% as worst case

### PEC<sub>soil</sub> of metabolites

**Table 8.7-5: PEC<sub>soil</sub> for M455H001 (worst case)**

PEC <sub>soil</sub> (mg/kg) <b>DT<sub>50</sub>(d): 117.7 day</b>	Single application	
	Actual	TWA
Initial	0.162	-

Short term	24h	0.161	0.161
	2d	0.160	0.161
	4d	0.158	0.160
Long term	7d	0.155	0.159
	14d	0.149	0.155
	21d	0.143	0.152
	28d	0.137	0.149
	50d	0.121	0.140
	100d	0.090	0.122
Plateau concentration (5 cm) after year 7		0.021	-
PEC <sub>accumulation</sub> (PEC <sub>act</sub> + PEC <sub>soil plateau</sub> )		0.183	-

**Table 8.7-6: PEC<sub>soil</sub> for M455H033 (worst case)**

PEC <sub>soil</sub> DT50(d): 3.6 days (mg/kg)		Single application	
		Actual	TWA
Initial		0.491	-
Short term	24h	0.405	0.446
	2d	0.334	0.407
	4d	0.227	0.342
Long term	7d	0.127	0.269
	14d	0.033	0.170
	21d	0.009	0.119
	28d	0.002	0.091
	50d	<0.001	0.051
	100d	<0.001	0.025
Plateau concentration (5/20 cm) after year x		-	-
PEC <sub>accumulation</sub> (PEC <sub>act</sub> + PEC <sub>soil plateau</sub> )		-	-

### 8.7.2.2 PEC<sub>soil</sub> of PENSHUI

**Table 8.7-7: PEC<sub>soil</sub> for PENSHUI (worst case)**

Active substance/ reparation	Application rate (g/ha)	PEC <sub>act</sub> (mg/kg)	Tillage depth (cm)
Pendimethalin/ PENSHUI	4096.8*	5.463	-

\*According to the determined density of 1.1705 g/cm<sup>3</sup>

#### Evaluator comments:

The PECs calculations have been accepted.

The input parameters used in calculation was established in the EU review for pendimethalin EFSA Journal 2016;14(3):4420.

Interception has been appropriate to the proposed BBCH of crops (EFSA guidance was published, (2014;12(5):3662).

The PECs calculations were performed for worst case (the highest application rate of 1.59 kg as/ha without interception) and cover all proposed uses in GAP.

The results of PECs calculation are presented in Table 8.7-3 - Table 8.7-7.

The results initial PEC soil of the active substance pendimethalin and its metabolites in soil are appropriate to be used for the subsequent risk assessment.

## 8.8 Predicted Environmental Concentrations in groundwater (PEC<sub>gw</sub>) (KCP 9.2.4)

### 8.8.1 Justification for new endpoints

The used endpoints are the EU agreed ones in EFSA Journal 2016;14(3):4420.

### 8.8.2 Active substance and relevant metabolites

As risk envelope the highest application rate of 1.59 kg as/ha without interception has been run in winter cereals in all seasons to cover all crops.

**Table 8.8-1: Application dates used for groundwater risk assessment**

Crop	Scenario	Application dates (absolute)*			
		Autumn (preemergence)	Winter BBCH 11	Spring BBCH 41	Summer BBCH 71
Winter cereals	Châteaudun	14 days before emergence	28/10	02/05	26/06
	Hamburg		03/11	14/05	11/07
	Jokioinen		22/09	29/05	24/07
	Kremsmünster		07/11	09/05	12/07
	Okehampton		19/10	30/04	28/06
	Piacenza		03/12	07/04	08/06
	Porto		04/12	04/03	04/06
	Sevilla		03/12	21/04**	31/05****
	Thiva		03/12	02/04***	21/05

\*According to AppDate v3.06 (28 June 2019)

\*\*BBCH 77

\*\*\*BBCH 61

\*\*\*\*BBCH 90

**Table 8.8-2: Input parameters related to active substance Pendimethalin and for the non-relevant metabolites M455H001 and M455H033 for PEC<sub>gw</sub> calculations**

Compound	Pendimethalin	M455H001	M455H033	Value in accordance with EU end-point y/n/ Reference
Molecular weight (g/mol)	281.3	311.3	251.3	EFSA Journal 2016;14(3):4420
Water solubility (mg/L):	0.330 (20°C)	100 (20°C)	100 (20°C)	
Saturated vapour pressure (Pa):	3.34 x 10 <sup>-3</sup> (25°C) 1.74 x 10 <sup>-3</sup> (20°C)*	1 x 10 <sup>-10</sup> (20°C)	1 x 10 <sup>-10</sup> (20°C)	
DT50 in soil (d)	182.28 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 5)	39.96 (geomean, normalisation to 10 kPa or pF2, 20 °C with Q10 of 2.58, n = 4)	3.6 (worst case, anaerobic DT <sub>50</sub> )	
K <sub>foc</sub> /K <sub>fom</sub> (mL/g)	12943/7508 (geomean, n = 9)	223.2/129.5 (Geomean, n = 5)	3173.2/1841 (Geomean, n = 5)	
1/n	0.954 (arithmetic mean, n = 9)	0.966 (arithmetic mean, n = 5)	1.0 (default)	
Plant uptake factor	0			
Formation fraction	-	0.231 from parent	1 from parent	

\*Derived from EVA 3.0 and used on PELMO calculations

\*\*For pendimethalin DT50 soil = 182.28 must be used in subsequent modelling EFSA Journal 2016;14(3):4420

**Table 8.8-3: PEC<sub>gw</sub> for active Pendimethalin and its non-relevant metabolites M455H001 and M455H033 on winter cereals with FOCUS PEARL 4.4.4/PELMO 5.5.3 (Autumn application)**

Crop	Scenario	80 <sup>th</sup> Percentile PEC <sub>gw</sub> at 1 m Soil Depth (µg/L)					
		Pendimethalin		M455H001		M455H033	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Winter cereals	Châteaudun	<0.001	<0.001	0.005	<0.001	<0.001	<0.001
	Hamburg	<0.001	<0.001	<b>0.120</b>	0.004	<0.001	<0.001
	Jokioinen	<0.001	<0.001	0.016	0.001	<0.001	<0.001
	Kremsmünster	<0.001	<0.001	0.077	0.003	<0.001	<0.001
	Okehampton	<0.001	<0.001	<b>0.165</b>	0.006	<0.001	<0.001
	Piacenza	<0.001	<0.001	0.075	0.002	<0.001	<0.001
	Porto	<0.001	<0.001	0.052	0.002	<0.001	<0.001
	Sevilla	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Thiva	<0.001	<0.001	0.001	<0.001	<0.001	<0.001



**Table 8.8-4: PEC<sub>gw</sub> for active Pendimethalin and its metabolites on winter cereals with FOCUS PEARL 4.4.4/PELMO 5.5.3 (Winter application)**

Crop	Scenario	80 <sup>th</sup> Percentile PEC <sub>gw</sub> at 1 m Soil Depth (µg/L)					
		Pendimethalin		M455H001		M455H033	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Winter cereals	Châteaudun	<0.001	<0.001	0.005	<0.001	<0.001	<0.001
	Hamburg	<0.001	<0.001	<b>0.119</b>	0.005	<0.001	<0.001
	Jokioinen	<0.001	<0.001	0.016	0.001	<0.001	<0.001
	Kremsmünster	<0.001	<0.001	0.077	0.003	<0.001	<0.001
	Okehampton	<0.001	<0.001	<b>0.163</b>	0.012	<0.001	<0.001
	Piacenza	<0.001	<0.001	0.075	0.002	<0.001	<0.001
	Porto	<0.001	<0.001	0.052	0.008	<0.001	<0.001
	Sevilla	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Thiva	<0.001	<0.001	0.001	<0.001	<0.001	<0.001

**Table 8.8-5: PEC<sub>gw</sub> for active Pendimethalin and its non-relevant metabolites M455H001 and M455H033 on winter cereals with FOCUS PEARL 4.4.4/PELMO 5.5.3 (Spring application)**

Crop	Scenario	80 <sup>th</sup> Percentile PEC <sub>gw</sub> at 1 m Soil Depth (µg/L)					
		Pendimethalin		M455H001		M455H033	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Winter cereals	Châteaudun	<0.001	<0.001	0.005	<0.001	<0.001	<0.001
	Hamburg	<0.001	<0.001	<b>0.127</b>	0.001	<0.001	<0.001
	Jokioinen	<0.001	<0.001	0.017	<0.001	<0.001	<0.001
	Kremsmünster	<0.001	<0.001	0.077	0.003	<0.001	<0.001
	Okehampton	<0.001	<0.001	<b>0.159</b>	0.011	<0.001	<0.001
	Piacenza	<0.001	<0.001	0.078	0.001	<0.001	<0.001
	Porto	<0.001	<0.001	0.051	0.003	<0.001	<0.001
	Sevilla	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Thiva	<0.001	<0.001	0.001	<0.001	<0.001	<0.001

**Table 8.8-6: PEC<sub>gw</sub> for active Pendimethalin and its non-relevant metabolites M455H001 and M455H033 on winter cereals with FOCUS PEARL 4.4.4/PELMO 5.5.3 (Summer application)**

Crop	Scenario	80 <sup>th</sup> Percentile PEC <sub>gw</sub> at 1 m Soil Depth (µg/L)					
		Pendimethalin		M455H001		M455H033	
		PEARL	PELMO	PEARL	PELMO	PEARL	PELMO
Winter cereals	Châteaudun	<0.001	<0.001	0.006	<0.001	<0.001	<0.001
	Hamburg	<0.001	<0.001	<b>0.126</b>	0.002	<0.001	<0.001
	Jokioinen	<0.001	<0.001	0.017	0.001	<0.001	<0.001
	Kremsmünster	<0.001	<0.001	0.078	0.002	<0.001	<0.001
	Okehampton	<0.001	<0.001	<b>0.163</b>	0.007	<0.001	<0.001
	Piacenza	<0.001	<0.001	0.085	0.003	<0.001	<0.001
	Porto	<0.001	<0.001	0.057	0.001	<0.001	<0.001
	Sevilla	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Thiva	<0.001	<0.001	0.002	<0.001	<0.001	<0.001

Due to in PEARL Hamburg and Okehampton scenarios, the PEC<sub>gw</sub> values for the non-relevant metabolite M455H001 exceeded the threshold value of 0.1 µg/L, in CEU relevant Hamburg and Okehampton scenario, additional modelling at a higher tier were also carried out by reducing the application rates as per GAP table specifications, and considering the crop coverage caused by the weeds (an interception of 25% is frequently used for herbicide applications). Recalculated PEC<sub>gw</sub> values for the concerning scenarios and refinements are given in the below table:

**Table 8.8-7: PEC<sub>gw</sub> refinements for metabolite M455H001 on winter cereals with FOCUS PEARL 4.4.4 only for CEU relevant scenarios**

Application rate (g a.s./ha)	Intercept. (%)	Scenario	80 <sup>th</sup> Percentile PEC <sub>gw</sub> at 1 m Soil Depth (µg/L)			
			Autumn	Winter	Spring	Summer
1590 (worst case)	0	Hamburg	<b>0.120</b>	<b>0.119</b>	<b>0.127</b>	<b>0.126</b>
		Okehampton	<b>0.165</b>	<b>0.163</b>	<b>0.159</b>	<b>0.163</b>
	25*	Hamburg	0.086	0.085	0.091	0.090
		Okehampton	0.118	0.117	0.114	0.117
1365	0	Hamburg	<b>0.100</b>	<b>0.100</b>	<b>0.106</b>	<b>0.106</b>
		Okehampton	<b>0.139</b>	<b>0.137</b>	<b>0.136</b>	<b>0.136</b>
	25*	Hamburg	-	-	0.076	0.076
		Okehampton	0.099	0.098	0.096	0.097
1192 (1590 between rows)	0	Hamburg	-	-	0.091	0.090
		Okehampton	<b>0.118</b>	<b>0.117</b>	<b>0.114</b>	<b>0.117</b>

1183	0	Okehampton	<b>0.117</b>	<b>0.116</b>	<b>0.113</b>	<b>0.116</b>
1137	0	Okehampton	<b>0.112</b>	<b>0.111</b>	<b>0.108</b>	<b>0.110</b>
1000**	0	Okehampton	-	-	-	-

\*Interception due to the weeds themselves

\*\*Covered by 1365 g/ha with a 25% of interception (1024 g/ha)

## Conclusions

Although there is not an unacceptable risk from 1365 g as/ha with a 25% of interception (due to the weed themselves) in none of the FOCUS scenarios, the Applicant would like to propose the following mitigation measure that should apply only at national level since Okehampton scenario is relevant in some CEU countries:

SPe 2: To protect the groundwater do not apply this product in soils with loam texture with a content of organic matter greater than 3.8%, at application rates higher than 1365 g a.i./ha during all seasons.

### zRMS comments:

Evaluator agrees with modelling carried out by applicant.

The input parameters for groundwater calculation were established in the EU reviews (EFSA Journal EFSA Journal 2016;14(3):4420)

Interception was appropriate to the proposed BBCH of crops (EFSA guidance was published, (2014;12(5):3662).

In simulations PUF value of 0 was assumed for all compounds, in line with recommendations of the most recent version of the FOCUS Groundwater Guidance. The geomean of the DT50 and Kfoc values were used in modelling.

The PECs calculations were performed for worst case (the highest application rate of 1.59 kg as/ha without interception) and cover all proposed uses in GAP.

The results of the leaching models PEARL 4.4.4 and PELMO 5.5.3 show that when used according to the intended use of pendimethalin its metabolites leach in acceptable amounts to groundwater in every European scenario, since all PEC<sub>GW</sub> were found to be under the limit of 0.1 µg/L except metabolite M455H001.

For metabolite M455H001 for winter cereals for Hamburg and Okehampton scenario was carried out additional modelling with reduced the application rates as per GAP table specifications, and considering the crop coverage caused by the weeds (an interception of 25% ).

However this modelling should be considered at national level.

The assessment relevance of the metabolite M455H001 in ground water according to SANCO/221/2000 –rev.10 document should be done and reported in the dRR Part B10.

The mitigation measure should considered at national level if scenario Hamburg or Okehampton are relevant for country.

## 8.9 Predicted Environmental Concentrations in surface water (PEC<sub>sw</sub>) (KCP 9.2.5)

### 8.9.1 Justification for new endpoints

The used endpoints are the EU agreed ones in EFSA Journal 2016;14(3):4420.

## 8.9.2 Active substance, relevant metabolites and the formulation (KCP 9.2.5)

**Table 8.9-1: Input parameters related to application for PEC<sub>SW/SED</sub> calculations**

**FOCUS Steps 1/2 related input parameters for PEC<sub>sw/sed</sub> calculations for the application of product**

Plant protection product	PENSHUI 45.5 SC
Use No.	All uses
Crop	All crops
Pendimethalina pplication rate (kg as/ha)	1590 g as/ha (worst case)
Number of applications/interval (d)	1/-
Application window	March-May June-September October-February
Application method	Application by hand (crop < 50 cm, no interception) (steps 1&2) Ground spray/soil incorporation (steps 3 &4)
CAM (Chemical application method)	2/8
Soil depth (cm)	Water body: 30cm Sediment: 4/8cm
Models used for calculation	FOCUS STEPS 1/2 v3.2, FOCUS SWASH v5.3, FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXWA v5.5, SWAN 5.0.0

**Table 8.9-2: FOCUS Step 3 Scenario related input parameters for PEC<sub>sw/sed</sub> calculations for the application of PENSHUI**

Application window used in modelling*										
Use	1, 2	3, 4	5, 6	7	8	9, 10	11	12, 23, 30	13	14
Scenario/Crop	Winter cereals (1 x 1590 g/ha)	Maize (1 x 1590 g/ha)	Apple ear-ly* (pome/stone fruits) (1 x 1590 g/ha, be-tween rows**)	Sunflower*** (1x 1183 g/ha)	Soybean*** (1x 1183 g/ha)	Bulb veg. (onion, gar-lic, shallot, spring onion, and orna-mentals) (1 x 1590 g/ha)	Field beans (Beans) (1 x 1590 g/ha)	Root veg.*** (Carrots, parsley, parnsnip, fennel ) (1 x 1590 g/ha)	Legumes (lupine) (1 x 1183 g/ha)	Winter OSR (1x 455 g/ha )
D1	14 days before emergence									
D2										
D3 1 <sup>st</sup>										
D3 2 <sup>nd</sup>										
D4										
D5										
D6 1 <sup>st</sup>										
D6 2 <sup>nd</sup>										
R1 1 <sup>st</sup>										
R1 2 <sup>nd</sup>										
R2 1 <sup>st</sup>										
R2 2 <sup>nd</sup>										
R3 1 <sup>st</sup>										

Application window used in modelling*										
Use	1, 2	3, 4	5, 6	7	8	9, 10	11	12, 23, 30	13	14
Scenario/Crop	Winter cereals (1 x 1590 g/ha)	Maize (1 x 1590 g/ha)	Apple early* (pome/stone fruits) (1 x 1590 g/ha, between rows**)	Sunflower*** (1x 1183 g/ha)	Soybean*** (1x 1183 g/ha)	Bulb veg. (onion, garlic, shallot, spring onion, and ornamentals) (1 x 1590 g/ha)	Field beans (Beans) (1 x 1590 g/ha)	Root veg.*** (Carrots, parsley, parsnip, fennel ) (1 x 1590 g/ha)	Legumes (lupine) (1 x 1183 g/ha)	Winter OSR (1x 455 g/ha )
R3 2 <sup>nd</sup>										
R4 1 <sup>st</sup>										
R4 2 <sup>nd</sup>										

According to AppDate v3.06 (28 June 2019)

\*All scenarios were modified manually and the drift values for cereals instead of apple were fixed in TOXSWA since the application is to the weeds not to the trees.

\*\*For application between rows the treated area has been considered as the 75% as worst case.

\*\*\* National scenarios relevant for Poland are D3, D4 and R1. Due to fact that drainage scenarios (D3, D4 and R1) are not available for some crops in programs used for modelling, the surrogate crop (SC) was proposed: SC for sunflower and grass – winter cereals, SC for soybeans – legumes, SC for root vegetables and fruit vegetables – vegetables leafy 1<sup>st</sup>, SC for Vines early appln. – Apple early\*. Presented calculation was done for surrogate crops, for scenarios D3, D4 and R1 considering all input data as for SC.

Application window used in modelling*									
Use	15	16, 17, 21, 22, 24, 29	18	19	20, 26	25	27	28	29
Scenario/Crop	Winter OSR (1x 910 g/ha)	Leafy veg. (asparagus, brassicas, leek, lettuce, endive, artichoke) (1 x 1590 g/ha)	Fruiting veg. (Strawberry***) (1 x 1590 g/ha between rows**)	Vines early* (Raspberry****) (1 x 1365 g/ha, between rows**)	Vines early* (currants, grapevine and ornamentals)*** (1 x 1590 g/ha, between rows**)	Potato (1 x 1590 g/ha)	Vines early* (ornamentals) (1 x 1590 g/ha)	Grass (Clover, afaalfa)*** 1 x 1000 g/ha)	Fruiting veg. (Cucurbits***) (1 x 1590 g/ha)
D1	-	14 days before emergence						31/03 – 30/04	14 days before emergence
D2	16/09 – 16/10								
D3 1 <sup>st</sup>	03/09 – 03/10								
D3 2 <sup>nd</sup>	-								
D4	04/09 – 04/10								
D5	21/09 – 21/10								
D6 1 <sup>st</sup>	-								
D6 2 <sup>nd</sup>	-								
R1 1 <sup>st</sup>	05/09 – 05/10								
R1 2 <sup>nd</sup>	-								
R2 1 <sup>st</sup>	-								
R2 2 <sup>nd</sup>	-								
R3 1 <sup>st</sup>	06/10 – 05/11								

Application window used in modelling*									
Use	15	16, 17, 21, 22, 24, 29	18	19	20, 26	25	27	28	29
Scenario/Crop	Winter OSR (1x 910 g/ha)	Leafy veg. (asparagus, brassicas, leek, lettuce, endive, arti- choke) (1 x 1590 g/ha)	Fruiting veg. (Strawberry***) (1 x 1590 g/ha between rows**)	Vines early* (Raspberry***) (1 x 1365 g/ha, between rows**)	Vines early* (cur- rants, grapevine and ornamen- tals)*** (1 x 1590 g/ha, be- tween rows**)	Potato (1 x 1590 g/ha)	Vines early* (ornamentals) (1 x 1590 g/ha)	Grass (Clover, afaalfa)*** 1 x 1000 g/ha)	Fruiting veg. (Cucurbits***) (1 x 1590 g/ha )
R3 2 <sup>nd</sup>	-								
R4 1 <sup>st</sup>	-								
R4 2 <sup>nd</sup>	-								

According to AppDate v3.06 (28 June 2019)

\*All scenarios were modified manually and the drift values for cereals instead of apple were fixed in TOXSWA since the application is to the weeds not to the trees.

\*\*For application between rows the treated area has been considered as the 75% as worst case.

\*\*\* National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4 and R1 are not available for some crops in programs used for modelling, the surrogate crop (SC) was proposed: SC for sunflower and grass – winter cereals, SC for soybeans – legumes, SC for root vegetables and fruit vegetables – vegetables leafy 1<sup>st</sup>, SC for Vines early appln. – Apple early\*. Presented calculation was done for surrogate crops, for scenarios D3, D4 and R1 considering all input data as for SC.



### 8.9.2.1 Pendimethalin and its metabolites

**Table 8.9-4: Input parameters related to active substance Pendimethalin and its metabolites for PEC<sub>sw</sub>/sed calculations STEP 1/2 and 3/(4) (if necessary)**

Compound	Pendimethalin	P44 (M455H001)	P48 (M455H033)	2,6-dinitro-3,4-dimethylaniline (M455H032)	P36 (M455H029)	Value in accordance to EU endpoint y/n/ Reference
Molecular weight (g/mol)	281.3	311.3	251.3	211.2	261.3	EFSA Journal 2016;14(3):4420
Saturated vapour pressure (Pa)	3.34 x 10 <sup>-3</sup> (25°C)	-	1 x 10 <sup>-10</sup> (20°C)			Pendmethalin RAR Volume 3 and EFSA Journal 2016;14(3):4420
Water solubility (mg/L)	0.330 (pH 7, 20°C)	100 (20°C)	100 (20°C)	100 (20°C)	100 (20°C)	EFSA Journal 2016;14(3):4420
Diffusion coefficient in water (m²/d)	4.3 x 10 <sup>-5</sup>	-	4.3 x 10 <sup>-5</sup>			default
Diffusion coefficient in air (m²/d)	0.43	-	0.43			default
K <sub>foc</sub> /K <sub>fom</sub> (mL/g)	12943/7508 (geomean, n = 9)	223.2/129.5 (Geomean, n = 5)	3173.2/1841 (Geomean, n = 5)	0	10000/5800	EFSA Journal 2016;14(3):4420
Freundlich Exponent 1/n	0.954 (arithmetic mean, n = 9)	-	1.0 (default)			
Plant Uptake	0	-	0			
Wash-Off factor from Crop (1/mm)	0.05 (MACRO) 0.50 (PRZM)	-	0.05 (MACRO) 0.50 (PRZM)			default
DT50,soil (d)	182.28 (geomean/median, normalisation to 10 kPa or pF2, 20 °C with Q10 of	39.96 (geomean/median, normalisation to 10 kPa or pF2, 20 °C with Q10 of	3.6 (worst case)	1	1000	EFSA Journal 2016;14(3):4420

Compound	Pendimethalin	P44 (M455H001)	P48 (M455H033)	2,6-dinitro-3,4-dimethylaniline (M455H032)	P36 (M455H029)	Value in accordance to EU endpoint y/n/ Reference
	2.58, n =5)	2.58, n =4)				
DT50,water (d)	1000 (default)	1000 (no data)	1000 (default)	6.6* 1000	1000 (default)	
DT50,sed (d)	31.8	1000 (no data)	3.5	1000 (default)	19.7 slow (phase DFOP)	
DT50,whole system (d)	31.8 (geomean, n=6)	1000 (no data)	3.5 (geomean, n=2)	6.6* 1000 (FOCUS default)	19.7 (geomean DT <sub>50</sub> whole system, 20°C)	
Maximum occurrence observed	Sed: 86.0	Soil: 6.9 Total system: 0.00001	Soil: 25.9 Water: 1.48 Sed: 10.61 Total system: 12.1	Soil: 0.00001 Water: 14.2 Total system: 14.2	Soil: 0.00001 Water: 2.03 Sed: 21.32 Total system: 23.4	

#### PEC<sub>sw/sed</sub>

**FOCUS Steps 1/2 have been calculated using the application rate worst case of 1 x 1590 g as/ha interception for appln. hand (crop < 50cm) in all seasons and for both European zones to cover all crops.**

**FOCUS Step 3 for application in trees and vines has been calculated fixing the application method to soil incorporation (CAM 8) instead of air blast (because the application is to the ground instead of the trees) and adding manually the drift values for cereals according to FOCUS Drift Calculator for every kind of scenario (1.976, 0.219 and 1.716 for ditch, pond and stream scenarios respectively).**

**For application between rows it has been considered that the 75% of area (as worst case) is treated so the application rate has been reduced a 25%.**

**Table 8.9-5: FOCUS Step 1 and 2 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSUI to appln. hand (crop < 50cm) (1 x 1590 g/ha)**

Scenario	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
FOCUS					
Step 1	---	43.65	Runoff / drainage	29.94	3860
Step 2					
Northern Europe	Oct-Feb	15.55	Runoff / drainage	12.46	1940
	March-May	14.62		5.48	832.84
	June-Sept				
Southern Europe	Oct-Feb			9.59	1570
	March-May				
	June-Sept			7.53	1200

**Table 8.9-5: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSUI to winter cereals (1 x 1590 g/ha) **in pre emergence****

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	10.07	Drift	1.283	14.53
D1	stream	8.809	Drift	0.320	4.816
D2	ditch	10.08	Drift	1.245	15.29
D2	stream	8.969	Drift	1.082	13.61
D3	ditch	9.930	Drift	0.344	5.180
D4	pond	0.343	Drift	0.121	1.185
D4	stream	8.608	Drift	0.112	1.778
D5	pond	0.343	Drift	0.154	1.542
D5	stream	9.287	Drift	0.160	2.519
D6	ditch	10.04	Drift	1.301	16.05

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1	pond	0.346	Run-off	0.179	3.177
R1	stream	6.543	Run-off	0.113	13.50
R3	stream	9.085	Run-off	0.272	481.4
R4	stream	6.583	Run-off	0.183	4.900

**Table 8.9-6: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to winter cereals (1 x 1590 g/ha) in post emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	10.07	Drift	2.642	26.14
D1	stream	8.809	Drift	0.354	5.326
D2	ditch	10.01	Drift	1.162	16.40
D2	stream	8.126	Drift	0.038	0.567
D3	ditch	9.921	Drift	0.337	5.095
D4	pond	0.343	Drift	0.177	1.760
D4	stream	8.608	Drift	0.115	1.822
D5	pond	0.343	Drift	0.195	2.021
D5	stream	9.287	Drift	0.164	2.580
D6	ditch	10.04	Drift	1.739	20.94
R1	pond	0.351	Run-off	0.225	4.267
R1	stream	6.543	Run-off	0.114	13.51
R3	stream	9.180	Run-off	0.176	4.578
R4	stream	6.489	Run-off	0.179	6.400

**Table 8.9-7: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to winter cereals (1 x 1137 g/ha) in pre emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	7.201	Drift	1.452	14.88
D1	stream	6.298	Drift	0.246	3.687
D2	ditch	7.208	Drift	1.242	15.41
D2	stream	6.413	Drift	1.073	13.72
D3	ditch	7.099	Drift	0.259	3.890
D4	pond	0.245	Drift	0.118	1.146
D4	stream	6.154	Drift	0.082	1.303

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D5	pond	0.245	Drift	0.139	1.449
D5	stream	6.640	Drift	0.118	1.845
D6	ditch	7.177	Drift	1.243	15.01
R1	pond	0.249	Run-off	0.159	3.052
R1	stream	4.678	Run-off	0.080	9.833
R3	stream	6.495	Run-off	0.194	346.3
R4	stream	4.707	Run-off	0.133	3.625

**Table 8.9-8: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to winter cereals (1 x 1137 g/ha) in post emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	7.201	Drift	1.186	18.75
D1	stream	6.298	Drift	0.253	3.810
D2	ditch	7.160	Drift	0.829	11.73
D2	stream	5.810	Drift	0.027	0.404
D3	ditch	7.093	Drift	0.241	3.645
D4	pond	0.245	Drift	0.126	1.264
D4	stream	6.154	Drift	0.082	1.303
D5	pond	0.245	Drift	0.139	1.451
D5	stream	6.640	Drift	0.118	1.845
D6	ditch	7.177	Drift	1.243	15.00
R1	pond	0.249	Run-off	0.159	3.047
R1	stream	4.678	Run-off	0.080	9.780
R3	stream	6.564	Run-off	0.125	3.281
R4	stream	4.640	Run-off	0.127	4.612

**Table 8.9-9: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to maize (1 x 1590 g/ha) in pre emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	8.232	Drift	0.347	5.110
D4	pond	0.332	Drift	0.145	1.445
D4	stream	6.788	Drift	0.019	0.309
D5	pond	0.332	Drift	0.125	1.242

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D5	stream	7.339	Drift	0.021	0.350
D6	ditch	8.233	Drift	0.356	5.109
R1	pond	0.346	Run-off	0.145	2.845
R1	stream	5.691	Run-off	0.128	7.921
R2	stream	7.567	Run-off	0.062	16.21
R3	stream	8.054	Run-off	0.155	2.740
R4	stream	5.690	Run-off	0.351	9.896

**Table 8.9-10: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to maize (1 x 1590 g/ha) in post emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	8.239	Drift	0.375	5.436
D4	pond	0.332	Drift	0.153	1.450
D4	stream	7.055	Drift	0.030	0.483
D5	pond	0.332	Drift	0.152	1.449
D5	stream	7.030	Drift	0.014	0.233
D6	ditch	8.239	Drift	0.365	5.359
R1	pond	0.346	Run-off	0.202	4.036
R1	stream	5.599	Run-off	0.145	15.21
R2	stream	7.636	Run-off	0.062	17.18
R3	stream	8.014	Run-off	0.184	3.742
R4	stream	5.690	Run-off	0.349	11.23

**Table 8.9-11: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to maize (1 x 1137 g/ha) in pre emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	5.886	Drift	0.266	3.918
D4	pond	0.237	Drift	0.130	1.296
D4	stream	4.853	Drift	0.014	0.221
D5	pond	0.237	Drift	0.118	1.143
D5	stream	5.247	Drift	0.015	0.252
D6	ditch	5.886	Drift	0.291	4.129
R1	pond	0.255	Run-off	0.134	2.796

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1	stream	4.069	Run-off	0.091	5.782
R2	stream	5.410	Run-off	0.044	11.87
R3	stream	5.758	Run-off	0.113	2.010
R4	stream	4.068	Run-off	0.249	7.137

**Table 8.9-12: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSUI to maize (1 x 1137 g/ha) in post emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	5.891	Drift	0.268	3.890
D4	pond	0.237	Drift	0.109	1.041
D4	stream	5.044	Drift	0.021	0.345
D5	pond	0.237	Drift	0.109	1.040
D5	stream	5.026	Drift	0.010	0.167
D6	ditch	5.891	Drift	0.261	3.834
R1	pond	0.247	Run-off	0.144	2.875
R1	stream	4.003	Run-off	0.103	11.03
R2	stream	5.459	Run-off	0.044	12.56
R3	stream	5.729	Run-off	0.131	2.683
R4	stream	4.068	Run-off	0.247	8.092

**Table 8.9-137: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSUI to pome/stone fruits (Early application 1 x 1590 g/ha, between rows)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	7.468	Drift	0.320	4.714
D4	pond	0.257	Drift	0.124	1.263
D4	stream	5.697	Drift	0.013	0.206
D5	pond	0.257	Drift	0.110	1.101
D5	stream	6.013	Drift	0.011	0.185
R1	pond	0.257	Run-off	0.102	1.014
R1	stream	4.901	Run-off	0.039	0.626
R2	stream	6.493	Run-off	0.025	0.401
R3	stream	6.902	Run-off	0.086	1.360

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R4	stream	4.902	Run-off	0.039	0.630

**Table 8.9-148:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application to sunflower (1 x 1183 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	7.387	Drift	0.256	3.855
D4*	pond	0.255	Drift	0.090	0.884
D4*	stream	6.403	Drift	0.083	1.323
D5	pond	0.247	Drift	0.099	0.997
D5	stream	5.538	Drift	0.019	0.305
R1	pond	0.257	Run-off	0.105	2.163
R1	stream	4.230	Run-off	0.105	6.702
R3	stream	5.975	Run-off	0.162	5.114
R4	stream	4.242	Run-off	0.256	6.890

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that drainage scenarios D3, D4 are not available for sunflower in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenarios D3, D4 considering all input data as for winter cereals.

**Table 8.9-159:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to soybeans (1 x 1183 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	6.118	Drift	0.238	3.544
D4*	pond	0.247	Drift	0.119	1.214
D4*	stream	4.902	Drift	0.011	0.177
R1 *	pond	0.255	Run-off	0.102	1.872
R1 *	stream	4.235	Run-off	0.080	3.507
R3	stream	5.991	Run-off	0.148	2.563
R4	stream	4.212	Run-off	0.176	9.538



\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4, R1 are not available for soybeans in programs used for modelling, the surrogate crop was proposed: legumes. Presented calculation was done for legumes, for scenarios D3, D4, R1 considering all input data as for legumes.

**Table 8.9-1610: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to bulb vegetables (1 x 1590 g/ha) in pre emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	9.944	Drift	0.388	5.753
D4	pond	0.343	Drift	0.166	1.679
D4	stream	7.595	Drift	0.017	0.274
D6 1 <sup>st</sup>	ditch	9.800	Drift	0.148	2.349
D6 2 <sup>nd</sup>	ditch	10.04	Drift	0.779	9.701
R1	pond	0.355	Run-off	0.144	2.694
R1	stream	6.557	Run-off	0.122	8.792
R2	stream	8.602	Run-off	0.073	26.90
R3	stream	9.280	Run-off	0.196	2.964
R4	stream	6.583	Run-off	0.332	14.35

**Table 8.9-17: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to bulb vegetables (1 x 1590 g/ha) in post emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	9.959	Drift	0.449	6.502
D4	pond	0.343	Drift	0.174	1.717
D4	stream	7.641	Drift	0.018	0.288
D6 1 <sup>st</sup>	ditch	9.958	Drift	0.473	6.676
D6 2 <sup>nd</sup>	ditch	10.04	Drift	1.161	14.21
R1	pond	0.365	Run-off	0.192	3.758
R1	stream	6.557	Run-off	0.122	8.800
R2	stream	8.670	Run-off	0.070	27.84
R3	stream	9.212	Run-off	0.205	5.009
R4	stream	6.466	Run-off	0.349	10.13

**Table 8.9-18: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to bulb vegetables (1 x 1137 g/ha) in pre emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	7.109	Drift	0.296	4.379
D4	pond	0.245	Drift	0.143	1.462
D4	stream	5.430	Drift	0.012	0.197
D6 1 <sup>st</sup>	ditch	7.007	Drift	0.113	1.775
D6 2 <sup>nd</sup>	ditch	7.179	Drift	0.874	10.18
R1	pond	0.261	Run-off	0.137	2.737
R1	stream	4.688	Run-off	0.088	6.521
R2	stream	6.150	Run-off	0.052	19.99
R3	stream	6.635	Run-off	0.142	2.157
R4	stream	4.706	Run-off	0.235	10.41

**Table 8.9-19: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to bulb vegetables (1 x 1137 g/ha) in post emergence**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	7.121	Drift	0.321	4.653
D4	pond	0.245	Drift	0.124	1.233
D4	stream	5.463	Drift	0.013	0.206
D6 1 <sup>st</sup>	ditch	7.120	Drift	0.388	4.776
D6 2 <sup>nd</sup>	ditch	7.179	Drift	0.829	10.18
R1	pond	0.261	Run-off	0.137	2.680
R1	stream	4.688	Run-off	0.086	6.414
R2	stream	6.199	Run-off	0.050	20.18
R3	stream	6.587	Run-off	0.146	3.625
R4	stream	4.623	Run-off	0.247	7.289

**Table 8.9-2011: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to field beans (1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	8.307	Drift	0.920	12.66
D2	stream	7.354	Drift	0.060	0.931
D3	ditch	8.233	Drift	0.352	5.181

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D4	pond	0.332	Drift	0.161	1.627
D4	stream	6.589	Drift	0.015	0.238
D6 1 <sup>st</sup>	ditch	8.146	Drift	0.166	2.561
D6 2 <sup>nd</sup>	ditch	8.305	Drift	0.453	5.900
R1	pond	0.339	Run-off	0.136	2.745
R1	stream	5.684	Run-off	0.134	8.685
R2	stream	7.484	Run-off	0.083	26.92
R3	stream	8.008	Run-off	0.134	6.098
R4	stream	5.695	Run-off	0.341	9.924

**Table 8.9-21: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to field beans (1 x 1137 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	5.939	Drift	0.781	10.74
D2	stream	5.258	Drift	0.043	0.671
D3	ditch	5.886	Drift	0.271	3.969
D4	pond	0.237	Drift	0.138	1.417
D4	stream	4.711	Drift	0.010	0.171
D6 1 <sup>st</sup>	ditch	5.824	Drift	0.126	1.932
D6 2 <sup>nd</sup>	ditch	5.938	Drift	0.526	6.375
R1	pond	0.247	Run-off	0.130	2.852
R1	stream	4.064	Run-off	0.100	6.733
R2	stream	5.351	Run-off	0.059	19.65
R3	stream	5.726	Run-off	0.097	4.443
R4	stream	4.072	Run-off	0.251	7.321

**Table 8.9-22: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to carrots, parsley, parsnip and fennel (root vegetables 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	9.944	Drift	0.388	5.753
D4*	pond	0.343	Drift	0.132	1.311
D4*	stream	7.805	Drift	0.021	0.346

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D6	ditch	9.835	Drift	0.193	2.990
R1	pond	0.358	Run-off	0.190	2.576
R1	stream	6.561	Run-off	0.151	15.01
R2 1 <sup>st</sup>	stream	8.606	Run-off	0.073	27.23
R2 2 <sup>nd</sup>	stream	8.826	Run-off	0.101	69.25
R3	stream	9.281	Run-off	0.196	4.367
R4	stream	6.583	Run-off	0.337	14.35

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenario D4 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-23: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to carrots, parsley, parsnip and fennel (root vegetables 1 x 1137 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	7.109	Drift	0.296	4.379
D4*	pond	0.245	Drift	0.125	1.224
D4*	stream	5.581	Drift	0.015	0.248
D6	ditch	7.032	Drift	0.143	2.214
R1	pond	0.263	Run-off	0.175	2.605
R1	stream	4.691	Run-off	0.109	11.13
R2 1 <sup>st</sup>	stream	6.153	Run-off	0.052	20.44
R2 2 <sup>nd</sup>	stream	6.310	Run-off	0.071	50.68
R3	stream	6.636	Run-off	0.142	3.180
R4	stream	4.706	Run-off	0.241	10.47

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenario D4 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-24: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to lupine (legumes, 1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	6.118	Drift	0.238	3.544
D4	pond	0.247	Drift	0.119	1.214
D4	stream	4.902	Drift	0.011	0.177

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D5	pond	0.247	Drift	0.106	1.067
D5	stream	5.091	Drift	0.009	0.142
D6	ditch	6.124	Drift	0.265	3.801
R1	pond	0.255	Run-off	0.102	1.872
R1	stream	4.235	Run-off	0.080	3.507
R2	stream	5.630	Run-off	0.034	9.312
R3	stream	5.991	Run-off	0.154	63.81
R4	stream	4.230	Run-off	0.245	28.17

**Table 8.9-2514: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to winter oilseed rape use no. 14 (1 x 455 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	2.883	Drift	0.364	4.308
D2	stream	2.565	Drift	0.320	3.837
D3	ditch	2.878	Drift	0.210	2.610
D4	pond	0.098	Drift	0.030	0.302
D4	stream	2.461	Drift	0.031	0.498
D5	pond	0.098	Drift	0.028	0.281
D5	stream	2.656	Drift	0.043	0.682
R1	pond	0.099	Run-off	0.032	0.456
R1	stream	1.882	Run-off	0.023	0.664
R3	stream	2.646	Run-off	0.085	1.743

**Table 8.9-2615: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to winter oilseed rape use no. 15 (1 x 910 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	5.769	Drift	0.732	8.779
D2	stream	5.132	Drift	0.641	7.820
D3	ditch	5.719	Drift	0.314	4.368
D4	pond	0.196	Drift	0.069	0.682
D4	stream	4.925	Drift	0.064	1.018
D5	pond	0.196	Drift	0.058	0.566
D5	stream	5.314	Drift	0.087	1.365

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1	pond	0.197	Run-off	0.074	1.119
R1	stream	3.765	Run-off	0.053	2.614
R3	stream	5.265	Run-off	0.121	26.45

**Table 8.9-2716:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha) in pre emergence

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3 1 <sup>st</sup>	ditch	9.944	Drift	0.388	5.752
D3 2 <sup>nd</sup>	ditch	9.969	Drift	0.390	5.635
D4	pond	0.343	Drift	0.132	1.311
D4	stream	7.805	Drift	0.021	0.346
D6	ditch	10.04	Drift	0.466	6.119
R1 1 <sup>st</sup>	pond	0.415	Run-off	0.143	2.980
R1 2 <sup>nd</sup>	pond	0.598	Run-off	0.326	5.482
R1 1 <sup>st</sup>	stream	6.562	Run-off	0.135	30.35
R1 2 <sup>nd</sup>	stream	6.506	Run-off	0.134	9.660
R2 1 <sup>st</sup>	stream	8.606	Run-off	0.074	26.24
R2 2 <sup>nd</sup>	stream	8.826	Run-off	0.098	44.99
R3 1 <sup>st</sup>	stream	9.281	Run-off	0.197	6.615
R3 2 <sup>nd</sup>	stream	9.253	Run-off	0.199	6.746
R4 1 <sup>st</sup>	stream	6.461	Run-off	0.277	14.40
R4 2 <sup>nd</sup>	stream	6.521	Run-off	0.280	21.74

**Table 8.9-28:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to leek 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha) in post emergence

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3 1 <sup>st</sup>	ditch	9.959	Drift	0.445	6.461
D3 2 <sup>nd</sup>	ditch	9.969	Drift	0.458	6.596
D4	pond	0.343	Drift	0.174	1.705
D4	stream	7.805	Drift	0.021	0.347
D6	ditch	9.743	Drift	0.116	1.837

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1 1 <sup>st</sup>	pond	0.438	Run-off	0.209	4.205
R1 2 <sup>nd</sup>	pond	0.571	Run-off	0.363	6.918
R1 1 <sup>st</sup>	stream	6.562	Run-off	0.135	30.33
R1 2 <sup>nd</sup>	stream	6.584	Run-off	0.121	10.04
R2 1 <sup>st</sup>	stream	8.674	Run-off	0.070	25.90
R2 2 <sup>nd</sup>	stream	8.826	Run-off	0.083	39.66
R3 1 <sup>st</sup>	stream	9.220	Run-off	0.209	8.366
R3 2 <sup>nd</sup>	stream	9.253	Run-off	0.220	2.949
R4 1 <sup>st</sup>	stream	6.553	Run-off	0.302	8.907
R4 2 <sup>nd</sup>	stream	6.521	Run-off	0.281	6.537

**Table 8.9-2917:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to strawberry (fruiting vegetables 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	7.460	Drift	0.291	4.318
D4*	pond	0.257	Drift	0.099	0.987
D4*	stream	5.856	Drift	0.016	0.260
D6	ditch	7.407	Drift	0.175	2.672
R1 *	pond	0.308	Run-off	0.107	2.240
R1 *	stream	4.923	Run-off	0.100	23.13
R2	stream	6.518	Run-off	0.061	97.70
R3	stream	6.963	Run-off	0.165	2.730
R4	stream	4.925	Run-off	0.252	28.48

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for strawberry in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3, D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-30:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to strawberry (fruiting vegetables 1 x 1137 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	5.333	Drift	0.222	3.286
D4*	pond	0.184	Drift	0.093	0.921

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D4*	stream	4.186	Drift	0.011	0.186
D6	ditch	5.295	Drift	0.133	2.035
R1*	pond	0.244	Run-off	0.116	2.384
R1*	stream	3.519	Run-off	0.075	18.42
R2	stream	4.659	Run-off	0.043	70.45
R3	stream	4.978	Run-off	0.121	2.001
R4	stream	3.521	Run-off	0.179	20.79

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for strawberry in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3, D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-3148:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to raspberry (vines, early application, 1 x 1365 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	6.421	Drift	0.297	4.274
D4*	pond	0.221	Drift	0.131	1.212
D4*	stream	4.899	Drift	0.011	0.177
D6	ditch	6.477	Drift	1.154	12.66
R1	pond	0.221	Run-off	0.115	1.028
R1	stream	4.208	Run-off	0.032	0.517
R2	stream	5.578	Run-off	0.021	0.341
R3	stream	5.926	Run-off	0.072	1.130
R4	stream	4.195	Run-off	0.030	0.480

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application.

**Table 8.9-3219:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to currants and grapevines (vines, early application, 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	7.468	Drift	0.320	4.714
D4*	pond	0.257	Drift	0.124	1.263
D4*	stream	5.697	Drift	0.013	0.206
D6	ditch	7.533	Drift	0.954	11.46



Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1	pond	0.257	Run-off	0.102	1.014
R1	stream	4.893	Run-off	0.037	0.599
R2	stream	6.486	Run-off	0.024	0.395
R3	stream	6.891	Run-off	0.082	1.299
R4	stream	4.878	Run-off	0.034	0.556

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application.

**Table 8.9-3320: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to potato (1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	8.238	Drift	0.325	4.756
D4	pond	0.332	Drift	0.127	1.271
D4	stream	6.799	Drift	0.019	0.312
D6 1 <sup>st</sup>	ditch	8.146	Drift	0.166	2.566
D6 2 <sup>nd</sup>	ditch	8.280	Drift	0.376	5.079
R1	pond	0.345	Run-off	0.140	2.777
R1	stream	5.691	Run-off	0.134	7.480
R2	stream	7.537	Run-off	0.074	130.5
R3	stream	8.012	Run-off	0.171	8.458

**Table 8.9-34: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to potato (1 x 1137 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	5.890	Drift	0.265	3.849
D4	pond	0.237	Drift	0.120	1.180
D4	stream	4.861	Drift	0.014	0.224
D6 1 <sup>st</sup>	ditch	5.824	Drift	0.125	1.936
D6 2 <sup>nd</sup>	ditch	5.920	Drift	0.402	5.172
R1	pond	0.254	Run-off	0.133	2.763
R1	stream	4.069	Run-off	0.095	5.462
R2	stream	5.389	Run-off	0.053	94.02
R3	stream	5.729	Run-off	0.124	6.135

**Table 8.9-3521:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to ornamentals (vines, early application, 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	9.955	Drift	0.427	6.279
D4*	pond	0.343	Drift	0.166	1.678
D4*	stream	7.595	Drift	0.017	0.274
D6	ditch	10.04	Drift	1.272	15.25
R1	pond	0.343	Run-off	0.136	1.347
R1	stream	6.522	Run-off	0.049	0.799
R2	stream	8.646	Run-off	0.032	0.527
R3	stream	9.186	Run-off	0.109	1.731
R4	stream	6.502	Run-off	0.046	0.741

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application.

**Table 8.9-3622:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of SHARPEN 40 SC to clover alfalfa (grass, 1 x 1000 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	6.294	Drift	0.706	8.934
D1	stream	5.077	Drift	0.020	0.320
D2	ditch	6.337	Drift	0.988	12.29
D2	stream	5.599	Drift	0.789	10.75
D3	ditch	6.266	Drift	0.301	4.380
D4	pond	0.216	Drift	0.105	1.066
D4	stream	4.817	Drift	0.011	0.185
D5	pond	0.216	Drift	0.093	0.930
D5	stream	5.164	Drift	0.012	0.190
R1*	pond	0.216	Run-off	0.086	0.016
R1*	stream	4.121	Run-off	0.055	3.915
R2	stream	5.454	Run-off	0.023	0.357
R3	stream	5.828	Run-off	0.120	1.453

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario R1 is not available for vines in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenario R1 considering all input data as for winter cereals.

**Table 8.9-3723: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for Pendimethalin following single application of PENSHUI to cucurbits (fruiting vegetables 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	9.944	Drift	0.388	5.752
D4*	pond	0.343	Drift	0.132	1.311
D4*	stream	7.805	Drift	0.021	0.346
D6	ditch	9.873	Drift	0.233	3.560
R1*	pond	0.415	Run-off	0.143	2.980
R1*	stream	6.562	Run-off	0.135	30.35
R2	stream	8.689	Run-off	0.081	129.4
R3	stream	9.282	Run-off	0.221	3.613
R4	stream	6.565	Run-off	0.340	37.29

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 is not available for fruiting vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenario D3, D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

#### FOCUS Step 4

The dry deposition has been taken into account in the mitigation measures calculations, it has been calculated using the EVA3 rev. 2h of 20.09.2017 Excel™ spreadsheet by UBA using a 25% of interception from weeds as worst case for preemergence applications and the corresponding crop interception for postemergence applications for field crops. The files will be sent separately.

**FOCUS Step 4 for application in trees and vines has been calculated using the drift values for cereals and the mass loading according to FOCUS Drift Calculator for every kind of scenario and the nozzles reduction was done multiply the mass loading by 0.5, 0.25 and 0.1 for 50, 75 and 90% reduction respectively.**

**Note: New mitigation measures have been calculated according to the comments made by the ecotox expert. Some of them were already sent in the first dossier submission and the actual new calculations will be sent in this submission. Furthermore, VFSSMOD calculations have been carried out as refinement for R scenarios.**

**Table 8.9-3824:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D1 ditch	2.729	1.455	1.003	0.763	-	-	-	-
50 %		1.418	0.805	0.565	0.431	-	-	-	-
75 %		0.839	0.514	0.372	0.280	-	-	-	-
90 %		0.534	0.359	0.267	0.202	-	-	-	-
None	D1 stream	3.222	1.709	1.168	0.888	-	-	-	-
50 %		1.613	0.856	0.585	0.445	-	-	-	-
75 %		0.809	0.441	0.313	0.239	-	-	-	-
90 %		0.440	0.304	0.222	0.169	-	-	-	-
None	D2 ditch	2.731	1.462	1.008	0.768	-	-	-	-
50 %		1.425	0.814	0.572	0.435	-	-	-	-
75 %		0.849	0.519	0.372	0.315	-	-	-	-
90 %		0.544	0.365	0.315	0.315	-	-	-	-
None	D2 stream	3.281	1.741	1.189	0.904	-	-	-	-
50 %		1.642	0.872	0.596	0.453	-	-	-	-
75 %		0.824	0.438	0.299	0.228	-	-	-	-
90 %		0.338	0.207	0.204	-	-	-	-	-
None	D3 ditch	2.690	1.426	0.974	0.741	-	-	-	-
50 %		1.344	0.738	0.513	0.396	-	-	-	-
75 %		0.740	0.437	0.311	0.237	-	-	-	-
90 %		0.441	0.291	0.213	0.162	-	-	-	-
None	D4 Pond	0.324	0.235	0.186	↓	↓	↓	↓	↓
50 %		0.192	0.141	↓	↓	↓	↓	↓	↓
75 %		↓	↓	↓	↓	↓	↓	↓	↓
90 %		↓	↓	↓	↓	↓	↓	↓	↓
None	D4 stream	3.150	1.672	1.142	0.869	-	-	-	-
50 %		1.578	0.857	0.591	0.450	-	-	-	-
75 %		0.838	0.469	0.326	0.258	-	-	-	-
90 %		0.421	0.258	0.258	0.258	-	-	-	-
None	D5 pond	0.332	0.241	0.191	↓	↓	↓	↓	↓
50 %		0.198	0.145	↓	↓	↓	↓	↓	↓
75 %		↓	↓	↓	↓	↓	↓	↓	↓

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		↓	↓	↓	↓	↓	↓	↓	↓
None	D5 stream	3.397	1.803	1.231	0.936	-	-	-	-
50 %		1.701	0.915	0.631	0.480	-	-	-	-
75 %		0.894	0.506	0.355	0.271	-	-	-	-
90 %		0.463	0.294	0.210	0.160	-	-	-	-
None	D6 ditch	2.720	1.467	1.011	0.770	-	-	-	-
50 %		1.429	0.824	0.579	0.445	-	-	-	-
75 %		0.860	0.526	0.445	0.445	-	-	-	-
90 %		0.557	0.445	0.455	-	-	-	-	-
None	R1 pond	↓	↓	↓	↓	0.340	0.247	0.195	↓
50 %		↓	↓	↓	↓	0.203	0.148	↓	↓
75 %		↓	↓	↓	↓	↓	↓	↓	↓
90 %		↓	↓	↓	↓	↓	↓	↓	↓
None	R1 stream	-	-	-	-	2.464	1.328	0.9123	0.694
50 %		-	-	-	-	1.279	0.8113	0.631	0.425
75 %		-	-	-	-	1.165	0.811	0.622	0.425
90 %		-	-	-	-	1.165	-	0.622	-
None	R3 stream	-	-	-	-	3.393	1.828	1.255	0.955
50 %		-	-	-	-	1.758	0.961	0.663	0.505
75 %		-	-	-	-	1.124	0.784	0.602	0.417
90 %		-	-	-	-	1.124	0.784	0.602	0.411
None	R4 stream	-	-	-	-	2.462	1.332	0.916	0.698
50 %		-	-	-	-	1.424	0.990	0.758	0.517
75 %		-	-	-	-	1.424	0.990	0.758	0.517
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-39: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.213
90 %		0.215	-
75 %	R3 stream	-	0.392
90 %		0.620	0.392
75 %	R4 stream	-	0.213
90 %		0.218	-

**Table 8.9-40: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D1 ditch	2.782	1.532	1.063	0.809	-	-	-	-
50 %		1.530	0.886	0.629	0.478	-	-	-	-
75 %		0.945	0.591	0.428	0.325	-	-	-	-
90 %		0.613	0.416	0.309	0.234	-	-	-	-
None	D1 stream	3.222	1.709	1.168	0.888	-	-	-	-
50 %		1.613	0.856	0.585	0.445	-	-	-	-
75 %		0.834	0.495	0.353	0.269	-	-	-	-
90 %		0.502	0.346	0.256	0.195	-	-	-	-
None	D2 ditch	2.713	1.470	1.013	0.771	-	-	-	-
50 %		1.444	0.836	0.588	0.447	-	-	-	-
75 %		0.872	0.546	0.396	0.300	-	-	-	-
90 %		0.569	0.387	0.290	0.290	-	-	-	-
None	D2 stream	3.036	1.626	1.114	0.848	-	-	-	-
50 %		1.552	0.839	0.577	0.439	-	-	-	-
75 %		0.810	0.446	0.309	0.235	-	-	-	-
90 %		0.373	0.219	0.188	0.188	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.688	1.425	0.973	0.740	-	-	-	-
50 %		1.343	0.746	0.519	0.395	-	-	-	-
75 %		0.748	0.444	0.316	0.241	-	-	-	-
90 %		0.439	0.294	0.215	0.164	-	-	-	-
None	D4 Pond	0.336	0.244	0.193	-	-	-	-	-
50 %		0.200	0.146	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	3.150	1.675	1.163	0.873	-	-	-	-
50 %		1.600	0.874	0.603	0.459	-	-	-	-
75 %		0.854	0.478	0.335	0.255	-	-	-	-
90 %		0.426	0.265	0.248	0.248	-	-	-	-
None	D5 pond	0.342	0.249	0.196	-	-	-	-	-
50 %		0.204	0.149	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	3.397	1.803	1.231	0.937	-	-	-	-
50 %		1.710	0.932	0.642	0.489	-	-	-	-
75 %		0.910	0.518	0.363	0.277	-	-	-	-
90 %		0.469	0.298	0.216	0.165	-	-	-	-
None	D6 ditch	2.756	1.506	1.045	0.795	-	-	-	-
50 %		1.504	0.870	0.612	0.465	-	-	-	-
75 %		0.920	0.576	0.449	0.449	-	-	-	-
90 %		0.598	0.449	0.449	0.449	-	-	-	-
None	R1 pond	-	-	-	-	0.348	0.253	0.200	-
50 %		-	-	-	-	0.214	0.152	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	2.470	1.332	0.915	0.696
50 %		-	-	-	-	1.282	0.813	0.624	0.426
75 %		-	-	-	-	1.168	0.813	0.624	0.426
90 %		-	-	-	-	1.168	-	-	-
None	R3 stream	-	-	-	-	3.430	1.852	1.273	0.969
50 %		-	-	-	-	1.786	0.980	0.677	0.516

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
75 %	R4 stream	-	-	-	-	1.025	0.713	0.546	0.372
90 %		-	-	-	-	1.025	0.713	0.546	0.372
None		-	-	-	-	2.452	1.323	0.909	0.692
50 %		-	-	-	-	1.514	1.052	0.806	0.549
75 %		-	-	-	-	1.514	1.052	0.806	0.549
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-41:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.214
90 %		0.216	-
75 %	R3 stream	-	0.296
90 %		0.306	0.168
75 %	R4 stream	-	0.206
90 %		0.201	-



**Table 8.9-42: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1137 g/ha) in pre emergence according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D1 ditch	1.966	1.070	0.741	0.562	-	-	-	-
50 %		1.064	0.615	0.433	0.328	-	-	-	-
75 %		0.645	0.402	0.292	0.221	-	-	-	-
90 %		0.420	0.284	0.210	-	-	-	-	-
None	D1 stream	2.303	1.222	0.835	0.635	-	-	-	-
50 %		1.153	0.612	0.418	0.318	-	-	-	-
75 %		0.580	0.342	0.244	0.185	-	-	-	-
90 %		0.346	0.237	0.176	-	-	-	-	-
None	D2 ditch	1.973	1.074	0.746	0.566	-	-	-	-
50 %		1.071	0.619	0.436	0.330	-	-	-	-
75 %		0.652	0.407	0.295	0.223	-	-	-	-
90 %		0.424	0.286	0.213	-	-	-	-	-
None	D2 stream	2.345	1.244	0.850	0.646	-	-	-	-
50 %		1.174	0.623	0.426	0.324	-	-	-	-
75 %		0.589	0.313	0.217	0.163	-	-	-	-
90 %		0.238	0.131	-	-	-	-	-	-
None	D3 ditch	1.923	1.019	0.696	0.530	-	-	-	-
50 %		0.964	0.537	0.373	0.284	-	-	-	-
75 %		0.540	0.323	0.231	0.175	-	-	-	-
90 %		0.323	0.215	0.159	-	-	-	-	-
None	D4 Pond	0.240	0.175	-	-	-	-	-	-
50 %		0.143	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.252	1.197	0.820	0.623	-	-	-	-
50 %		1.144	0.625	0.431	0.328	-	-	-	-
75 %		0.611	0.342	0.239	0.182	-	-	-	-
90 %		0.305	0.189	0.178	-	-	-	-	-
None	D5 pond	0.245	0.178	-	-	-	-	-	-
50 %		0.146	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	-	-	-	-
None	D5 stream	2.429	1.288	0.880	0.669	-	-	-	-
50 %		1.223	0.666	0.459	0.349	-	-	-	-
75 %		0.651	0.370	0.260	0.197	-	-	-	-
90 %		0.336	0.213	0.155	-	-	-	-	-
None	D6 ditch	1.971	1.077	0.749	0.568	-	-	-	-
50 %		1.076	0.621	0.438	0.332	-	-	-	-
75 %		0.659	0.411	0.305	0.305	-	-	-	-
90 %		0.429	0.305	0.305	0.305	-	-	-	-
None	R1 pond	-	-	-	-	0.249	0.180	-	-
50 %		-	-	-	-	0.151	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.766	0.952	0.654	0.497
50 %		-	-	-	-	0.917	0.576	0.441	0.301
75 %		-	-	-	-	0.826	0.576	0.441	0.301
90 %		-	-	-	-	0.826	-	-	-
None	R3 stream	-	-	-	-	2.438	1.313	0.902	0.685
50 %		-	-	-	-	1.263	0.691	0.478	0.363
75 %		-	-	-	-	0.794	0.554	0.425	0.290
90 %		-	-	-	-	0.794	0.554	0.425	0.290
None	R4 stream	-	-	-	-	1.773	0.959	0.660	0.502
50 %		-	-	-	-	1.012	0.703	0.539	0.367
75 %		-	-	-	-	1.012	0.703	0.539	0.367
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-43: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1137 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	0.286	0.152
90%		0.154	-
75 %	R3 stream	0.438	0.277
90%		0.438	-
75 %	R4 stream	0.288	0.153
90%		0.158	-

**Table 8.9-44: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1137 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D1 ditch	1.989	1.095	0.761	0.577	-	-	-	-
50 %		1.095	0.632	0.449	0.340	-	-	-	-
75 %		0.677	0.422	0.305	0.231	-	-	-	-
90 %		0.440	0.296	0.220	0.166	-	-	-	-
None	D1 stream	2.303	1.222	0.832	0.635	-	-	-	-
50 %		1.153	0.612	0.418	0.318	-	-	-	-
75 %		0.597	0.354	0.253	0.191	-	-	-	-
90 %		0.360	0.247	0.184	-	-	-	-	-
None	D2 ditch	1.940	1.051	0.724	0.551	-	-	-	-
50 %		1.034	0.597	0.421	0.319	-	-	-	-
75 %		0.624	0.390	0.283	0.214	-	-	-	-
90 %		0.408	0.276	0.205	-	-	-	-	-
None	D2 stream	2.171	1.162	0.796	0.606	-	-	-	-
50 %		1.110	0.600	0.412	0.313	-	-	-	-
75 %		0.579	0.319	0.221	0.168	-	-	-	-
90 %		0.267	0.156	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.922	1.019	0.696	0.529	-	-	-	-
50 %		0.960	0.533	0.371	0.282	-	-	-	-
75 %		0.535	0.317	0.227	0.171	-	-	-	-
90 %		0.315	0.210	-	-	-	-	-	-
None	D4 Pond	0.240	0.175	-	-	-	-	-	-
50 %		0.143	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.252	1.197	0.820	0.623	-	-	-	-
50 %		1.144	0.625	0.431	0.328	-	-	-	-
75 %		0.611	0.342	0.239	0.182	-	-	-	-
90 %		0.305	0.189	0.172	-	-	-	-	-
None	D5 pond	0.245	1.178	-	-	-	-	-	-
50 %		0.146	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	2.429	1.288	0.880	0.669	-	-	-	-
50 %		1.223	0.666	0.459	0.349	-	-	-	-
75 %		0.651	0.370	0.260	0.197	-	-	-	-
90 %		0.336	0.213	0.155	-	-	-	-	-
None	D6 ditch	1.971	1.077	0.749	0.568	-	-	-	-
50 %		1.076	0.621	0.438	0.332	-	-	-	-
75 %		0.659	0.411	0.306	0.306	-	-	-	-
90 %		0.429	0.306	0.306	-	-	-	-	-
None	R1 pond	-	-	-	-	0.249	0.180	-	-
50 %		-	-	-	-	0.151	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.766	0.952	0.654	0.497
50 %		-	-	-	-	0.917	0.574	0.440	0.300
75 %		-	-	-	-	0.824	0.574	0.440	0.300
90 %		-	-	-	-	0.824	-	-	-
None	R3 stream	-	-	-	-	2.453	1.324	0.910	0.692
50 %		-	-	-	-	1.277	0.701	0.484	0.368

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
75 %	R4 stream	-	-	-	-	0.721	0.501	0.384	0.262
90 %		-	-	-	-	0.721	0.501	0.384	0.262
None		-	-	-	-	1.753	0.946	0.650	0.494
50 %		-	-	-	-	1.067	0.742	0.568	0.387
75 %		-	-	-	-	1.067	0.742	0.568	0.387
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-45:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter cereals (1 x 1137 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.152
90 %		0.154	-
75 %	R3 stream	-	0.210
90 %		0.219	-
75 %	R4 stream	-	0.147
90 %		0.143	-

**Table 8.9-4625:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to maize (1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.696	1.429	0.976	0.742	-	-	-	-
50 %		1.347	0.748	0.520	0.396	-	-	-	-
75 %		0.750	0.455	0.325	0.248	-	-	-	-
90 %		0.456	0.305	0.223	0.170	-	-	-	-
None	D4 pond	0.337	0.245	0.194	↓	↓	↓	↓	↓
50 %		0.201	0.147	↓	↓	↓	↓	↓	↓
75 %		↓	↓	↓	↓	↓	↓	↓	↓
90 %		↓	↓	↓	↓	↓	↓	↓	↓
None	D4 stream	2.914	1.558	1.067	0.812	-	-	-	-
50 %		1.485	0.801	0.550	0.418	-	-	-	-
75 %		0.771	0.422	0.291	0.222	-	-	-	-
90 %		0.342	0.195	0.187	-	-	-	-	-
None	D5 pond	0.331	0.240	0.190	↓	↓	↓	↓	↓
50 %		0.197	0.144	↓	↓	↓	↓	↓	↓
75 %		↓	↓	↓	↓	↓	↓	↓	↓
90 %		↓	↓	↓	↓	↓	↓	↓	↓
None	D5 stream	3.152	1.686	1.155	0.879	-	-	-	-
50 %		1.607	0.867	0.595	0.453	-	-	-	-
75 %		0.835	0.458	0.316	0.241	-	-	-	-
90 %		0.372	0.212	0.148	0.113	-	-	-	-
None	D6 ditch	2.697	1.429	0.976	0.743	-	-	-	-
50 %		1.348	0.733	0.510	0.449	-	-	-	-
75 %		0.736	0.449	0.449	0.449	-	-	-	-
90 %		0.449	0.449	0.449	-	-	-	-	-
None	R1 pond	↓	↓	↓	↓	0.340	0.246	0.195	↓
50 %		↓	↓	↓	↓	0.205	0.150	↓	↓
75 %		↓	↓	↓	↓	↓	↓	↓	↓
90 %		↓	↓	↓	↓	↓	↓	↓	↓
None	R1 stream	-	-	-	-	2.460	1.325	0.911	0.693
50 %		-	-	-	-	1.281	0.754	0.578	0.394
75 %		-	-	-	-	1.083	0.754	0.578	0.394

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	1.083	-	-	-
None	R2 stream	-	-	-	-	3.277	1.759	1.206	0.918
50 %		-	-	-	-	1.684	0.914	0.629	0.479
75 %		-	-	-	-	0.888	0.492	0.341	0.260
90 %		-	-	-	-	0.410	0.239	0.168	0.129
None	R3 stream	-	-	-	-	3.402	1.807	1.235	0.939
50 %		-	-	-	-	1.724	0.943	0.653	0.497
75 %		-	-	-	-	0.935	0.612	0.469	0.320
90 %		-	-	-	-	0.882	0.612	0.469	0.320
None	R4 stream	-	-	-	-	2.452	1.321	0.907	0.690
50 %		-	-	-	-	1.610	1.122	0.861	0.588
75 %		-	-	-	-	1.610	1.122	0.861	0.588
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-47: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to Maize (1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.216
90 %		0.215	-
75 %	R2 stream	-	0.260
90 %		0.239	0.129
75 %	R3 stream	-	0.285
90 %		0.305	0.168
75 %	R4 stream	-	0.212
90 %		0.275	-

**Table 8.9-48: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to maize (1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.699	1.430	0.977	0.743	-	-	-	-
50 %		1.350	0.752	0.523	0.398	-	-	-	-
75 %		0.757	0.463	0.331	0.252	-	-	-	-
90 %		0.464	0.310	0.227	0.173	-	-	-	-
None	D4 pond	0.338	0.246	0.194	-	-	-	-	-
50 %		0.201	0.147	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	3.036	1.625	1.114	0.847	-	-	-	-
50 %		1.551	0.838	0.576	0.438	-	-	-	-
75 %		0.809	0.445	0.308	0.235	-	-	-	-
90 %		0.372	0.218	0.182	0.182	-	-	-	-
None	D5 pond	0.333	0.242	0.192	-	-	-	-	-
50 %		0.198	0.145	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	3.004	1.603	1.097	0.835	-	-	-	-
50 %		1.524	0.818	0.561	0.427	-	-	-	-
75 %		0.784	0.427	0.294	0.224	-	-	-	-
90 %		0.341	0.191	0.133	-	-	-	-	-
None	D6 ditch	2.699	1.430	0.977	0.743	-	-	-	-
50 %		1.365	0.762	0.529	0.456	-	-	-	-
75 %		0.773	0.473	0.456	0.456	-	-	-	-
90 %		0.473	0.456	0.456	-	-	-	-	-
None	R1 pond	-	-	-	-	0.345	0.251	0.198	-
50 %		-	-	-	-	0.209	0.152	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	2.432	1.311	0.900	0.685
50 %		-	-	-	-	1.262	0.801	0.614	0.419
75 %		-	-	-	-	1.151	0.801	0.614	0.419



PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	1.151	-	-	-
None	R2 stream	-	-	-	-	3.313	1.780	1.221	0.929
50 %		-	-	-	-	1.706	0.928	0.639	0.487
75 %		-	-	-	-	0.903	0.502	0.348	0.265
90 %		-	-	-	-	0.424	0.251	0.177	0.136
None	R3 stream	-	-	-	-	3.394	1.819	1.248	0.950
50 %		-	-	-	-	1.751	0.965	0.667	0.508
75 %		-	-	-	-	0.956	0.665	0.510	0.348
90 %		-	-	-	-	0.956	0.665	0.510	0.348
None	R4 stream	-	-	-	-	2.464	1.328	0.914	0.695
50 %		-	-	-	-	1.628	1.134	0.870	0.594
75 %		-	-	-	-	1.628	1.134	0.870	0.594
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-49: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to Maize (1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.203
90 %		0.197	-
75 %	R2 stream	-	0.265
90 %		0.251	0.136
75 %	R3 stream	-	0.289
90 %		0.306	0.168
75 %	R4 stream	-	0.214
90 %		0.273	-

**Table 8.9-50: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to maize (1 x 1137 g/ha) in pre emergence according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.928	1.022	0.698	0.531	-	-	-	-
50 %		0.979	0.546	0.379	0.288	-	-	-	-
75 %		0.557	0.340	0.244	0.184	-	-	-	-
90 %		0.341	0.227	0.168	-	-	-	-	-
None	D4 pond	0.246	0.179	-	-	-	-	-	-
50 %		0.147	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.084	1.114	0.763	0.580	-	-	-	-
50 %		1.062	0.572	0.393	0.299	-	-	-	-
75 %		0.551	0.302	0.208	0.158	-	-	-	-
90 %		0.245	0.139	-	-	-	-	-	-
None	D5 pond	0.244	0.177	-	-	-	-	-	-
50 %		0.145	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	2.254	1.205	0.826	0.628	-	-	-	-
50 %		1.149	0.620	0.426	0.324	-	-	-	-
75 %		0.597	0.327	0.226	0.172	-	-	-	-
90 %		0.266	0.152	-	-	-	-	-	-
None	D6 ditch	1.928	1.022	0.698	0.531	-	-	-	-
50 %		0.973	0.543	0.377	0.310	-	-	-	-
75 %		0.554	0.338	0.310	0.310	-	-	-	-
90 %		0.340	0.310	0.310	-	-	-	-	-
None	R1 pond	-	-	-	-	0.254	0.184	-	-
50 %		-	-	-	-	0.156	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.765	0.953	0.656	0.498
50 %		-	-	-	-	0.923	0.533	0.409	0.279
75 %		-	-	-	-	0.766	0.533	0.409	0.279

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	0.766	-	-	-
None	R2 stream	-	-	-	-	2.344	1.258	0.863	0.656
50 %		-	-	-	-	1.205	0.654	0.451	0.342
75 %		-	-	-	-	0.636	0.353	0.245	0.189
90 %		-	-	-	-	0.294	0.172	0.121	-
None	R3 stream	-	-	-	-	2.433	1.305	0.896	0.681
50 %		-	-	-	-	1.255	0.690	0.478	0.363
75 %		-	-	-	-	0.685	0.435	0.333	0.227
90 %		-	-	-	-	0.625	0.435	0.333	-
None	R4 stream	-	-	-	-	1.762	0.949	0.653	0.496
50 %		-	-	-	-	1.137	0.792	0.608	0.415
75 %		-	-	-	-	1.137	0.792	0.608	0.415
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-51: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to Maize (1 x 1137 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.153
90 %		0.155	-
75 %	R2 stream	-	0.186
90 %		0.172	-
75 %	R3 stream	-	0.208
90 %		0.225	-
75 %	R4 stream	-	0.152
90 %		0.196	-

**Table 8.9-52: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to maize (1 x 1137 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.929	1.023	0.699	0.531	-	-	-	-
50 %		0.966	0.538	0.374	0.284	-	-	-	-
75 %		0.542	0.331	0.238	0.179	-	-	-	-
90 %		0.332	0.221	0.163	-	-	-	-	-
None	D4 pond	0.242	0.176	-	-	-	-	-	-
50 %		0.144	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.171	1.162	0.796	0.605	-	-	-	-
50 %		1.109	0.599	0.412	0.313	-	-	-	-
75 %		0.579	0.318	0.220	0.167	-	-	-	-
90 %		0.266	0.156	-	-	-	-	-	-
None	D5 pond	0.238	0.173	-	-	-	-	-	-
50 %		0.142	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	2.148	1.146	0.784	0.596	-	-	-	-
50 %		1.090	0.585	0.401	0.305	-	-	-	-
75 %		0.561	0.305	0.210	0.160	-	-	-	-
90 %		0.244	0.137	-	-	-	-	-	-
None	D6 ditch	1.929	1.023	0.699	0.531	-	-	-	-
50 %		0.976	0.544	0.378	0.314	-	-	-	-
75 %		0.554	0.338	0.314	0.314	-	-	-	-
90 %		0.339	0.314	0.314	-	-	-	-	-
None	R1 pond	-	-	-	-	0.247	0.179	-	-
50 %		-	-	-	-	0.150	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.739	0.937	0.644	0.489
50 %		-	-	-	-	0.903	0.565	0.433	0.295
75 %		-	-	-	-	0.812	0.565	0.433	0.295

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	0.812	-	-	-
None	R2 stream	-	-	-	-	2.369	1.272	0.873	0.664
50 %		-	-	-	-	1.220	0.663	0.457	0.347
75 %		-	-	-	-	0.646	0.359	0.249	0.189
90 %		-	-	-	-	0.304	0.179	0.127	-
None	R3 stream	-	-	-	-	2.427	1.300	0.892	0.678
50 %		-	-	-	-	1.252	0.690	0.477	0.363
75 %		-	-	-	-	0.682	0.468	0.359	0.245
90 %		-	-	-	-	0.674	0.468	0.359	0.245
None	R4 stream	-	-	-	-	1.762	0.949	0.653	0.496
50 %		-	-	-	-	1.147	0.800	0.614	0.419
75 %		-	-	-	-	1.147	0.800	0.614	0.419
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-53: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to Maize (1 x 1137 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.145
90 %		0.140	-
75 %	R2 stream	-	0.189
90 %		0.179	-
75 %	R3 stream	-	0.206
90 %		0.219	-
75 %	R4 stream	-	0.152
90 %		0.194	-

**Table 8.9-5426:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to pome/stone fruits (Early application 1 x 1590 g/ha, between rows) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.023	1.073	0.782	0.557	-	-	-	-
50 %		1.011	0.561	0.412	0.296	-	-	-	-
75 %		0.563	0.343	0.255	0.186	-	-	-	-
90 %		0.343	0.2298	0.173	-	-	-	-	-
None	D4 Pond	0.253	0.184	-	-	-	-	-	-
50 %		0.150	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	1.768	0.945	0.690	0.492	-	-	-	-
50 %		0.901	0.486	0.355	0.254	-	-	-	-
75 %		0.467	0.256	0.190	0.134	-	-	-	-
90 %		0.208	0.118	-	-	-	-	-	-
None	D5 Pond	0.248	0.180	-	-	-	-	-	-
50 %		0.148	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	1.861	0.994	0.725	0.517	-	-	-	-
50 %		0.946	0.508	0.372	0.265	-	-	-	-
75 %		0.488	0.266	0.195	0.139	-	-	-	-
90 %		0.214	0.121	-	-	-	-	-	-
None	R1 Pond	-	-	-	-	0.249	0.181	-	-
50 %		-	-	-	-	0.148	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.548	0.837	0.612	0.438
50 %		-	-	-	-	0.810	0.446	0.327	0.235
75 %		-	-	-	-	0.445	0.257	0.190	0.137
90 %		-	-	-	-	0.232	0.143	-	-
None	R2 stream	-	-	-	-	2.040	1.097	0.801	0.572
50 %		-	-	-	-	1.052	0.573	0.419	0.300

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
75 %	R3 stream	-	-	-	-	0.558	0.311	0.228	0.164
90 %		-	-	-	-	0.262	0.154	-	-
None		-	-	-	-	2.132	1.152	0.843	0.602
50 %		-	-	-	-	1.113	0.613	0.450	0.324
75 %	R4 stream	-	-	-	-	0.615	0.356	0.263	0.190
90 %		-	-	-	-	0.324	0.204	0.153	-
None		-	-	-	-	1.548	0.837	0.613	0.438
50 %		-	-	-	-	0.810	0.446	0.328	0.236
75 %	R4 stream	-	-	-	-	0.446	0.257	0.190	0.137
90 %		-	-	-	-	0.232	0.144	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-55:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to pome/stone fruits (Early application 1 x 1590 g/ha, between rows) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.137
90 %		0.143	-
75 %	R2 stream	-	0.164
90 %		0.154	-
75 %	R3 stream	-	0.190
90 %		0.204	-
75 %	R4 stream	-	0.137
90 %		0.144	-

**Table 8.9-5627:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to sunflower (1 x 1183 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	2.001	1.061	0.725	0.551	-	-	-	-
50 %		1.000	0.549	0.381	0.290	-	-	-	-
75 %		0.550	0.325	0.232	0.176	-	-	-	-
90 %		0.324	0.215	0.159	-	-	-	-	-
None	D4 Pond***	0.241	0.175	-	-	-	-	-	-
50 %		0.142	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.343	1.243	0.850	0.646	-	-	-	-
50 %		1.174	0.638	0.440	0.335	-	-	-	-
75 %		0.623	0.349	0.243	0.186	-	-	-	-
90 %		0.309	0.191	0.186	-	-	-	-	-
None	D5 pond	0.246	0.179	-	-	-	-	-	-
50 %		0.147	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D5 stream	2.382	1.287	0.874	0.665	-	-	-	-
50 %		1.216	0.657	0.451	0.344	-	-	-	-
75 %		0.634	0.348	0.241	0.183	-	-	-	-
90 %		0.284	0.163	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.253	0.183	-	-
50 %		-	-	-	-	0.153	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.830	1.002	0.677	0.515
50 %		-	-	-	-	0.950	0.553	0.424	0.289
75 %		-	-	-	-	0.795	0.553	0.424	0.289
90 %		-	-	-	-	0.795	-	-	-
None	R3 stream	-	-	-	-	2.527	1.362	0.920	0.700
50 %		-	-	-	-	1.290	0.709	0.489	0.372
75 %		-	-	-	-	0.752	0.524	0.402	0.275



PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	0.752	0.524	-	0.275
None	R4 stream	-	-	-	-	1.824	1.003	0.676	0.515
50 %		-	-	-	-	1.106	0.771	0.591	0.404
75 %		-	-	-	-	1.106	0.771	0.591	0.404
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that drainage scenarios D3, D4 are not available for sunflower in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenarios D3, D4 considering all input data as for winter cereals.

**Table 8.9-57: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to sunflower (1 x 1183 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4endimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.484
90 %		0.484	0.484
75 %	R3 stream	-	0.217
90 %		0.228	-
75 %	R4 stream	-	0.160
90 %		0.200	-

**Table 8.9-5828:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to soybeans (1 x 1183 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	2.004	1.062	0.726	0.560	-	-	-	-
50 %		1.001	0.553	0.389	0.296	-	-	-	-
75 %		0.554	0.336	0.242	0.184	-	-	-	-
90 %		0.338	0.225	0.167	-	-	-	-	-
None	D4 pond***	0.254	0.185	-	-	-	-	-	-
50 %		0.152	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.097	1.120	0.767	0.591	-	-	-	-
50 %		1.065	0.573	0.399	0.303	-	-	-	-
75 %		0.549	0.304	0.209	0.205	-	-	-	-
90 %		0.244	0.205	-	-	-	-	-	-
None	R1 pond***	-	-	-	-	0.255	0.185	-	-
50 %		-	-	-	-	0.154	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream***	-	-	-	-	1.830	0.986	0.678	0.523
50 %		-	-	-	-	0.954	0.527	0.376	0.281
75 %		-	-	-	-	0.697	0.490	0.376	0.256
90 %		-	-	-	-	0.697	0.490	0.376	0.256
None	R3 stream	-	-	-	-	2.531	1.344	0.919	0.709
50 %		-	-	-	-	1.282	0.701	0.492	0.375
75 %		-	-	-	-	0.720	0.507	0.389	0.265
90 %		-	-	-	-	0.720	0.507	0.389	0.265
None	R4 stream	-	-	-	-	1.825	0.985	0.676	0.522
50 %		-	-	-	-	1.247	0.869	0.676	0.462
75 %		-	-	-	-	1.247	0.869	0.676	0.462
90 %		-	-	-	-	1.247	0.869	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4, R1 are not available for soybeans in programs used for modelling, the surrogate crop was proposed: legumes. Presented calculation was done for legumes, for scenarios D3, D4, R1 considering all input data as for legumes.

**Table 8.9-59:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to soybeans (1 x 1183 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4endimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream*	-	0.161
90 %		0.162	-
75 %	R3 stream	-	0.215
90 %		0.230	-
75 %	R4 stream	-	0.157
90 %		0.200	-

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4, R1 are not available for soybeans in programs used for modelling, the surrogate crop was proposed: legumes. Presented calculation was done for legumes, for scenarios D3, D4, R1 considering all input data as for legumes.

**Table 8.9-6029:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.694	1.428	0.975	0.742	-	-	-	-
50 %		1.346	0.743	0.516	0.399	-	-	-	-
75 %		0.745	0.453	0.324	0.245	-	-	-	-
90 %		0.453	0.304	0.223	0.170	-	-	-	-
None	D4 pond	0.342	0.248	0.196	-	-	-	-	-
50 %		0.203	0.149	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.819	1.505	1.030	0.784	-	-	-	-
50 %		1.432	0.770	0.528	0.408	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
75 %	D6 1 <sup>st</sup> ditch	0.739	0.408	0.308	0.308	-	-	-	-
90 %		0.328	0.308	0.308	0.308	-	-	-	-
None		2.655	1.407	0.961	0.731	-	-	-	-
50 %		1.327	0.704	0.540	0.540	-	-	-	-
75 %	D6 2 <sup>nd</sup> ditch	0.663	0.540	0.540	0.540	-	-	-	-
90 %		0.540	0.540	-	-	-	-	-	-
None		2.720	1.442	1.060	1.060	-	-	-	-
50 %		1.359	1.060	1.060	1.060	-	-	-	-
75 %	R1 pond	1.060	1.060	-	-	-	-	-	-
90 %		1.060	-	-	-	-	-	-	-
None		-	-	-	-	0.344	0.250	0.197	-
50 %		-	-	-	-	0.208	0.152	-	-
75 %	R1 stream	-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None		-	-	-	-	2.460	1.325	0.910	0.702
50 %		-	-	-	-	1.280	0.713	0.554	0.378
75 %	R2 stream	-	-	-	-	1.024	0.713	0.554	0.378
90 %		-	-	-	-	1.024	0.713	-	-
None		-	-	-	-	3.222	1.727	1.184	0.901
50 %		-	-	-	-	1.651	0.894	0.615	0.475
75 %	R3 stream	-	-	-	-	0.866	0.485	0.336	0.256
90 %		-	-	-	-	0.400	0.232	0.163	0.124
None		-	-	-	-	3.402	1.824	1.253	0.953
50 %		-	-	-	-	1.754	0.964	0.668	0.509
75 %	R4 stream	-	-	-	-	0.957	0.643	0.449	0.339
90 %		-	-	-	-	0.929	0.643	0.449	0.339
None		-	-	-	-	2.459	1.331	0.915	0.707
50 %		-	-	-	-	1.625	1.132	0.915	0.601
75 %		-	-	-	-	1.625	1.132	0.915	0.601
90 %		-	-	-	-	1.625	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-61:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.591
90 %		0.591	-
75 %	R2 stream	-	0.241
90 %		0.228	-
75 %	R3 stream	-	0.270
90 %		0.314	-
75%	R4 stream	-	0.197
90%		0.218	-

**Table 8.9-62:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.698	1.430	0.977	0.743	-	-	-	-
50 %		1.349	0.752	0.522	0.398	-	-	-	-
75 %		0.756	0.462	0.330	0.251	-	-	-	-
90 %		0.462	0.309	0.226	0.172	-	-	-	-
None	D4 pond	0.338	0.245	0.194	-	-	-	-	-
50 %		0.201	0.147	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.838	1.516	1.038	0.790	-	-	-	-
50 %		1.443	0.776	0.533	0.405	-	-	-	-
75 %		0.745	0.406	0.315	0.315	-	-	-	-
90 %		0.327	0.315	0.315	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D6 ditch 1 <sup>st</sup>	2.698	1.430	0.977	0.743	-	-	-	-
50 %		1.348	0.748	0.520	0.487	-	-	-	-
75 %		0.750	0.487	0.487	0.487	-	-	-	-
90 %		0.487	0.487	0.487	-	-	-	-	-
None	D6 ditch 2 <sup>nd</sup>	2.720	1.456	1.051	1.051	-	-	-	-
50 %		1.418	1.051	1.051	-	-	-	-	-
75 %		1.051	1.051	-	-	-	-	-	-
90 %		1.051	-	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.354	0.257	0.202	-
50 %		-	-	-	-	0.216	0.157	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	2.468	1.331	0.916	0.697
50 %		-	-	-	-	1.289	0.713	0.547	0.375
75 %		-	-	-	-	1.025	0.713	0.547	0.373
90 %		-	-	-	-	1.025	-	-	-
None	R2 stream	-	-	-	-	3.254	1.746	1.197	0.911
50 %		-	-	-	-	1.671	0.906	0.624	0.475
75 %		-	-	-	-	0.879	0.487	0.337	0.257
90 %		-	-	-	-	0.405	0.235	0.169	0.126
None	R3 stream	-	-	-	-	3.418	1.841	1.264	0.962
50 %		-	-	-	-	1.770	0.976	0.676	0.515
75 %		-	-	-	-	1.001	0.696	0.534	0.364
90 %		-	-	-	-	1.001	0.696	0.534	0.364
None	R4 stream	-	-	-	-	2.440	1.317	0.904	0.688
50 %		-	-	-	-	1.642	1.144	0.877	0.598
75 %		-	-	-	-	1.642	1.144	0.877	0.598
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-63:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.593
90 %		0.593	-
75 %	R2 stream	-	0.257
90 %		0.235	0.126
75 %	R3 stream	-	0.296
90 %		0.309	0.170
75 %	R4 stream	-	0.204
90 %		0.243	-

**Table 8.9-64:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1137 g/ha) in pre-emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.926	1.021	0.697	0.530	-	-	-	-
50 %		0.972	0.542	0.337	0.286	-	-	-	-
75 %		0.549	0.333	0.240	0.181	-	-	-	-
90 %		0.334	0.223	0.164	-	-	-	-	-
None	D4 pond	0.246	0.179	-	-	-	-	-	-
50 %		0.147	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.016	1.076	0.737	0.560	-	-	-	-
50 %		1.024	0.550	0.378	0.287	-	-	-	-
75 %		0.528	0.288	0.211	0.211	-	-	-	-
90 %		0.231	0.211	-	-	-	-	-	-
None	D6 ditch 1 <sup>st</sup>	1.898	1.006	0.687	0.523	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %		0.949	0.503	0.367	0.367	-	-	-	-
75 %		0.474	0.367	0.367	-	-	-	-	-
90 %		0.367	0.367	-	-	-	-	-	-
None	D6 ditch 2 <sup>nd</sup>	1.945	1.041	0.733	0.733	-	-	-	-
50 %		1.015	0.733	0.733	-	-	-	-	-
75 %		0.733	0.733	-	-	-	-	-	-
90 %		0.733	-	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.253	0.183	-	-
50 %		-	-	-	-	0.155	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.765	0.952	0.655	0.498
50 %		-	-	-	-	0.922	0.515	0.395	0.269
75 %		-	-	-	-	0.741	0.515	0.395	0.269
90 %		-	-	-	-	0.741	-	-	-
None	R2 stream	-	-	-	-	2.304	1.235	0.847	0.644
50 %		-	-	-	-	1.181	0.640	0.440	0.335
75 %		-	-	-	-	0.620	0.342	0.237	0.180
90 %		-	-	-	-	0.283	0.164	0.115	-
None	R3 stream	-	-	-	-	2.446	1.317	0.904	0.688
50 %		-	-	-	-	1.267	0.698	0.484	0.368
75 %		-	-	-	-	0.694	0.457	0.394	0.238
90 %		-	-	-	-	0.659	0.457	0.394	0.238
None	R4 stream	-	-	-	-	1.722	0.959	0.659	0.501
50 %		-	-	-	-	1.147	0.799	0.613	0.418
75 %		-	-	-	-	1.147	0.799	0.613	0.418
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).



**Table 8.9-65:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1137 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	-
90 %		0.429	-
75 %	R2 stream	-	0.180
90 %		0.164	
75 %	R3 stream	-	0.211
90 %		0.228	
75 %	R4 stream	-	0.153
90 %		0.158	-

**Table 8.9-66:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1137 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.929	1.023	0.698	0.531	-	-	-	-
50 %		0.965	0.537	0.373	0.283	-	-	-	-
75 %		0.541	0.330	0.237	0.179	-	-	-	-
90 %		0.331	0.221	0.163	-	-	-	-	-
None	D4 pond	0.242	0.175	-	-	-	-	-	-
50 %		0.144	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.029	1.084	0.742	0.564	-	-	-	-
50 %		1.032	0.555	0.381	0.289	-	-	-	-
75 %		0.533	0.290	0.218	0.218	-	-	-	-
90 %		0.234	0.218	-	-	-	-	-	-
None	D6 ditch 1 <sup>st</sup>	1.929	1.022	0.698	0.531	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %		0.964	0.534	0.372	0.335	-	-	-	-
75 %		0.537	0.335	0.335	0.335	-	-	-	-
90 %		0.335	0.335	0.335	-	-	-	-	-
None	D6 ditch 2 <sup>nd</sup>	1.945	1.041	0.724	0.724	-	-	-	-
50 %		1.015	0.724	0.724	0.724	-	-	-	-
75 %		0.724	0.724	-	-	-	-	-	-
90 %		0.724	-	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.253	0.183	-	-
50 %		-	-	-	-	0.155	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.765	0.951	0.655	0.498
50 %		-	-	-	-	0.922	0.509	0.386	0.268
75 %		-	-	-	-	0.724	0.504	0.386	0.263
90 %		-	-	-	-	0.724	0.504	-	-
None	R2 stream	-	-	-	-	2.327	1.248	0.856	0.651
50 %		-	-	-	-	1.195	0.648	0.446	0.339
75 %		-	-	-	-	0.629	0.348	0.241	0.183
90 %		-	-	-	-	0.290	0.168	0.119	-
None	R3 stream	-	-	-	-	2.444	1.316	0.904	0.687
50 %		-	-	-	-	1.266	0.697	0.483	0.367
75 %		-	-	-	-	0.705	0.490	0.375	0.256
90 %		-	-	-	-	0.705	0.490	0.375	0.256
None	R4 stream	-	-	-	-	1.745	0.941	0.647	0.491
50 %		-	-	-	-	1.157	0.806	0.618	0.421
75 %		-	-	-	-	1.157	0.806	0.618	0.421
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-67:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to bulb vegetables (1 x 1137 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.420
90 %		0.420	-
75 %	R3 stream	-	0.210
90 %		0.220	-
75 %	R4 stream	-	0.146
90 %		0.172	-

**Table 8.9-6830:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to field beans (1 x 1590 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D2 ditch	2.721	1.461	1.007	0.767	-	-	-	-
50 %		1.424	0.817	0.575	0.444	-	-	-	-
75 %		0.853	0.530	0.385	0.292	-	-	-	-
90 %		0.554	0.377	0.280	0.249	-	-	-	-
None	D2 stream	3.117	1.668	1.143	0.870	-	-	-	-
50 %		1.591	0.861	0.595	0.460	-	-	-	-
75 %		0.847	0.485	0.338	0.258	-	-	-	-
90 %		0.420	0.252	0.179	0.162	-	-	-	-
None	D3 ditch	2.697	1.429	0.976	0.743	-	-	-	-
50 %		1.348	0.748	0.520	0.402	-	-	-	-
75 %		0.750	0.463	0.331	0.252	-	-	-	-
90 %		0.464	0.310	0.227	0.173	-	-	-	-
None	D4 pond	0.342	0.248	0.196	-	-	-	-	-
50 %		0.203	0.149	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		█	█	█	█	█	█	█	█
None	D4 stream	2.819	1.505	1.030	0.784	-	-	-	-
50 %		1.432	0.770	0.528	0.408	-	-	-	-
75 %		0.739	0.408	0.281	0.214	-	-	-	-
90 %		0.328	0.189	0.189	█	-	-	-	-
None	D6 1 <sup>st</sup> ditch	2.668	1.414	0.966	0.735	-	-	-	-
50 %		1.333	0.707	0.483	0.452	-	-	-	-
75 %		0.675	0.452	0.452	0.452	-	-	-	-
90 %		0.452	0.452	0.452	█	-	-	-	-
None	D6 2 <sup>nd</sup> ditch	2.720	1.442	0.985	0.749	-	-	-	-
50 %		1.359	0.722	0.588	0.588	-	-	-	-
75 %		0.723	0.588	0.588	0.588	-	-	-	-
90 %		0.588	0.588	█	█	-	-	-	-
None	R1 pond	█	█	█	█	0.341	0.247	0.196	█
50 %		█	█	█	█	0.204	0.149	█	█
75 %		█	█	█	█	█	█	█	█
90 %		█	█	█	█	█	█	█	█
None	R1 stream	-	-	-	-	2.459	1.325	0.910	0.703
50 %		-	-	-	-	1.276	0.724	0.563	0.384
75 %		-	-	-	-	1.040	0.724	0.563	0.384
90 %		-	-	-	-	1.040	█	█	█
None	R2 stream	-	-	-	-	3.233	1.734	1.188	0.917
50 %		-	-	-	-	1.657	0.898	0.618	0.477
75 %		-	-	-	-	0.870	0.488	0.338	0.257
90 %		-	-	-	-	0.404	0.234	0.173	0.126
None	R3 stream	-	-	-	-	3.393	1.818	1.248	0.949
50 %		-	-	-	-	1.745	0.963	0.904	0.508
75 %		-	-	-	-	0.952	0.661	0.515	0.352
90 %		-	-	-	-	0.947	0.661	0.515	0.352
None	R4 stream	-	-	-	-	2.452	1.321	0.907	0.700
50 %		-	-	-	-	1.550	1.080	0.840	0.574
75 %		-	-	-	-	1.550	1.080	0.840	0.574
90 %		-	-	-	-	█	█	█	█

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian

Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-69:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to beans (1 x 1590 g/ha) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.609
90 %		0.610	-
75 %	R2 stream	-	0.254
90 %		0.230	-
75 %	R3 stream	-	0.289
90 %		0.305	-
75 %	R4 stream	-	0.212
90 %		0.263	-

**Table 8.9-70:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to field beans (1 x 1137 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D2 ditch	1.957	1.065	0.737	0.559	-	-	-	-
50 %		1.059	0.612	0.432	0.327	-	-	-	-
75 %		0.640	0.403	0.292	0.221	-	-	-	-
90 %		0.421	0.285	0.211	-	-	-	-	-
None	D2 stream	2.238	1.197	0.820	0.624	-	-	-	-
50 %		1.142	0.621	0.429	0.326	-	-	-	-
75 %		0.611	0.345	0.241	0.183	-	-	-	-
90 %		0.299	0.179	0.128	-	-	-	-	-
None	D3 ditch	1.928	1.022	0.698	0.531	-	-	-	-
50 %		0.979	0.546	0.380	0.288	-	-	-	-
75 %		0.559	0.341	0.245	0.185	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		0.342	0.228	0.168	-	-	-	-	-
None	D4 pond	0.246	0.179	-	-	-	-	-	-
50 %		0.147	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.016	1.076	0.737	0.560	-	-	-	-
50 %		1.024	0.550	0.378	0.287	-	-	-	-
75 %		0.528	0.288	0.198	0.151	-	-	-	-
90 %		0.231	0.130	-	-	-	-	-	-
None	D6 1 <sup>st</sup> ditch	1.908	1.011	0.691	0.525	-	-	-	-
50 %		0.953	0.505	0.346	0.308	-	-	-	-
75 %		0.496	0.308	0.308	0.308	-	-	-	-
90 %		0.308	0.308	0.308	-	-	-	-	-
None	D6 2 <sup>nd</sup> ditch	1.945	1.031	0.704	0.536	-	-	-	-
50 %		0.986	0.550	0.399	0.399	-	-	-	-
75 %		0.565	0.399	0.399	0.399	-	-	-	-
90 %		0.399	0.399	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.250	0.181	-	-
50 %		-	-	-	-	0.151	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.765	0.951	0.653	0.496
50 %		-	-	-	-	0.919	0.539	0.414	0.282
75 %		-	-	-	-	0.775	0.539	0.414	0.282
90 %		-	-	-	-	0.775	-	-	-
None	R2 stream	-	-	-	-	2.312	1.240	0.850	0.646
50 %		-	-	-	-	1.186	0.643	0.442	0.336
75 %		-	-	-	-	0.623	0.344	0.238	0.181
90 %		-	-	-	-	0.285	0.165	0.120	-
None	R3 stream	-	-	-	-	2.441	1.313	0.901	0.685
50 %		-	-	-	-	1.267	0.699	0.484	0.368
75 %		-	-	-	-	0.692	0.466	0.358	0.244
90 %		-	-	-	-	0.667	0.466	0.358	0.244

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	R4 stream	-	-	-	-	1.762	0.951	0.655	0.498
50 %		-	-	-	-	1.145	0.798	0.612	0.418
75 %		-	-	-	-	1.145	0.798	0.612	0.418
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-71: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to field beans (1 x 1137 g/ha) according to the central EU zone GAP according to surface water VFSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.454
90 %		0.454	-
75 %	R2 stream	-	0.181
90 %		0.165	-
75 %	R3 stream	-	0.209
90 %		0.223	-
75 %	R4 stream	-	0.152
90 %		0.193	-

**Table 8.9-7231:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to carrots, parsley, parsnip and fennel (root vegetables 1 x 1590 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.694	1.428	0.975	0.742	-	-	-	-
50 %		1.346	0.743	0.516	0.399	-	-	-	-
75 %		0.745	0.453	0.324	0.247	-	-	-	-
90 %		0.453	0.304	0.223	0.170	-	-	-	-
None	D4 pond***	0.331	0.241	0.190	-	-	-	-	-
50 %		0.197	0.144	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.906	1.554	1.064	0.810	-	-	-	-
50 %		1.480	0.798	0.548	0.423	-	-	-	-
75 %		0.768	0.426	0.307	0.307	-	-	-	-
90 %		0.346	0.307	0.307	0.307	-	-	-	-
None	D6 ditch	2.664	1.412	0.965	0.734	-	-	-	-
50 %		1.331	0.706	0.482	0.372	-	-	-	-
75 %		0.679	0.398	0.290	0.290	-	-	-	-
90 %		0.366	0.290	0.290	0.290	-	-	-	-
None	R1 pond	-	-	-	-	0.345	0.251	0.198	-
50 %		-	-	-	-	0.209	0.153	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	2.460	1.325	0.911	0.704
50 %		-	-	-	-	1.282	0.728	0.566	0.386
75 %		-	-	-	-	1.046	0.728	0.566	0.386
90 %		-	-	-	-	1.046	-	-	-
None	R2 stream 1 <sup>st</sup>	-	-	-	-	3.224	1.728	1.185	0.901
50 %		-	-	-	-	1.652	0.895	0.615	0.475
75 %		-	-	-	-	0.866	0.485	0.336	0.256
90 %		-	-	-	-	0.401	0.232	0.163	0.125
None	R2 stream 2 <sup>nd</sup>	-	-	-	-	3.320	1.783	1.223	0.931
50 %		-	-	-	-	1.708	0.928	0.639	0.487



PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
75 %	R3 stream	-	-	-	-	0.902	0.508	0.353	0.269
90 %		-	-	-	-	0.425	0.251	0.178	0.136
None		-	-	-	-	3.402	1.824	1.252	0.953
50 %		-	-	-	-	1.753	0.964	0.668	0.509
75 %	R4 stream	-	-	-	-	0.956	0.630	0.489	0.332
90 %		-	-	-	-	0.910	0.630	0.489	0.332
None		-	-	-	-	2.459	1.331	0.915	0.697
50 %		-	-	-	-	1.628	1.149	0.870	0.602
75 %		-	-	-	-	1.628	1.149	0.870	0.602
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in pro-grams used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenario D4 considering all input data as for vegetables leafy 1st.

**Table 8.9-73: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to carrots, parsley, parsnip and fennel (root vegetables 1 x 1590 g/ha) according to the central EU zone GAP according to surface water VFSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.213
90 %		0.215	-
75 %	R2 stream 1 <sup>st</sup>	-	0.252
90 %		0.228	-
75 %	R2 stream 2 <sup>nd</sup>	-	0.265
90 %		0.247	-
75 %	R3 stream	-	0.292
90 %		0.314	-
75 %	R4 stream	-	0.212

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
90 %		0.218	-

**Table 8.9-74:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to carrots and parsley (root vegetables 1 x 1137 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.926	1.021	0.697	0.530	-	-	-	-
50 %		0.972	0.542	0.377	0.286	-	-	-	-
75 %		0.549	0.333	0.240	0.181	-	-	-	-
90 %		0.334	0.223	0.164	-	-	-	-	-
None	D4 pond***	0.242	0.176	-	-	-	-	-	-
50 %		0.144	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.078	1.111	0.761	0.579	-	-	-	-
50 %		1.059	0.571	0.392	0.298	-	-	-	-
75 %		0.594	0.301	0.210	0.210	-	-	-	-
90 %		0.244	0.210	-	-	-	-	-	-
None	D6 ditch	1.905	1.010	0.690	0.525	-	-	-	-
50 %		0.952	0.505	0.345	0.262	-	-	-	-
75 %		0.495	0.287	0.202	0.196	-	-	-	-
90 %		0.264	0.196	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.254	0.184	-	-
50 %		-	-	-	-	0.156	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.765	0.953	0.656	0.499
50 %		-	-	-	-	0.923	0.527	0.404	0.275
75 %		-	-	-	-	0.758	0.527	0.404	0.275

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		-	-	-	-	0.758	0.527	-	-
None	R2 stream 1 <sup>st</sup>	-	-	-	-	2.306	1.236	0.847	0.664
50 %		-	-	-	-	1.182	0.640	0.440	0.335
75 %		-	-	-	-	0.602	0.342	0.237	0.180
90 %		-	-	-	-	0.283	0.164	0.115	-
None	R2 stream 2 <sup>nd</sup>	-	-	-	-	2.376	1.276	0.875	0.666
50 %		-	-	-	-	1.223	0.665	0.458	0.348
75 %		-	-	-	-	0.647	0.360	0.250	0.190
90 %		-	-	-	-	0.305	0.180	0.128	-
None	R3 stream	-	-	-	-	2.446	1.317	0.904	0.687
50 %		-	-	-	-	1.266	0.698	0.484	0.373
75 %		-	-	-	-	0.694	0.449	0.343	0.233
90 %		-	-	-	-	0.648	0.449	0.343	0.233
None	R4 stream	-	-	-	-	1.772	0.959	0.659	0.501
50 %		-	-	-	-	1.161	0.808	0.620	0.423
75 %		-	-	-	-	1.161	0.808	0.620	0.423
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenario D4 considering all input data as for vegetables leafy 1st.

**Table 8.9-75:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to carrots and parsley (root vegetables 1 x 1137 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.153
90 %		0.155	-

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R2 stream 1 <sup>st</sup>	-	0.180
90 %		0.164	-
75 %	R2 stream 2 <sup>nd</sup>	-	0.190
90 %		0.180	-
75 %	R3 stream	-	0.212
90 %		0.229	-
75 %	R4 stream	-	0.153
90 %		0.158	-

**Table 8.9-7632:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to lupine (legumes, 1 x 1183 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.004	1.062	0.726	0.560	-	-	-	-
50 %		1.001	0.553	0.389	0.296	-	-	-	-
75 %		0.554	0.336	0.242	0.184	-	-	-	-
90 %		0.338	0.225	0.167	-	-	-	-	-
None	D4 pond	0.254	0.185	-	-	-	-	-	-
50 %		0.152	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.097	1.120	0.767	0.591	-	-	-	-
50 %		1.065	0.573	0.399	0.303	-	-	-	-
75 %		0.549	0.304	0.209	0.205	-	-	-	-
90 %		0.244	0.205	-	-	-	-	-	-
None	D5 pond	0.250	0.181	-	-	-	-	-	-
50 %		0.149	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D5 stream	2.170	1.157	0.792	0.611	-	-	-	-
50 %		1.098	0.5889	0.409	0.312	-	-	-	-
75 %		0.5626	0.309	0.213	0.162	-	-	-	-
90 %		0.245	0.137	-	-	-	-	-	-
None	D6 ditch	2.006	1.063	0.726	0.560	-	-	-	-
50 %		1.002	0.546	0.384	0.293	-	-	-	-
75 %		0.547	0.331	0.257	0.257	-	-	-	-
90 %		0.334	0.257	0.257	0.257	-	-	-	-
None	R1 pond	-	-	-	-	0.255	0.185	-	-
50 %		-	-	-	-	0.154	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.830	0.986	0.678	0.523
50 %		-	-	-	-	0.954	0.527	0.376	0.281
75 %		-	-	-	-	0.697	0.490	0.376	0.256
90 %		-	-	-	-	0.697	0.490	0.376	0.256
None	R2 stream	-	-	-	-	2.438	1.308	0.897	0.692
50 %		-	-	-	-	1.252	0.680	0.475	0.362
75 %		-	-	-	-	0.660	0.372	0.258	0.196
90 %		-	-	-	-	0.310	0.181	0.127	-
None	R3 stream	-	-	-	-	2.531	1.344	0.918	0.708
50 %		-	-	-	-	1.282	0.701	0.492	0.375
75 %		-	-	-	-	0.730	0.517	0.397	0.271
90 %		-	-	-	-	0.730	0.517	0.397	0.271
None	R4 stream	-	-	-	-	1.824	0.983	0.675	0.521
50 %		-	-	-	-	1.198	0.836	0.651	0.445
75 %		-	-	-	-	1.198	0.836	0.651	0.445
90 %		-	-	-	-	1.198	0.836	0.651	0.445

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-77:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to lupine (legumes, 1 x 1183 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.161
90 %		0.162	-
75 %	R2 stream	-	0.196
90 %		0.181	-
75 %	R3 stream	-	0.215
90 %		0.324	-
75 %	R4 stream	-	0.159
90 %		0.180	-

**Table 8.9-7833:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter oilseed rape use no. 14 (1 x 455 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D2 ditch	0.781	0.424	0.292	0.222	-	-	-	-
50 %		0.413	0.235	0.166	-	-	-	-	-
75 %		0.245	0.150	-	-	-	-	-	-
90 %		0.154	-	-	-	-	-	-	-
None	D2 stream	0.938	0.498	0.345	0.262	-	-	-	-
50 %		0.470	0.253	0.173	0.132	-	-	-	-
75 %		0.239	0.127	-	-	-	-	-	-
90 %		0.097	-	-	-	-	-	-	-
None	D3 ditch	0.780	0.419	0.286	0.218	-	-	-	-
50 %		0.395	0.217	0.151	-	-	-	-	-
75 %		0.218	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	0.901	0.485	0.331	0.252	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %		0.458	0.245	0.169	0.128	-	-	-	-
75 %		0.240	0.134	-	-	-	-	-	-
90 %		0.119	-	-	-	-	-	-	-
None	D5 stream	0.972	0.515	0.357	0.272	-	-	-	-
50 %		0.486	0.262	0.179	0.136	-	-	-	-
75 %		0.249	-	-	-	-	-	-	-
90 %		0.125	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	0.698	0.381	0.262	0.199
50 %		-	-	-	-	0.368	0.203	0.140	-
75 %		-	-	-	-	0.242	-	-	-
90 %		-	-	-	-	0.242	-	-	-
None	R3 stream	-	-	-	-	0.971	0.516	0.358	0.272
50 %		-	-	-	-	0.488	0.264	0.180	0.137
75 %		-	-	-	-	0.257	-	-	-
90 %		-	-	-	-	0.199	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-79:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter oilseed rape use no. 14 (1 x 455 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
None	R1 stream	0.381	0.199
50 %		0.203	-
None	R3 stream	0.523	0.272
50 %		0.264	0.137
75 %		0.145	-

**Table 8.9-8034:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter oilseed rape use no. 15 (1 x 910 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D2 ditch	1.563	0.837	0.586	0.445	-	-	-	-
50 %		0.815	0.472	0.332	0.252	-	-	-	-
75 %		0.493	0.301	0.217	0.163	-	-	-	-
90 %		0.311	0.213	-	-	-	-	-	-
None	D2 stream	1.877	0.996	0.680	0.525	-	-	-	-
50 %		0.940	0.499	0.346	0.263	-	-	-	-
75 %		0.471	0.254	0.174	0.132	-	-	-	-
90 %		0.193	0.103	-	-	-	-	-	-
None	D3 ditch	1.549	0.821	0.569	0.433	-	-	-	-
50 %		0.774	0.431	0.301	0.228	-	-	-	-
75 %		0.433	0.262	0.188	-	-	-	-	-
90 %		0.264	0.176	-	-	-	-	-	-
None	D4 stream	1.802	0.956	0.653	0.504	-	-	-	-
50 %		0.903	0.490	0.344	0.261	-	-	-	-
75 %		0.491	0.272	0.190	-	-	-	-	-
90 %		0.241	0.149	-	-	-	-	-	-
None	D5 stream	1.944	1.031	0.715	0.543	-	-	-	-
50 %		0.973	0.517	0.358	0.272	-	-	-	-
75 %		0.498	0.279	0.196	0.149	-	-	-	-
90 %		0.249	0.158	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.400	0.755	0.527	0.400
50 %		-	-	-	-	0.730	0.408	0.296	0.215
75 %		-	-	-	-	0.730	0.386	0.296	-
90 %		-	-	-	-	0.554	0.386	-	-
None	R3 stream	-	-	-	-	1.940	1.033	0.708	0.546
50 %		-	-	-	-	0.991	0.542	0.380	0.288
75 %		-	-	-	-	0.876	0.404	0.310	0.212
90 %		-	-	-	-	0.580	0.404	0.310	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).



**Table 8.9-81:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to winter oilseed rape use no. 15 (1 x 910 g/ha) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
50%	R1 stream	-	0.212
75 %		0.226	-
90 %		-	-
50%	R3 stream	-	0.284
75 %		0.305	0.162
90 %		0.2295	-

**Table 8.9-8235:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 1 <sup>st</sup> ditch	2.694	1.428	0.975	0.742	-	-	-	-
50 %		1.346	0.743	0.516	0.399	-	-	-	-
75 %		0.745	0.453	0.324	0.247	-	-	-	-
90 %		0.453	0.304	0.223	0.170	-	-	-	-
None	D3 2 <sup>nd</sup> ditch	2.701	1.432	0.978	0.744	-	-	-	-
50 %		1.350	0.716	0.494	0.382	-	-	-	-
75 %		0.713	0.421	0.299	0.228	-	-	-	-
90 %		0.419	0.282	0.207	-	-	-	-	-
None	D4 pond	0.331	0.241	0.190	-	-	-	-	-
50 %		0.197	0.144	-	-	-	-	-	-
None	D4 stream	2.906	1.554	1.064	0.810	-	-	-	-
50 %		1.480	0.798	0.548	0.423	-	-	-	-
75 %		0.768	0.426	0.307	0.307	-	-	-	-
90 %		0.346	0.307	0.307	0.307	-	-	-	-
None	D6 ditch	2.720	1.442	0.985	0.750	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %		1.359	0.750	0.750	0.750	-	-	-	-
75 %		0.750	0.750	0.750	-	-	-	-	-
90 %		0.750	-	-	-	-	-	-	-
None	R1 1 <sup>st</sup> pond	-	-	-	-	0.343	0.249	0.197	-
50 %		-	-	-	-	0.257	0.173	-	-
75 %		-	-	-	-	0.257	-	-	-
None	R1 2 <sup>nd</sup> pond	-	-	-	-	0.373	0.251	0.196	-
50 %		-	-	-	-	0.373	0.251	-	-
None	R1 1 <sup>st</sup> stream	-	-	-	-	2.460	1.325	0.912	0.704
50 %		-	-	-	-	1.282	0.708	0.533	0.379
75 %		-	-	-	-	0.984	0.694	0.533	0.363
90 %		-	-	-	-	0.984	0.694	0.533	0.363
None	R1 2 <sup>nd</sup> stream	-	-	-	-	2.441	1.310	0.900	0.695
50 %		-	-	-	-	1.262	0.692	0.505	0.369
75 %		-	-	-	-	0.932	0.659	0.505	0.345
90 %		-	-	-	-	0.932	0.659	0.505	0.345
None	R2 1 <sup>st</sup> stream	-	-	-	-	3.224	1.728	1.185	0.902
50 %		-	-	-	-	1.652	0.895	0.616	0.475
75 %		-	-	-	-	0.945	0.486	0.336	0.256
90 %		-	-	-	-	0.945	0.232	0.163	0.125
None	R2 2 <sup>nd</sup> stream	-	-	-	-	3.320	1.783	1.223	0.931
50 %		-	-	-	-	1.708	0.928	0.639	0.487
75 %		-	-	-	-	0.902	0.508	0.353	0.269
90 %		-	-	-	-	0.401	0.251	0.178	0.136
None	R3 1 <sup>st</sup> stream	-	-	-	-	3.402	1.824	1.252	0.953
50 %		-	-	-	-	1.753	0.964	0.668	0.509
75 %		-	-	-	-	0.956	0.639	0.496	0.337
90 %		-	-	-	-	0.924	0.639	0.496	0.337
None	R3 2 <sup>nd</sup> stream	-	-	-	-	3.396	1.804	1.233	0.938
50 %		-	-	-	-	1.706	0.909	0.628	0.478
75 %		-	-	-	-	0.893	0.540	0.415	0.283
90 %		-	-	-	-	0.774	0.540	0.415	0.283
None	R4 1 <sup>st</sup>	-	-	-	-	2.433	1.309	0.900	0.694

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %	stream	-	-	-	-	1.554	1.081	0.841	0.574
75 %		-	-	-	-	1.554	1.081	0.841	0.574
90 %		-	-	-	-	-	-	-	-
None	R4 2 <sup>nd</sup> stream	-	-	-	-	2.441	1.308	0.899	0.694
50 %		-	-	-	-	1.538	1.072	0.835	0.571
75 %		-	-	-	-	1.538	1.072	0.835	0.571
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-83: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha) in pre emergence according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream 1 <sup>st</sup>	-	0.216
90 %		0.218	-
75 %	R1 stream 2 <sup>nd</sup>	-	0.206
90 %		0.203	-
75 %	R2 stream 1 <sup>st</sup>	-	0.256
90 %		0.232	0.125
75 %	R2 stream 2 <sup>nd</sup>	-	0.269
90 %		0.251	0.134
75 %	R3 stream 1 <sup>st</sup>	-	0.297
90 %		0.319	0.176
75 %	R3 stream 2 <sup>nd</sup>	-	0.273
90 %		0.284	0.156
75 %	R4 stream 1 <sup>st</sup>	-	0.206

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
90 %		0.200	-
75 %	R4 stream 2 <sup>nd</sup>	-	0.205
90 %		0.206	-

**Table 8.9-84:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch 1 <sup>st</sup>	2.698	1.430	0.977	0.743	-	-	-	-
50 %		1.348	0.751	0.522	0.398	-	-	-	-
75 %		0.755	0.461	0.329	0.251	-	-	-	-
90 %		0.462	0.309	0.226	0.172	-	-	-	-
None	D3 ditch 2 <sup>nd</sup>	2.701	1.432	0.978	0.744	-	-	-	-
50 %		1.350	0.747	0.519	0.395	-	-	-	-
75 %		0.748	0.456	0.326	0.248	-	-	-	-
90 %		0.457	0.306	0.224	0.170	-	-	-	-
None	D4 pond	0.338	0.246	0.194	-	-	-	-	-
50 %		0.201	0.147	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.906	1.554	1.064	0.810	-	-	-	-
50 %		1.481	0.798	0.548	0.417	-	-	-	-
75 %		0.768	0.421	0.306	0.306	-	-	-	-
90 %		0.341	0.306	0.306	0.306	-	-	-	-
None	D6 ditch	2.640	1.399	0.956	0.727	-	-	-	-
50 %		1.319	0.699	0.657	0.657	-	-	-	-
75 %		0.659	0.657	0.657	-	-	-	-	-
90 %		0.657	0.657	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reducti on	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	R1 pond 1 <sup>st</sup>	-	-	-	-	0.353	0.256	0.202	-
50 %		-	-	-	-	0.268	0.180	-	-
75 %		-	-	-	-	0.268	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 pond 2 <sup>nd</sup>	-	-	-	-	0.352	0.248	0.195	-
50 %		-	-	-	-	0.351	0.237	-	-
75 %		-	-	-	-	0.350	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream 1 <sup>st</sup>	-	-	-	-	2.468	1.334	0.918	0.699
50 %		-	-	-	-	1.291	0.713	0.524	0.376
75 %		-	-	-	-	0.981	0.683	0.524	0.357
90 %		-	-	-	-	0.981	0.683	-	0.357
None	R1 stream 2 <sup>nd</sup>	-	-	-	-	2.459	1.331	0.915	0.697
50 %		-	-	-	-	1.287	0.709	0.491	0.374
75 %		-	-	-	-	0.843	0.587	0.451	0.308
90 %		-	-	-	-	0.843	0.587	0.451	0.308
None	R2 stream 1 <sup>st</sup>	-	-	-	-	3.256	1.747	1.198	0.912
50 %		-	-	-	-	1.672	0.907	0.624	0.475
75 %		-	-	-	-	0.880	0.488	0.338	0.257
90 %		-	-	-	-	0.405	0.236	0.167	0.127
None	R2 stream 2 <sup>nd</sup>	-	-	-	-	3.322	1.785	1.224	0.932
50 %		-	-	-	-	1.710	0.930	0.641	0.488
75 %		-	-	-	-	0.905	0.503	0.349	0.266
90 %		-	-	-	-	0.425	0.252	0.178	0.136
None	R3 stream 1 <sup>st</sup>	-	-	-	-	3.416	1.839	1.262	0.961
50 %		-	-	-	-	1.768	0.977	0.677	0.515
75 %		-	-	-	-	0.992	0.690	0.528	0.360
90 %		-	-	-	-	0.992	0.690	0.528	0.360
None	R3 stream 2 <sup>nd</sup>	-	-	-	-	3.396	1.805	1.233	0.938
50 %		-	-	-	-	1.720	0.945	0.659	0.497
75 %		-	-	-	-	0.930	0.531	0.385	0.284
90 %		-	-	-	-	0.720	0.502	0.385	0.263
None	R4 stream 1 <sup>st</sup>	-	-	-	-	2.468	1.330	0.914	0.696

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reducti on	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %		-	-	-	-	1.362	0.949	0.728	0.497
75 %		-	-	-	-	1.362	0.949	0.728	0.497
90 %		-	-	-	-	-	-	-	-
None	R4 stream 2 <sup>nd</sup>	-	-	-	-	2.447	1.320	0.907	0.690
50 %		-	-	-	-	1.438	1.001	0.768	0.524
75 %		-	-	-	-	1.438	1.001	0.768	0.524
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-85:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha) in post emergence according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream 1 <sup>st</sup>	-	0.215
90 %		0.217	-
75 %	R1 stream 2 <sup>nd</sup>	-	0.212
90 %		0.218	-
75 %	R2 stream 1 <sup>st</sup>	-	0.257
90 %		0.236	0.127
75 %	R2 stream 2 <sup>nd</sup>	-	0.266
90 %		0.252	0.136
75 %	R3 stream 1 <sup>st</sup>	-	0.295
90 %		0.310	0.171
75 %	R3 stream 2 <sup>nd</sup>	-	0.284
90 %		0.297	0.164
75 %	R4 stream 1 <sup>st</sup>	-	0.214

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
90 %		0.223	-
75 %	R4 stream 2 <sup>nd</sup>	-	0.206
90 %		0.208	-

**Table 8.9-8636:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to strawberry (fruiting vegetables 1 x 1590 g/ha between rows) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	2.021	1.072	0.732	0.564	-	-	-	
50 %		1.010	0.557	0.393	0.298	-	-	-	
75 %		0.559	0.340	0.240	0.184	-	-	-	
90 %		0.340	0.228	0.168	-	-	-	-	
None	D4 pond***	0.249	0.181	-	-	-	-	-	-
50 %		0.148	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.180	1.165	0.798	0.616	-	-	-	-
50 %		1.111	0.598	0.417	0.317	-	-	-	-
75 %		0.576	0.320	0.225	0.225	-	-	-	-
90 %		0.259	0.225	-	-	-	-	-	-
None	D6 ditch	2.007	1.064	0.727	0.560	-	-	-	-
50 %		1.003	0.532	0.368	0.330	-	-	-	-
75 %		0.517	0.330	0.330	0.330	-	-	-	-
90 %		0.330	0.330	0.330	-	-	-	-	-
None	R1 pond***	-	-	-	-	0.258	0.187	-	-
50 %		-	-	-	-	0.191	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1	-	-	-	-	1.845	0.994	0.684	0.527

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %	stream***	-	-	-	-	0.962	0.531	0.396	0.283
75 %		-	-	-	-	0.730	0.516	0.396	0.270
90 %		-	-	-	-	0.730	0.516	0.396	0.270
None	R2 stream	-	-	-	-	2.447	1.313	0.901	0.694
50 %		-	-	-	-	1.257	0.681	0.477	0.362
75 %		-	-	-	-	0.662	0.371	0.258	0.196
90 %		-	-	-	-	0.309	0.187	0.144	-
None	R3 stream	-	-	-	-	2.552	1.355	0.926	0.714
50 %		-	-	-	-	1.293	0.706	0.498	0.377
75 %		-	-	-	-	0.718	0.506	0.387	0.264
90 %		-	-	-	-	0.718	0.506	0.387	0.264
None	R4 stream	-	-	-	-	1.840	0.990	0.681	0.518
50 %		-	-	-	-	1.220	0.852	0.663	0.453
75 %		-	-	-	-	1.220	0.852	0.663	0.453
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for strawberry in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1st.

**Table 8.9-87: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to strawberry (fruiting vegetables 1 x 1590 g/ha between rows) according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream*	-	0.162
90 %		0.163	-
75 %	R2 stream	-	0.196
90 %		0.180	-



PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R3 stream	-	0.216
90 %		0.231	-
75 %	R4 stream	-	0.161
90 %		0.202	-

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for strawberry in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1st.

**Table 8.9-88:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to strawberry (fruiting vegetables 1 x 1137 g/ha between rows) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	1.445	0.766	0.523	0.398	-	-	-	-
50 %		0.729	0.406	0.283	0.215	-	-	-	-
75 %		0.411	0.249	0.179	-	-	-	-	-
90 %		0.250	0.166	-	-	-	-	-	-
None	D4 pond***	0.181	-	-	-	-	-	-	-
50 %		-	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	1.559	0.833	0.571	0.434	-	-	-	-
50 %		0.794	0.428	0.294	0.224	-	-	-	-
75 %		0.412	0.225	0.156	-	-	-	-	-
90 %		0.183	-	-	-	-	-	-	-
None	D6 ditch	1.434	0.760	0.519	0.395	-	-	-	-
50 %		0.717	0.381	0.265	0.226	-	-	-	-
75 %		0.382	0.226	0.226	-	-	-	-	-
90 %		0.226	-	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	R1 pond***	-	-	-	-	0.189	-	-	-
50 %		-	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream***	-	-	-	-	1.324	0.715	0.492	0.347
50 %		-	-	-	-	0.693	0.382	0.293	0.201
75 %		-	-	-	-	0.548	0.381	0.293	-
90 %		-	-	-	-	0.548	-	-	-
None	R2 stream	-	-	-	-	1.750	0.939	0.644	0.490
50 %		-	-	-	-	0.899	0.487	0.336	0.256
75 %		-	-	-	-	0.474	0.262	0.182	0.138
90 %		-	-	-	-	0.219	0.130	-	-
None	R3 stream	-	-	-	-	1.825	0.978	0.672	0.511
50 %		-	-	-	-	0.941	0.517	0.359	0.272
75 %		-	-	-	-	0.514	0.353	0.270	0.184
90 %		-	-	-	-	0.508	0.353	0.270	-
None	R4 stream	-	-	-	-	1.322	0.714	0.491	0.374
50 %		-	-	-	-	0.861	0.600	0.461	0.315
75 %		-	-	-	-	0.861	0.600	0.461	0.315
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for strawberry in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1st.

**Table 8.9-89:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to strawberry (fruiting vegetables 1 x 1137 g/ha between rows) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
50%	R1 stream*	-	0.211
75 %		-	-
90 %		0.116	-
50%	R2 stream	-	0.255
75 %		-	0.138
90 %		0.127	-
50%	R3 stream	-	0.272
75 %		-	0.156
90 %		0.168	-
50%	R4 stream	-	0.201
75 %		-	-
90 %		0.141	-

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for strawberry in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1st.

**Table 8.9-9037:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to raspberry (vines early application 1 x 1365 g/ha, between rows) to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	1.741	0.923	0.673	0.480	-	-	-	
50 %		0.885	0.493	0.363	0.261	-	-	-	
75 %		0.504	0.307	0.209	0.167	-	-	-	
90 %		0.309	0.205	-	-	-	-	-	

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D4 stream***	1.521	0.814	0.594	0.424	-	-	-	
50 %		0.776	0.418	0.306	0.218	-	-	-	
75 %		0.403	0.220	0.161	-	-	-	-	
90 %		0.179	-	-	-	-	-	-	
None	D6 ditch	1.777	0.967	0.711	0.510	-	-	-	
50 %		0.967	0.558	0.413	0.298	-	-	-	
75 %		0.591	0.370	0.276	0.202	-	-	-	
90 %		0.385	0.261	0.196	-	-	-	-	
None	R1 stream	-	-	-	-	1.335	0.723	0.529	0.378
50 %		-	-	-	-	0.700	0.386	0.283	0.203
75 %		-	-	-	-	0.383	0.220	0.163	-
90 %		-	-	-	-	0.199	-	-	-
None	R2 stream	-	-	-	-	1.754	0.943	0.689	0.492
50 %		-	-	-	-	0.905	0.493	0.361	0.258
75 %		-	-	-	-	0.480	0.268	0.196	0.141
90 %		-	-	-	-	0.226	0.132	-	-
None	R3 stream	-	-	-	-	1.853	1.003	0.734	0.525
50 %		-	-	-	-	0.971	0.536	0.393	0.282
75 %		-	-	-	-	0.536	0.311	0.2298	0.166
90 %		-	-	-	-	0.285	0.178	-	-
None	R4 stream	-	-	-	-	1.332	0.721	0.527	0.377
50 %		-	-	-	-	0.698	0.385	0.282	0.203
75 %		-	-	-	-	0.381	0.217	0.160	-
90 %		-	-	-	-	0.196	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application.

**Table 8.9-91:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to raspberry (vines early application 1 x 1365 g/ha, between rows) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.118
90 %		0.123	-
75 %	R2 stream	-	0.141
90 %		0.132	-
75 %	R3 stream	-	0.166
90 %		0.178	-
75 %	R4 stream	-	0.115
90 %		0.120	-

**Table 8.9-9238:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to currants and grapevine (vines early application 1 x 1590 g/ha, between rows) to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	2.023	1.073	0.782	0.557	-	-	-	-
50 %		1.011	0.561	0.412	0.296	-	-	-	-
75 %		0.563	0.343	0.255	0.186	-	-	-	-
90 %		0.343	0.2298	0.173	-	-	-	-	-
None	D4 pond***	0.253	0.184	-	-	-	-	-	-
50 %		0.150	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	1.768	0.945	0.690	0.492	-	-	-	-
50 %		0.901	0.486	0.355	0.254	-	-	-	-
75 %		0.467	0.256	0.187	0.134	-	-	-	-
90 %		0.208	0.118	-	-	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D6 ditch	2.041	1.096	0.802	0.574	-	-	-	
50 %		1.068	0.612	0.452	0.327	-	-	-	
75 %		0.638	0.391	0.290	0.214	-	-	-	
90 %		0.405	0.276	0.209	-	-	-	-	
None	R1 pond	-	-	-	-	0.249	0.181	-	-
50 %		-	-	-	-	0.148	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.546	0.837	0.612	0.437
50 %		-	-	-	-	0.809	0.446	0.327	0.235
75 %		-	-	-	-	0.441	0.254	0.187	0.135
90 %		-	-	-	-	0.229	0.142	-	-
None	R2 stream	-	-	-	-	2.037	1.095	0.800	0.571
50 %		-	-	-	-	1.050	0.572	0.418	0.299
75 %		-	-	-	-	0.557	0.310	0.228	0.164
90 %		-	-	-	-	0.261	0.153	-	-
None	R3 stream	-	-	-	-	2.132	1.154	0.844	0.603
50 %		-	-	-	-	1.117	0.615	0.458	0.329
75 %		-	-	-	-	0.612	0.355	0.263	0.190
90 %		-	-	-	-	0.325	0.203	0.152	-
None	R4 stream	-	-	-	-	1.541	0.834	0.618	0.436
50 %		-	-	-	-	0.807	0.445	0.327	0.234
75 %		-	-	-	-	0.440	0.251	0.185	0.133
90 %		-	-	-	-	0.222	0.137	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	

	No-spray buffer (m)	5	10	15	5	10	15
None	D3 ditch***	2.023	1.073	0.782	-	-	-
50 %		1.011	0.561	-	-	-	-
75 %		0.563	-	-	-	-	-
90 %		-	-	-	-	-	-
None	D4 stream***	1.768	0.945	0.690	-	-	-
50 %		0.901	0.486	-	-	-	-
75 %		-	-	-	-	-	-
90 %		-	-	-	-	-	-
None	D6-ditch	1.777	0.967	0.711	-	-	-
50 %		0.967	0.558	-	-	-	-
75 %		0.591	-	-	-	-	-
90 %		-	-	-	-	-	-
None	R1-stream	-	-	-	1.335	0.723	-
50 %		-	-	-	0.700	-	-
75 %		-	-	-	-	-	-
90 %		-	-	-	-	-	-
None	R2-stream	-	-	-	1.754	0.943	0.689
50 %		-	-	-	0.905	0.493	-
75 %		-	-	-	-	-	-
90 %		-	-	-	-	-	-
None	R3-stream	-	-	-	1.853	1.003	0.734
50 %		-	-	-	0.971	0.536	-
75 %		-	-	-	0.536	-	-
90 %		-	-	-	-	-	-
None	R4-stream	-	-	-	1.332	0.721	-
50 %		-	-	-	0.698	-	-
75 %		-	-	-	-	-	-
90 %		-	-	-	-	-	-

**Table 8.9-93:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to currants and grapevine (vines early application 1 x 1590 g/ha, between rows) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.135
90 %		0.142	-
75 %	R2 stream	-	0.164
90 %		0.153	-
75 %	R3 stream	-	0.190
90 %		0.203	-
75 %	R4 stream	-	0.132
90 %		0.137	-

**Table 8.9-94:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to potato (1 x 1590 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	2.698	1.430	0.977	0.743	-	-	-	-
50 %		1.348	0.724	0.503	0.389	-	-	-	-
75 %		0.726	0.433	0.310	0.236	-	-	-	-
90 %		0.434	0.291	0.214	0.163	-	-	-	-
None	D4 pond	0.331	0.241	0.190	-	-	-	-	-
50 %		0.197	0.144	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.919	1.561	1.069	0.813	-	-	-	-
50 %		1.487	0.802	0.551	0.425	-	-	-	-
75 %		0.772	0.429	0.322	0.322	-	-	-	-
90 %		0.348	0.322	0.322	0.322	-	-	-	-



PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D6 1 <sup>st</sup> ditch	2.668	1.414	0.966	0.735	-	-	-	-
50 %		1.333	0.707	0.558	0.566	-	-	-	-
75 %		0.675	0.566	0.566	0.566	-	-	-	-
90 %		0.566	0.566	0.566	-	-	-	-	-
None	D6 2 <sup>nd</sup> ditch	2.712	1.438	0.982	0.747	-	-	-	-
50 %		1.355	0.718	0.718	0.718	-	-	-	-
75 %		0.718	0.718	0.718	0.718	-	-	-	-
90 %		0.718	-	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.344	0.250	0.197	-
50 %		-	-	-	-	0.208	0.152	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	2.460	1.325	0.911	0.703
50 %		-	-	-	-	1.281	0.731	0.568	0.387
75 %		-	-	-	-	1.050	0.731	0.568	0.387
90 %		-	-	-	-	1.050	-	-	-
None	R2 stream	-	-	-	-	3.261	1.750	1.200	0.913
50 %		-	-	-	-	1.674	0.909	0.625	0.483
75 %		-	-	-	-	0.881	0.495	0.343	0.262
90 %		-	-	-	-	0.412	0.240	0.184	0.129
None	R3 stream	-	-	-	-	3.394	1.816	1.246	0.948
50 %		-	-	-	-	1.746	0.963	0.666	0.507
75 %		-	-	-	-	1.113	0.777	0.605	0.413
90 %		-	-	-	-	1.113	0.777	0.605	0.413

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-95: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to potato (1 x 1590 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.117
90 %		0.215	-
75 %	R2 stream	-	0.127
90 %		0.236	-
75 %	R3 stream	-	0.167
90 %		0.305	-

**Table 8.9-96: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to potato (1 x 1137 g/ha) according to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch	1.929	1.023	0.698	0.531	-	-	-	-
50 %		0.965	0.537	0.373	0.284	-	-	-	-
75 %		0.541	0.330	0.237	0.179	-	-	-	-
90 %		0.332	0.221	0.163	-	-	-	-	-
None	D4 pond	0.242	0.176	-	-	-	-	-	-
50 %		0.144	-	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream	2.087	1.116	0.765	0.581	-	-	-	-
50 %		1.064	0.574	0.394	0.300	-	-	-	-
75 %		0.553	0.302	0.220	0.220	-	-	-	-
90 %		0.246	0.220	-	-	-	-	-	-
None	D6 1 <sup>st</sup> ditch	1.908	1.011	0.691	0.525	-	-	-	-
50 %		0.953	0.505	0.386	0.386	-	-	-	-
75 %		0.496	0.386	0.386	0.386	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		0.386	0.386	-	-	-	-	-	-
None	D6 2 <sup>nd</sup> ditch	1.939	1.028	0.702	0.534	-	-	-	-
50 %		0.969	0.537	0.495	0.495	-	-	-	-
75 %		0.540	0.495	0.495	0.495	-	-	-	-
90 %		0.495	0.495	-	-	-	-	-	-
None	R1 pond	-	-	-	-	0.254	0.183	-	-
50 %		-	-	-	-	0.155	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	1.765	0.953	0.656	0.498
50 %		-	-	-	-	0.923	0.517	0.396	0.270
75 %		-	-	-	-	0.742	0.517	0.396	0.270
90 %		-	-	-	-	0.742	-	-	-
None	R2 stream	-	-	-	-	2.332	1.251	0.858	0.652
50 %		-	-	-	-	1.198	0.650	0.448	0.340
75 %		-	-	-	-	0.631	0.350	0.242	0.184
90 %		-	-	-	-	0.291	0.169	0.128	-
None	R3 stream	-	-	-	-	2.440	1.331	0.901	0.685
50 %		-	-	-	-	1.268	0.699	0.484	0.368
75 %		-	-	-	-	0.785	0.548	0.421	0.287
90 %		-	-	-	-	0.785	0.548	0.421	0.287

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

**Table 8.9-97: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to potato (1 x 1137 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.153
90 %		0.155	-
75 %	R2 stream	-	0.184
90 %		0.169	-
75 %	R3 stream	-	0.209
90 %		0.223	-

**Table 8.9-9840: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to ornamentals (vines early application 1 x 1590 g/ha) to the central EU zone GAP according to surface water Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	2.697	1.430	1.042	0.743	-	-	-	-
50 %		1.348	0.749	0.549	0.402	-	-	-	-
75 %		0.751	0.464	0.343	0.253	-	-	-	-
90 %		0.464	0.311	0.232	0.173	-	-	-	-
None	D4 pond***	0.342	0.248	0.203	-	-	-	-	-
50 %		0.203	0.149	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.357	1.260	0.919	0.666	-	-	-	-
50 %		1.201	0.647	0.480	0.344	-	-	-	-
75 %		0.623	0.346	0.253	0.182	-	-	-	-
90 %		0.281	0.160	0.117	-	-	-	-	-
None	D6 ditch	2.720	1.461	1.068	0.767	-	-	-	-
50 %		1.424	0.816	0.600	0.443	-	-	-	-
75 %		0.851	0.528	0.392	0.288	-	-	-	-

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
90 %		0.548	0.373	0.282	0.210	-	-	-	-
None	R1 pond	-	-	-	-	0.337	0.245	0.200	-
50 %		-	-	-	-	0.200	0.147	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream	-	-	-	-	2.061	1.115	0.8151	0.592
50 %		-	-	-	-	1.079	0.595	0.442	0.318
75 %		-	-	-	-	0.588	0.344	0.253	0.184
90 %		-	-	-	-	0.309	0.192	0.142	-
None	R2 stream	-	-	-	-	2.716	1.460	1.066	0.7622
50 %		-	-	-	-	1.400	0.762	0.5573	0.406
75 %		-	-	-	-	0.742	0.419	0.308	0.222
90 %		-	-	-	-	0.353	0.207	0.153	-
None	R3 stream	-	-	-	-	2.842	1.538	1.124	0.8055
50 %		-	-	-	-	1.488	0.821	0.6010	0.439
75 %		-	-	-	-	0.815	0.481	0.354	0.259
90 %		-	-	-	-	0.439	0.275	0.204	0.152
None	R4 stream	-	-	-	-	2.055	1.112	0.8129	0.591
50 %		-	-	-	-	1.076	0.594	0.441	0.318
75 %		-	-	-	-	0.587	0.339	0.249	0.181
90 %		-	-	-	-	0.300	0.186	0.138	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application

**Table 8.9-99:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to ornamentals (vines early application 1 x 1590 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream	-	0.182
90 %		0.189	-
75 %	R2 stream	-	0.219
90 %		0.204	-
75 %	R3 stream	-	0.255
90 %		0.271	0.149
75 %	R4 stream	-	0.178
90 %		0.183	-

**Table 8.9-10041:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to clover alfalfa (grass, alfalfa 1 x 1000 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D1 ditch	1.706	0.933	0.644	0.488	-	-	-	
50 %		0.925	0.543	0.367	0.280	-	-	-	
75 %		0.582	0.333	0.240	0.184	-	-	-	
90 %		0.345	0.235	0.175	-	-	-	-	
None	D1 stream	1.904	1.021	0.700	0.537	-	-	-	
50 %		0.977	0.530	0.365	0.278	-	-	-	
75 %		0.514	0.281	0.195	0.149	-	-	-	
90 %		0.231	0.133	-	-	-	-	-	
None	D2 ditch	1.745	0.959	0.668	0.500	-	-	-	
50 %		0.966	0.566	0.383	0.293	-	-	-	
75 %		0.605	0.355	0.258	0.197	-	-	-	
90 %		0.369	0.251	0.187	-	-	-	-	
None	D2 stream	2.048	1.087	0.742	0.573	-	-	-	

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
50 %		1.026	0.545	0.378	0.287	-	-	-	
75 %		0.515	0.277	0.190	0.144	-	-	-	
90 %		0.211	0.113	-	-	-	-	-	
None	D3 ditch	1.697	0.900	0.624	0.474	-	-	-	
50 %		0.871	0.497	0.335	0.255	-	-	-	
75 %		0.520	0.298	0.213	0.163	-	-	-	
90 %		0.298	0.199	-	-	-	-	-	
None	D4 stream	1.796	0.961	0.658	0.505	-	-	-	
50 %		0.916	0.494	0.341	0.260	-	-	-	
75 %		0.483	0.260	0.180	0.137	-	-	-	
90 %		0.210	0.118	-	-	-	-	-	
None	D5 stream	1.924	1.029	0.705	0.541	-	-	-	
50 %		0.981	0.529	0.365	0.278	-	-	-	
75 %		0.509	0.278	0.192	0.146	-	-	-	
90 %		0.223	0.126	-	-	-	-	-	
None	R1 stream***	-	-	-		1.558	0.840	0.588	0.442
50 %		-	-	-		0.819	0.462	0.312	0.238
75 %		-	-	-		0.461	0.312	0.239	0.163
90 %						0.447	0.312	0.239	-
None	R2 stream	-	-	-		2.058	1.106	0.759	0.581
50 %		-	-	-		1.062	0.578	0.398	0.303
75 %		-	-	-		0.564	0.310	0.215	0.164
90 %		-	-	-		0.258	0.149	-	-
None	R3 stream	-	-	-		2.139	1.142	0.785	0.599
50 %		-	-	-		1.104	0.608	0.418	0.318
75 %		-	-	-		0.610	0.342	0.241	0.184
90 %		-	-	-		0.384	0.267	0.204	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario R1 is not available for vines in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenario R1 considering all input data as for winter cereals.

**Table 8.9-101:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to clover alfalfa (grass, alfalfa 1 x 1000 g/ha) according to the central EU zone GAP according to surface water VFSMOD Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	VFSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream*	-	0.140
90 %		0.146	-
75 %	R2 stream	-	0.173
90 %		0.156	-
75 %	R3 stream	-	0.201
90 %		0.212	-

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario R1 is not available for vines in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenario R1 considering all input data as for winter cereals.

**Table 8.9-10242:** Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to cucurbits (fruiting vegetables 1 x 1590 g/ha) according to the central EU zone GAP according to surface water Step 4

PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D3 ditch***	2.694	1.428	0.975	0.742	-	-	-	-
50 %		1.346	0.743	0.511	0.399	-	-	-	-
75 %		0.745	0.453	0.324	0.247	-	-	-	-
90 %		0.453	0.304	0.223	0.170	-	-	-	-
None	D4 pond***	0.331	0.241	0.190	-	-	-	-	-
50 %		0.197	0.144	-	-	-	-	-	-
75 %		-	-	-	-	-	-	-	-
90 %		-	-	-	-	-	-	-	-
None	D4 stream***	2.906	1.554	1.064	0.810	-	-	-	-
50 %		1.480	0.798	0.548	0.423	-	-	-	-
75 %		0.768	0.426	0.307	0.307	-	-	-	-
90 %		0.346	0.307	0.307	0.307	-	-	-	-



PEC <sub>sw</sub> (µg/L)	Scenario	STEP 4 Pendimethalin							
Nozzle reduction	Vegetative strip (m)	None				5*	10	15**	20
	No spray buffer (m)	5	10	15	20	5	10	15	20
None	D6 ditch	2.675	1.418	0.968	0.737	-	-	-	-
50 %		1.337	0.709	0.484	0.459	-	-	-	-
75 %		0.689	0.459	0.459	0.459	-	-	-	-
90 %		0.459	0.459	0.459	-	-	-	-	-
None	R1 1 <sup>st</sup> pond	-	-	-	-	0.343	0.249	0.197	-
50 %		-	-	-	-	0.257	0.173	-	-
75 %		-	-	-	-	0.257	-	-	-
90 %		-	-	-	-	-	-	-	-
None	R1 stream***	-	-	-	-	2.460	1.325	0.912	0.704
50 %		-	-	-	-	1.282	0.708	0.533	0.379
75 %		-	-	-	-	0.984	0.694	0.533	0.363
90 %		-	-	-	-	0.984	0.694	0.533	0.363
None	R2 stream	-	-	-	-	3.262	1.750	1.200	0.913
50 %		-	-	-	-	1.675	0.909	0.626	0.483
75 %		-	-	-	-	0.882	0.496	0.343	0.262
90 %		-	-	-	-	0.412	0.252	0.194	0.132
None	R3 stream	-	-	-	-	3.402	1.807	1.235	0.939
50 %		-	-	-	-	1.723	0.942	0.653	0.504
75 %		-	-	-	-	0.969	0.673	0.523	0.356
90 %		-	-	-	-	0.969	0.673	0.523	0.356
None	R4 stream	-	-	-	-	2.452	1.320	0.907	0.691
50 %		-	-	-	-	1.646	1.148	0.894	0.611
75 %		-	-	-	-	1.646	1.148	0.894	0.611
90 %		-	-	-	-	-	-	-	-

\*0.4 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*0.7 and 0.9 was used for used for run off reduction and erosion respectively in water and sediment according to the Austrian Environmental Agency (AGES).

\*\*\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 is not available for fruiting vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenario D3, D4, R1 considering all input data as for vegetables leafy 1st.

**Table 8.9-103: Global maximum PEC<sub>sw</sub> values for Pendimethalin, following single application of PENSHUI to cucurbits (fruiting vegetables 1 x 1590 g/ha) according to the central EU zone GAP according to surface water VFSSMOD Step 4**

PEC <sub>sw</sub> (µg/L)	Scenario	VFSSMOD STEP 4 Pendimethalin	
Nozzle reduction	Vegetative strip (m)	10	20
	No spray buffer (m)	10	20
75 %	R1 stream*	-	0.213
90 %		0.215	-
75 %	R2 stream	-	0.258
90 %		0.236	-
75 %	R3 stream	-	0.285
90 %		0.305	-
75 %	R4 stream	-	0.212
90 %		0.267	-

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 is not available for fruiting vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1st. Presented calculation was done for vegetables leafy 1st, for scenario D3, D4, R1 considering all input data as for vegetables leafy 1st.

#### Metabolites of Pendimethalin

FOCUS Steps 1/2 have been calculated using the application rate worst case of 1 x 1590 g as/ha without interception for appln. hand (crop < 50cm) in all seasons and for both European zones to cover all crops for Pendimethalin.

**Table 8.9-10443: FOCUS Step 1 and 2 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H001 following single application of PENSHUI to appln. hand (crop < 50cm) (1 x 1590 g as/ha, between rows)**

Scenario	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
FOCUS					
Step 1	---	31.19	Runoff / drainage	30.96	69.61
Step 2					
Northern Europe	Oct-Feb	14.55	Runoff / drainage	14.44	32.47
	March-May	5.82		5.78	12.99
	June-Sept				
Southern Europe	Oct-Feb	11.64		11.55	25.98
	March-May				
	June-Sept	8.73		8.67	19.48

**Table 8.9-10544:** FOCUS Step 1 and 2 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application of PENSHUI to appln. hand (crop < 50cm) (1 x 1590 g as/ha, between rows)

Scenario	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
FOCUS					
Step 1	---	35.98	Runoff / drainage	24.56	1090
Step 2					
Northern Europe	Oct-Feb	11.22	Runoff / drainage	8.58	351.16
	March-May	4.72		3.56	145.15
	June-Sept				
Southern Europe	Oct-Feb	9.05		6.91	282.49
	March-May				
	June-Sept	6.89		5.23	213.82

**Table 8.9-10645:** FOCUS Step 1 and 2 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application of PENSHUI to appln. hand (crop < 50cm) (1 x 1590 g as/ha, between rows)

Scenario	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw,twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
FOCUS					
Step 1	---	58.06	Runoff / drainage	23.43	<0.01
Step 2					
Northern Europe	Oct-Feb	28.85	Runoff / drainage	11.65	<0.01
	March-May	12.15		4.91	
	June-Sept				
Southern Europe	Oct-Feb	23.29		9.40	
	March-May				
	June-Sept	17.72		7.16	

**Table 8.9-10746:** FOCUS Step 1 and 2 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application of PENSHUI to appln. hand (crop < 50cm) (1 x 1590 g as/ha, between rows)

Scenario	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw,twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
FOCUS					
Step 1	---	11.22	Runoff / drainage	2.03	803.74
Step 2					
Northern Europe	Oct-Feb	4.21	Runoff / drainage	1.23	406.85
	March-May	3.18		0.73	169.37
	June-Sept				

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
Southern Europe	Oct-Feb	3.42		0.99	327.69
	March-May				
	June-Sept	3.18		0.98	248.53

**Table 8.9-10847:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to winter cereals (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	0.014	Drift	0.014	0.178
D1	stream	<0.001	Drift	<0.001	0.024
D2	ditch	0.013	Drift	0.002	0.091
D2	stream	0.008	Drift	0.001	0.074
D3	ditch	<0.001	Drift	<0.001	0.020
D4	pond	0.002	Drift	0.002	0.022
D4	stream	0.010	Drift	<0.001	0.011
D5	pond	0.001	Drift	0.001	0.019
D5	stream	0.002	Drift	<0.001	0.010
D6	ditch	0.025	Drift	0.001	0.098
R1	pond	0.006	Run-off	0.005	0.093
R1	stream	0.030	Run-off	0.002	0.300
R3	stream	0.023	Run-off	0.003	9.787
R4	stream	0.041	Run-off	0.003	0.122

**Table 8.9-10948:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to winter cereals (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	0.001	Drift	0.001	<0.001
D1	stream	0.001	Drift	<0.001	<0.001
D2	ditch	0.001	Drift	<0.001	<0.001
D2	stream	0.001	Drift	<0.001	<0.001
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D5	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-11049:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to winter cereals (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	0.009	Drift	0.009	0.187
D1	stream	<0.001	Drift	<0.001	0.042
D2	ditch	0.003	Drift	0.002	0.159
D2	stream	0.003	Drift	0.001	0.135
D3	ditch	<0.001	Drift	<0.001	0.038
D4	pond	0.001	Drift	0.001	0.016
D4	stream	<0.001	Drift	<0.001	0.015
D5	pond	0.001	Drift	0.001	0.020
D5	stream	<0.001	Drift	<0.001	0.018
D6	ditch	0.004	Drift	0.001	0.151
R1	pond	0.001	Run-off	0.001	0.053
R1	stream	<0.001	Run-off	<0.001	0.208
R3	stream	0.001	Run-off	0.001	7.131
R4	stream	<0.001	Run-off	<0.001	0.077

**Table 8.9-11150:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to maize (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.033
D4	pond	0.002	Drift	0.001	0.020
D4	stream	0.007	Drift	0.003	0.004
D5	pond	0.001	Drift	0.001	0.017
D5	stream	0.002	Drift	<0.001	0.002

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D6	ditch	0.017	Drift	0.001	0.038
R1	pond	0.011	Run-off	0.010	0.124
R1	stream	0.031	Run-off	0.002	0.220
0R2	stream	0.010	Run-off	0.001	0.554
R3	stream	0.027	Run-off	0.003	0.086
R4	stream	0.039	Run-off	0.006	0.239

**Table 8.9-11251:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to maize (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-11352:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to maize (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.047
D4	pond	<0.001	Drift	<0.001	0.020
D4	stream	<0.001	Drift	<0.001	0.002
D5	pond	0.001	Drift	0.001	0.018
D5	stream	<0.001	Drift	<0.001	0.003
D6	ditch	0.001	Drift	<0.001	0.054
R1	pond	0.001	Run-off	0.001	0.045
R1	stream	<0.001	Run-off	<0.001	0.133

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R2	stream	<0.001	Run-off	<0.001	0.295
R3	stream	<0.001	Run-off	<0.001	0.045
R4	stream	<0.001	Run-off	<0.001	0.153

**Table 8.9-11453:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to pome/stone fruits (Early application 1 x 1590 g/ha between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.028
D4	pond	0.001	Drift	0.001	0.017
D4	stream	0.001	Drift	<0.001	0.001
D5	pond	0.001	Drift	0.001	0.015
D5	stream	<0.001	Drift	<0.001	0.001
R1	pond	0.001	Run-off	0.001	0.105
R1	stream	<0.001	Run-off	<0.001	0.001
R2	stream	<0.001	Run-off	<0.001	0.002
R3	stream	<0.001	Run-off	<0.001	0.007
R4	stream	<0.001	Run-off	<0.001	0.003

**Table 8.9-11554:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to pome/stone fruits (Early application 1 x 1590 g/ha between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-11655:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to pome/stone fruits (Early application 1 x 1590 g/ha between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.037
D4	pond	0.001	Drift	0.001	0.017
D4	stream	<0.001	Drift	<0.001	0.001
D5	pond	0.001	Drift	0.001	0.016
D5	stream	<0.001	Drift	<0.001	0.001
R1	pond	<0.001	Run-off	<0.001	0.014
R1	stream	<0.001	Run-off	<0.001	0.005
R2	stream	<0.001	Run-off	<0.001	0.003
R3	stream	<0.001	Run-off	<0.001	0.011
R4	stream	<0.001	Run-off	<0.001	0.004

**Table 8.9-11756:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to sunflower (1 x 1183 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.015
D4*	pond	0.002	Drift	0.001	0.016
D4*	stream	0.007	Drift	<0.001	0.008
D5	pond	0.001	Drift	0.001	0.014
D5	stream	0.001	Drift	<0.001	0.002
R1	pond	0.008	Run-off	0.007	0.105
R1	stream	0.023	Run-off	0.002	0.201
R3	stream	0.020	Run-off	0.001	0.108
R4	stream	0.027	Run-off	0.005	0.161

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that drainage scenarios D3, D4 are not available for sunflower in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenarios D3, D4 considering all input data as for winter cereals



**Table 8.9-11857: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to sunflower (1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that drainage scenarios D3, D4 are not available for sunflower in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenarios D3, D4 considering all input data as for winter cereals

**Table 8.9-11958: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to sunflower (1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.028
D4*	pond	<0.001	Drift	<0.001	0.012
D4*	stream	<0.001	Drift	<0.001	0.011
D5	pond	<0.001	Drift	<0.001	0.014
D5	stream	<0.001	Drift	<0.001	0.003
R1	pond	0.001	Run-off	0.001	0.035
R1	stream	<0.001	Run-off	<0.001	0.114
R3	stream	<0.001	Run-off	<0.001	0.070
R4	stream	<0.001	Run-off	<0.001	0.107

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that drainage scenarios D3, D4 are not available for sunflower in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenarios D3, D4 considering all input data as for winter cereals

**Table 8.9-12059: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to soybeans (1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.021
D4*	pond	0.002	Drift	0.001	0.016
D4*	stream	0.007	Drift	<0.001	0.004
R1*	pond	0.007	Run-off	0.006	0.082
R1*	stream	0.021	Run-off	0.002	0.096
R3	stream	0.019	Run-off	0.002	0.079
R4	stream	0.031	Run-off	0.003	0.236

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4, R1 are not available for soybeans in programs used for modelling, the surrogate crop was proposed: legumes. Presented calculation was done for legumes, for scenarios D3, D4, R1 considering all input data as for legumes.

**Table 8.9-12160: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to soybeans (1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
R1*	pond	<0.001	Run-off	<0.001	<0.001
R1*	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4, R1 are not available for soybeans in programs used for modelling, the surrogate crop was proposed: legumes. Presented calculation was done for legumes, for scenarios D3, D4, R1 considering all input data as for legumes.

**Table 8.9-12261: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to soybeans (1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.028
D4*	pond	0.001	Drift	0.001	0.016
D4*	stream	<0.001	Drift	<0.001	0.001
R1*	pond	0.001	Run-off	0.001	0.029
R1*	stream	<0.001	Run-off	<0.001	0.058

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R3	stream	<0.001	Run-off	<0.001	0.041
R4	stream	<0.001	Run-off	<0.001	0.145

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenarios D3, D4, R1 are not available for soybeans in programs used for modelling, the surrogate crop was proposed: legumes. Presented calculation was done for legumes, for scenarios D3, D4, R1 considering all input data as for legumes.

**Table 8.9-12362: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to bulb vegetables (1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.035
D4	pond	0.002	Drift	0.002	0.022
D4	stream	0.010	Drift	0.001	0.006
D6 1 <sup>st</sup>	ditch	0.021	Drift	0.001	0.019
D6 2 <sup>nd</sup>	ditch	0.041	Drift	0.005	0.107
R1	pond	0.011	Run-off	0.009	0.134
R1	stream	0.029	Run-off	0.002	0.272
R2	stream	0.010	Run-off	0.002	0.787
R3	stream	0.027	Run-off	0.002	0.091
R4	stream	0.037	Run-off	0.006	0.373

**Table 8.9-12463: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to bulb vegetables (1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D6 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	<0.001
D6 2 <sup>nd</sup>	ditch	0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-12564: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to bulb vegetables (1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.045
D4	pond	0.001	Drift	0.001	0.023
D4	stream	<0.001	Drift	<0.001	0.002
D6 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	0.026
D6 2 <sup>nd</sup>	ditch	0.004	Drift	0.003	0.131
R1	pond	0.001	Run-off	0.001	0.044
R1	stream	<0.001	Run-off	<0.001	0.147
R2	stream	<0.001	Run-off	<0.001	0.462
R3	stream	<0.001	Run-off	<0.001	0.046
R4	stream	<0.001	Run-off	<0.001	0.239

**Table 8.9-12665: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to beans (1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	0.011	Drift	0.001	0.058
D2	stream	0.007	Drift	<0.001	0.005
D3	ditch	<0.001	Drift	<0.001	0.033
D4	pond	0.002	Drift	0.001	0.022
D4	stream	0.007	Drift	<0.001	0.004
D6 1 <sup>st</sup>	ditch	0.017	Drift	<0.001	0.017
D6 2 <sup>nd</sup>	ditch	0.023	Drift	0.002	0.080
R1	pond	0.011	Run-off	0.010	0.131
R1	stream	0.029	Run-off	0.003	0.246
R2	stream	0.011	Run-off	0.002	0.823
R3	stream	0.027	Run-off	0.002	0.136
R4	stream	0.037	Run-off	0.006	0.220

**Table 8.9-12766:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to beans (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	<0.001	Drift	<0.001	<0.001
D2	stream	0.001	Drift	<0.001	<0.001
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D6 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	<0.001
D6 2 <sup>nd</sup>	ditch	0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-12867:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to beans (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	0.001	Drift	<0.001	0.098
D2	stream	0.001	Drift	<0.001	0.007
D3	ditch	<0.001	Drift	<0.001	0.047
D4	pond	0.001	Drift	0.001	0.022
D4	stream	<0.001	Drift	<0.001	0.002
D6 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	0.025
D6 2 <sup>nd</sup>	ditch	0.003	Drift	0.001	0.088
R1	pond	0.001	Run-off	0.001	0.044
R1	stream	<0.001	Run-off	<0.001	0.147
R2	stream	<0.001	Run-off	<0.001	0.467
R3	stream	<0.001	Run-off	<0.001	0.086
R4	stream	<0.001	Run-off	<0.001	0.156

**Table 8.9-12968:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to carrots, parsley, parsnip and fennel (root vegetables 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.035
D4*	pond	0.002	Drift	0.002	0.018
D4*	stream	0.010	Drift	0.001	0.006
D6	ditch	0.013	Drift	<0.001	0.017
R1	pond	0.010	Run-off	0.009	0.128
R1	stream	0.028	Run-off	0.002	0.455
R2 1 <sup>st</sup>	stream	0.010	Run-off	0.002	0.833
R2 2 <sup>nd</sup>	stream	0.008	Run-off	0.002	2.309
R3	stream	0.028	Run-off	0.003	0.116
R4	stream	0.037	Run-off	0.006	0.381

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenario D4 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-13069:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to carrots, parsley, parsnip and fennel (root vegetables 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	<0.001
R2 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenario D4 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-13170: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to carrots, parsley, parsnip and fennel (root vegetables 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.045
D4*	pond	0.001	Drift	0.001	0.019
D4*	stream	<0.001	Drift	<0.001	0.003
D6	ditch	<0.001	Drift	<0.001	0.026
R1	pond	0.001	Run-off	0.001	0.044
R1	stream	<0.001	Run-off	<0.001	0.265
R2 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	0.471
R2 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	1.306
R3	stream	<0.001	Run-off	<0.001	0.070
R4	stream	<0.001	Run-off	<0.001	0.242

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D4 is not available for root vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenario D4 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-13274: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to lupine (legumes, 1 x 1183 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.021
D4	pond	0.002	Drift	0.001	0.016
D4	stream	0.007	Drift	<0.001	0.004
D5	pond	0.001	Drift	0.001	0.015
D5	stream	0.001	Drift	<0.001	0.001
D6	ditch	0.011	Drift	<0.001	0.028
R1	pond	0.007	Run-off	0.006	0.082
R1	stream	0.021	Run-off	0.002	0.096
R2	stream	0.007	Run-off	0.001	0.320
R3	stream	0.016	Run-off	0.001	1.479
R4	stream	0.027	Run-off	0.004	0.719

**Table 8.9-13372:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to lupine (legumes, 1 x 1183 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-13473:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to lupine (legumes, 1 x 1183 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.028
D4	pond	0.001	Drift	0.001	0.016
D4	stream	<0.001	Drift	<0.001	0.001
D5	pond	<0.001	Drift	0.001	0.014
D5	stream	<0.001	Drift	<0.001	0.001
D6	ditch	0.001	Drift	<0.001	0.040
R1	pond	0.001	Run-off	0.001	0.029
R1	stream	<0.001	Run-off	<0.001	0.058
R2	stream	<0.001	Run-off	<0.001	0.170
R3	stream	<0.001	Run-off	<0.001	0.977
R4	stream	<0.001	Run-off	<0.001	0.447



**Table 8.9-13574:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to winter oilseed rape use no. 14 (1 x 455 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	0.004	Drift	0.004	0.051
D2	stream	0.003	Drift	0.003	0.042
D3	ditch	0.003	Drift	0.002	0.033
D4	pond	0.001	Drift	<0.001	0.005
D4	stream	0.003	Drift	<0.001	0.003
D5	pond	<0.001	Drift	<0.001	0.004
D5	stream	0.001	Drift	<0.001	0.004
R1	pond	0.002	Run-off	0.002	0.020
R1	stream	0.008	Run-off	<0.001	0.014
R3	stream	0.006	Run-off	0.001	0.030

**Table 8.9-13675:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to winter oilseed rape use no. 14 (1 x 455 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	<0.001	Drift	<0.001	<0.001
D2	stream	<0.001	Drift	<0.001	<0.001
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-13776:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to winter oilseed rape use no. 14 (1 x 455 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	0.003	Drift	0.002	0.051
D2	stream	0.002	Drift	0.002	0.044

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	0.002	Drift	0.001	0.037
D4	pond	<0.001	Drift	<0.001	0.004
D4	stream	<0.001	Drift	<0.001	0.005
D5	pond	<0.001	Drift	<0.001	0.004
D5	stream	<0.001	Drift	<0.001	0.007
R1	pond	<0.001	Run-off	<0.001	0.007
R1	stream	<0.001	Run-off	<0.001	0.009
R3	stream	<0.001	Run-off	<0.001	0.023

**Table 8.9-13877:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to winter oilseed rape use no. 15 (1 x 910 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	0.006	Drift	0.001	0.054
D2	stream	0.004	Drift	0.001	0.045
D3	ditch	<0.001	Drift	<0.001	0.022
D4	pond	0.001	Drift	<0.001	0.012
D4	stream	0.006	Drift	<0.001	0.006
D5	pond	<0.001	Drift	<0.001	0.008
D5	stream	0.001	Drift	<0.001	0.007
R1	pond	0.004	Run-off	0.003	0.045
R1	stream	0.018	Run-off	0.001	0.056
R3	stream	0.014	Run-off	0.002	0.557

**Table 8.9-13978:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to winter oilseed rape use no. 15 (1 x 910 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	<0.001	Drift	<0.001	<0.001
D2	stream	0.001	Drift	<0.001	<0.001
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-14079:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to winter oilseed rape use no. 15 (1 x 910 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D2	ditch	0.003	Drift	0.001	0.093
D2	stream	0.002	Drift	0.001	0.081
D3	ditch	<0.001	Drift	<0.001	0.039
D4	pond	<0.001	Drift	<0.001	0.009
D4	stream	<0.001	Drift	<0.001	0.009
D5	pond	<0.001	Drift	<0.001	0.008
D5	stream	<0.001	Drift	<0.001	0.014
R1	pond	<0.001	Run-off	<0.001	0.018
R1	stream	<0.001	Run-off	<0.001	0.036
R3	stream	<0.001	Run-off	<0.001	0.403

**Table 8.9-14180:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	0.035
D3 2 <sup>nd</sup>	ditch	0.001	Drift	<0.001	0.045
D4	pond	0.002	Drift	0.002	0.018
D4	stream	0.010	Drift	0.001	0.006
D6	ditch	0.029	Drift	0.002	0.087
R1 1 <sup>st</sup>	pond	0.017	Run-off	0.016	0.190
R1 2 <sup>nd</sup>	pond	0.018	Run-off	0.017	0.229
R1 1 <sup>st</sup>	stream	0.028	Run-off	0.003	0.973
R1 2 <sup>nd</sup>	stream	0.029	Run-off	0.003	0.299
R2 1 <sup>st</sup>	stream	0.010	Run-off	0.002	0.808
R2 2 <sup>nd</sup>	stream	0.008	Run-off	0.002	1.433

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R3 1 <sup>st</sup>	stream	0.027	Run-off	0.003	0.254
R3 2 <sup>nd</sup>	stream	0.020	Run-off	0.002	0.175
R4 1 <sup>st</sup>	stream	0.036	Run-off	0.005	0.445
R4 2 <sup>nd</sup>	stream	0.039	Run-off	0.004	0.599

**Table 8.9-14281:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	<0.001
D3 2 <sup>nd</sup>	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	0.001	Drift	<0.001	<0.001
R1 1 <sup>st</sup>	pond	<0.001	Run-off	<0.001	<0.001
R1 2 <sup>nd</sup>	pond	<0.001	Run-off	<0.001	<0.001
R1 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	<0.001
R1 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	<0.001
R2 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	<0.001
R2 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	<0.001
R3 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	<0.001
R3 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	<0.001
R4 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	<0.001
R4 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-14382:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to asparagus, brassicas, leek, lettuce, endive, artichoke 1<sup>st</sup> and 2<sup>nd</sup> crop (leafy vegetables 1<sup>st</sup> and 2<sup>nd</sup> crop, 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	0.045
D3 2 <sup>nd</sup>	ditch	<0.001	Drift	<0.001	0.066
D4	pond	0.001	Drift	0.001	0.019
D4	stream	<0.001	Drift	<0.001	0.003

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D6	ditch	0.003	Drift	0.001	0.094
R1 1 <sup>st</sup>	pond	0.001	Run-off	0.001	0.055
R1 2 <sup>nd</sup>	pond	0.002	Run-off	0.002	0.088
R1 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	0.549
R1 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	0.177
R2 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	0.453
R2 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	0.836
R3 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	0.123
R3 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	0.100
R4 1 <sup>st</sup>	stream	<0.001	Run-off	<0.001	0.237
R4 2 <sup>nd</sup>	stream	<0.001	Run-off	<0.001	0.362

**Table 8.9-14483:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to strawberry (fruiting vegetables 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.026
D4*	pond	0.002	Drift	0.001	0.013
D4*	stream	0.008	Drift	<0.001	0.005
D6	ditch	0.013	Drift	<0.001	0.018
R1*	pond	0.013	Run-off	0.012	0.143
R1*	stream	0.021	Run-off	0.002	0.743
R2	stream	0.008	Run-off	0.001	2.586
R3	stream	0.019	Run-off	0.002	0.077
R4	stream	0.029	Run-off	0.005	0.754

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for fruiting vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-14584:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to strawberry (fruiting vegetables 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D6	ditch	<0.001	Drift	<0.001	<0.001
R1*	pond	<0.001	Run-off	<0.001	<0.001
R1*	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for fruiting vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-14685: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to strawberry (fruiting vegetables 1 x 1590 g/ha, between rows)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.034
D4*	pond	<0.001	Drift	<0.001	0.014
D4*	stream	<0.001	Drift	<0.001	0.002
D6	ditch	<0.001	Drift	<0.001	0.026
R1*	pond	0.001	Run-off	0.001	0.041
R1*	stream	<0.001	Run-off	<0.001	0.419
R2	stream	<0.001	Run-off	<0.001	1.649
R3	stream	<0.001	Run-off	<0.001	0.041
R4	stream	<0.001	Run-off	<0.001	0.460

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for fruiting vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-14786: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to raspberry (vines early application 1 x 1365 g/ha between rows)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.023
D4*	pond	0.001	Drift	0.001	0.019
D4*	stream	0.001	Drift	<0.001	0.001
D6	ditch	0.004	Drift	0.002	0.080
R1	pond	0.001	Run-off	0.001	0.016
R1	stream	<0.001	Run-off	<0.001	0.002

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R2	stream	<0.001	Run-off	<0.001	0.002
R3	stream	<0.001	Run-off	<0.001	0.005
R4	stream	<0.001	Run-off	<0.001	0.002

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-14887: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to raspberry (vines early application 1 x 1365 g/ha between rows)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-14988: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to raspberry (vines early application 1 x 1365 g/ha between rows)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.032
D4*	pond	0.001	Drift	0.001	0.018
D4*	stream	<0.001	Drift	<0.001	0.001
D6	ditch	0.004	Drift	0.002	0.141
R1	pond	<0.001	Run-off	<0.001	0.016
R1	stream	<0.001	Run-off	<0.001	0.004
R2	stream	<0.001	Run-off	<0.001	0.003
R3	stream	<0.001	Run-off	<0.001	0.008
R4	stream	<0.001	Run-off	<0.001	0.003

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15089:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to currants and grapevines (vines, early application, 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.028
D4*	pond	0.001	Drift	0.001	0.017
D4*	stream	0.001	Drift	<0.001	0.001
D6	ditch	0.004	Drift	0.002	0.073
R1	pond	0.001	Run-off	0.001	0.014
R1	stream	<0.001	Run-off	<0.001	0.003
R2	stream	<0.001	Run-off	<0.001	0.002
R3	stream	<0.001	Run-off	<0.001	0.007
R4	stream	<0.001	Run-off	<0.001	0.003

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15190:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to currants and grapevines (vines, early application, 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001



\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15291:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to currants and grapevines (vines, early application, 1 x 1590 g/ha, between rows)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.037
D4*	pond	0.001	Drift	0.001	0.017
D4*	stream	<0.001	Drift	<0.001	0.001
D6	ditch	0.003	Drift	0.002	0.126
R1	pond	<0.001	Run-off	<0.001	0.014
R1	stream	<0.001	Run-off	<0.001	0.005
R2	stream	<0.001	Run-off	<0.001	0.003
R3	stream	<0.001	Run-off	<0.001	0.010
R4	stream	<0.001	Run-off	<0.001	0.004

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15392:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to potato (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.032
D4	pond	0.002	Drift	0.002	0.017
D4	stream	0.011	Drift	0.001	0.007
D6 1 <sup>st</sup>	ditch	0.020	Drift	<0.001	0.017
D6 2 <sup>nd</sup>	ditch	0.027	Drift	0.001	0.065
R1	pond	0.011	Run-off	0.009	0.133
R1	stream	0.030	Run-off	0.003	0.211
R2	stream	0.010	Run-off	0.001	3.447
R3	stream	0.028	Run-off	0.003	0.202

**Table 8.9-15493:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to potato (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001
D4	stream	<0.001	Drift	<0.001	<0.001
D6 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	<0.001
D6 2 <sup>nd</sup>	ditch	0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001

**Table 8.9-15594:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to potato (1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3	ditch	<0.001	Drift	<0.001	0.050
D4	pond	0.001	Drift	0.001	0.018
D4	stream	<0.001	Drift	<0.001	0.003
D6 1 <sup>st</sup>	ditch	<0.001	Drift	<0.001	0.025
D6 2 <sup>nd</sup>	ditch	0.002	Drift	0.001	0.074
R1	pond	0.001	Run-off	0.001	0.045
R1	stream	<0.001	Run-off	<0.001	0.128
R2	stream	<0.001	Run-off	<0.001	2.198
R3	stream	<0.001	Run-off	<0.001	0.128

**Table 8.9-15695:** FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to ornamentals (vines, early application, 1 x 1590 g/ha)

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.037
D4*	pond	0.001	Drift	0.001	0.023
D4*	stream	0.001	Drift	<0.001	0.001
D6	ditch	0.005	Drift	0.003	0.097

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R1	pond	0.001	Run-off	0.001	0.018
R1	stream	<0.001	Run-off	<0.001	0.004
R2	stream	<0.001	Run-off	<0.001	0.003
R3	stream	<0.001	Run-off	<0.001	0.009
R4	stream	<0.001	Run-off	<0.001	0.003

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15796: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to ornamentals (vines, early application, 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1	pond	<0.001	Run-off	<0.001	<0.001
R1	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001
R4	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15897: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to ornamentals (vines, early application, 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.049
D4*	pond	0.001	Drift	0.001	0.023
D4*	stream	<0.001	Drift	<0.001	0.002
D6	ditch	0.005	Drift	0.002	0.168
R1	pond	<.001	Run-off	0.001	0.019
R1	stream	<0.001	Run-off	<0.001	0.006
R2	stream	<0.001	Run-off	<0.001	0.004

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
R3	stream	<0.001	Run-off	<0.001	0.014
R4	stream	<0.001	Run-off	<0.001	0.005

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4 is not available for vines in programs used for modelling, the surrogate crop was proposed: pome/stone fruit early application. Presented calculation was done for pome/stone fruit early application, for scenario D3, D4 considering all input data as for pome/stone fruit early application .

**Table 8.9-15998: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to clover alfalfa (grass, 1 x 1000 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	0.004	Drift	0.004	0.076
D1	stream	<0.001	Drift	<0.001	0.001
D2	ditch	0.006	Drift	0.006	0.103
D2	stream	0.004	Drift	0.004	0.076
D3	ditch	<0.001	Drift	<0.001	0.027
D4	pond	0.001	Drift	0.001	0.014
D4	stream	<0.001	Drift	<0.001	0.001
D5	pond	0.001	Drift	0.001	0.013
D5	stream	<0.001	Drift	<0.001	0.001
R1*	pond	0.003	Run-off	0.003	0.031
R1*	stream	0.013	Run-off	0.001	0.111
R2	stream	0.003	Run-off	<0.001	0.004
R3	stream	0.008	Run-off	<0.001	0.012

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario R1 is not available for vines in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenario R1 considering all input data as for winter cereals.

**Table 8.9-16099: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to clover alfalfa (grass, 1 x 1000 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	<0.001	Drift	0.001	<0.001
D1	stream	<0.001	Drift	<0.001	<0.001
D2	ditch	<0.001	Drift	<0.001	<0.001
D2	stream	0.001	Drift	<0.001	<0.001
D3	ditch	<0.001	Drift	<0.001	<0.001
D4	pond	<0.001	Drift	<0.001	<0.001

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D4	stream	<0.001	Drift	<0.001	<0.001
D5	pond	<0.001	Drift	<0.001	<0.001
D5	stream	<0.001	Drift	<0.001	<0.001
R1*	pond	<0.001	Run-off	<0.001	<0.001
R1*	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	<0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario R1 is not available for vines in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenario R1 considering all input data as for winter cereals.

**Table 8.9-16100: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to clover alfalfa (grass, 1 x 1000 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D1	ditch	0.003	Drift	0.003	0.079
D1	stream	<0.001	Drift	<0.001	0.002
D2	ditch	0.004	Drift	0.003	0.112
D2	stream	0.003	Drift	0.002	0.084
D3	ditch	<0.001	Drift	<0.001	0.035
D4	pond	<0.001	Drift	<0.001	0.014
D4	stream	<0.001	Drift	<0.001	0.001
D5	pond	<0.001	Drift	<0.001	0.013
D5	stream	<0.001	Drift	<0.001	0.001
R1*	pond	<0.001	Run-off	<0.001	0.016
R1*	stream	<0.001	Run-off	<0.001	0.067
R2	stream	<0.001	Run-off	<0.001	0.003
R3	stream	<0.001	Run-off	<0.001	0.014

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario R1 is not available for vines in programs used for modelling, the surrogate crop was proposed: winter cereals. Presented calculation was done for winter cereals, for scenario R1 considering all input data as for winter cereals.

**Table 8.9-16201: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H033 following single application to cucurbits (fruiting vegetables 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.035
D4*	pond	0.002	Drift	0.002	0.018
D4*	stream	0.010	Drift	0.001	0.006
D6	ditch	0.017	Drift	<0.001	0.024
R1*	pond	0.017	Run-off	0.016	0.190
R1*	stream	0.028	Run-off	0.003	0.973
R2	stream	0.011	Run-off	0.001	3.420
R3	stream	0.026	Run-off	0.003	0.102
R4	stream	0.039	Run-off	0.006	0.988

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for cucurbits vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-16302: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H032 following single application to cucurbits (fruiting vegetables 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominat entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	<0.001
D4*	pond	<0.001	Drift	<0.001	<0.001
D4*	stream	<0.001	Drift	<0.001	<0.001
D6	ditch	<0.001	Drift	<0.001	<0.001
R1*	pond	<0.001	Run-off	<0.001	<0.001
R1*	stream	<0.001	Run-off	<0.001	<0.001
R2	stream	<0.001	Run-off	<0.001	<0.001
R3	stream	0.001	Run-off	<0.001	<0.001
R4	stream	0.001	Run-off	<0.001	<0.001

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for cucurbits vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

**Table 8.9-16403: FOCUS Step 3 PEC<sub>sw</sub> and PEC<sub>sed</sub> for metabolite M455H029 following single application to cucurbits (fruiting vegetables 1 x 1590 g/ha)**

Scenario FOCUS	Waterbody	Max PEC <sub>sw</sub> (µg/L)	Dominant entry route	21 d- PEC <sub>sw, twa</sub> (µg/L)	Max PEC <sub>sed</sub> (µg/kg)
D3*	ditch	<0.001	Drift	<0.001	0.045
D4*	pond	0.001	Drift	0.001	0.019
D4*	stream	<0.001	Drift	<0.001	0.003
D6	ditch	<0.001	Drift	<0.001	0.035
R1*	pond	0.001	Run-off	0.001	0.055
R1*	stream	<0.001	Run-off	<0.001	0.549
R2	stream	<0.001	Run-off	<0.001	2.181
R3	stream	<0.001	Run-off	<0.001	0.054
R4	stream	<0.001	Run-off	<0.001	0.603

\*National scenarios relevant for Poland are D3, D4 and R1. Due to fact that scenario D3, D4, R1 are not available for cucurbits vegetables in programs used for modelling, the surrogate crop was proposed: vegetables leafy 1<sup>st</sup>. Presented calculation was done for vegetables leafy 1<sup>st</sup>, for scenarios D3,D4, R1 considering all input data as for vegetables leafy 1<sup>st</sup>.

### 8.9.2.2 PEC<sub>sw/sed</sub> of PENSHUI

The PEC<sub>sw</sub> for PENSHUI was calculated using the following equation:

$$PEC_{sw} (\mu g/L) = \frac{\%Drift_{90th\ \%ile} \times Application\ rate\ (g/ha)}{Water\ depth\ (cm) \times 10}$$

The maximum application rate (3.5 L fp/ha) of PENSHUI is given in the table below taking into account a density of 1.1705 g/cm<sup>3</sup>. The depth of the static water body was assumed to be 30 cm. The resulting maximum instantaneous PEC<sub>sw</sub> value is presented in the table below.

**Table 8.9-16504: PEC<sub>sw</sub> for PENSHUI following single application to different crops**

Crop	Application rate (g f.p./ha)	Distance (m)	Drift (%)	Max PEC <sub>sw</sub> (µg/L)	Nozzles (%)		
					50	75	90
Maximum application rate for all crops	1 x 4096.8	1	2.77	37.827	18.914	9.457	3.783
		5	0.57	7.784	3.892	1.946	0.778
		10	0.29	3.960	1.980	0.990	0.396
		15	0.2	2.731	1.366	0.683	0.273
		20	0.15	2.048	1.024	0.512	0.205

The PEC<sub>sed</sub> for PENSHUI was calculated using the following equation:

$$PEC_{sed} (\mu g/kg\ dw) = \frac{\%Drift_{90th\ \%ile} \times Application\ rate\ (g/ha) \times \% \text{ of Lambda-cyhalothrin in sediment}}{1000 \times Sediment\ density\ (g/cm^3) \times Sediment\ height\ (cm)}$$

The maximum application rate (3.54.3 L fp/ha, between rows) of PENSHUI are given in the tables below taking into account a density of 1.1705 g/cm<sup>3</sup>. The maximum percentage of Pendimethalin in the sediment is 86%, but the content in the formulated product is 45.5%, thus the actual percentage in sediment is  $45.5 \times 0.86 = 39.13\%$ . The height of the sediment was assumed to be 5 cm and the sediment density was assumed to be 1.3 g/cm<sup>3</sup>. The resulting maximum instantaneous PEC<sub>sed</sub> value is presented in the tables below.

**Table 8.9-16605: PEC<sub>sed</sub> for PENSHUI following single application to different crops**

Crop	Application rate (g f.p./ha)	Distance (m)	Drift (%)	% in sediment	Max PEC <sub>sed</sub> (µg/kg)
Maximum application rate for field crops	1 x 4096.8	1	2.77	$\frac{39.13}{86}$	$\frac{68.32}{150.14}$

**zRMS comments:**

Evaluator agrees with modelling carried out by applicant.

The input parameters for surface water calculation were established in the EU reviews (EFSA Journal EFSA Journal 2016;14(3):4420)

Interception was appropriate to the proposed BBCH of crops (EFSA guidance was published, (2014;12(5):3662).

In simulations PUF value of 0 was assumed for all compounds, in line with recommendations of the most recent version of the FOCUS Groundwater Guidance. The geomean of the DT50 and Kfoc values were used in modelling.

The calculations PEC<sub>sw/sed</sub> at STEP 4 according to the Austrian Environmental Agency (AGES) for 5 and 15 meters of vegetative buffer strip should be considered at national level.

The calculations for uses between rows treated area have been carry out for applications 5, 6, 7, 18, 19, 20, 26 with 75% application rate should be considered at national level also.

Nevertheless, additional simulations may be required by the SMS that do not accept calculations performed using Focus models.

The predicted concentrations in surface water and sediment of pendimethalin and its metabolites are appropriate to be used for the subsequent risk assessment for aquatic organisms.

PL: see part A

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

**Table 8.10-1: Summary of atmospheric degradation and behaviour for Pendimethalin**

Compound	Pendimethalin
Direct photolysis in air	Not required
Quantum yield of direct phototransformation	-
Photochemical oxidative degradation in air	DT50 (h): 4.2 derived by the Atkinson model (APOWIN version 1.88) OH (12h) concentration assumed = $1.5 \times 10^6$ mol/cm <sup>3</sup>



Volatilisation	From plant surfaces (BBA guideline): < 4% after 24h From soil surfaces (BBA guideline): < 6% after 24h Vapour pressure (Pa): $1.39 \times 10^{-3}$ (20°C) Henry's Law Constant (Pa.m <sup>3</sup> /mol): $1.27 \times 10^{-3}$ (25°C)
Metabolites	None

The vapour pressure at 20 °C of the active substance Pendimethalin is  $> 10^{-4}$  Pa. Hence the active substance Pendimethalin is regarded as volatile (volatilisation from soil and plant surfaces). Therefore, exposure of adjacent surface waters and terrestrial ecosystems by the active substance Pendimethalin due to volatilization with subsequent deposition should be considered.

**zRMS comments:**

Accepted.

**Appendix 1   Lists of data considered in support of the evaluation**

**Appendix 2   Detailed evaluation of the new Annex II studies**

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