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Document Title

Summary of the fate and behaviour in the environment Propineb WG 70 (700g/kg)

Data Requirements

EU Regulation 1107/2009 & EU Regulation 284/2013
Document MCP
Section 9: Fate and behaviour in the environment

According to the guidance document, SANCO 10181/2013, for preparing dossiers for the approval of a chemical active substance

Date

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Version history

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

[1] It is suggested that applicants adopt a similar approach to showing revisions and version history as outlined in SANCO/10180/2013 Chapter 4 How to revise an Assessment Report

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CP 9 FATE AND BEHAVIOUR IN THE ENVIRONMENT

Use patterns considered in this risk assessment

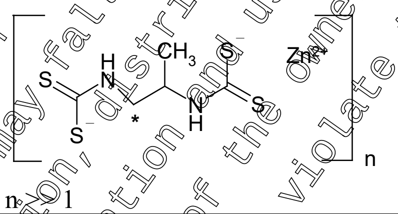
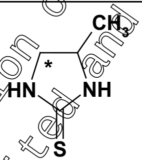
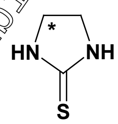
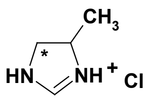
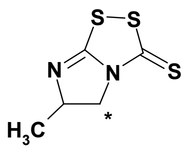
Table 9- 1: Intended application patterns

Crop	Timing of application (range)	Number of applications	Application interval [days]	Maximum label rate (range) [kg/ha]	Maximum application rate, individual treatment (ranges) [kg a.s./ha] propineb
Orchards (Apple)	BBCH 40-59 BBCH 60-73	1 1	14	2.25	1.575
Grapes I	BBCH 40-59	2	10	1.6	1.12
Grapes II	BBCH >70	2	10	2.0	1.4
Tomato (greenhouse use)	-	4	7	3.0	2.1

Compounds addressed in this document

In addition to the active substance propineb, the degradation products summarised in Table 9- 2 were addressed in this document as they were major in environmental fate studies.

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

Compound / Codes	Chemical Structure	Considered for
propineb [propane-1-^{14}C] labeling position was used a.s.		PEC_{soil} PEC_{gw} PEC_{sw} & PEC_{sed}
PTU (BCS-AA66386): [Propane-1-^{14}C] labeling position		PEC_{soil} PEC_{gw} PEC_{sw} & PEC_{sed}
PU (BCS-AA17927): [propane-1-^{14}C] labeling position		PEC_{soil} PEC_{gw} PEC_{sw}
4-Methyl-imidazoline hydrochloride (BCS-CT29489): [Propane-1-^{14}C] labeling position was used		PEC_{soil} PEC_{gw} PEC_{sw}
Propineb-DIDT (BCS-CU99534) [Propane-1-^{14}C] labeling position was used		PEC_{soil} PEC_{gw} PEC_{sw}

Definition of the residue for risk assessment

Justification for the residue definition for risk assessment is provided in MCA Section 7, Point 7.4.1 and MCA Section 6, Point 6.7.1.

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

Compartment	Residue Definition
Soil	Propineb (LH 30/Z) 4-Methyl-imidazoline (BCS-AB78877) Propineb-DIDT (BCS-CU99534) PTU (BCS-AA-66386) PU (BCS-AA17927)
Groundwater	Propineb (LH 30/Z) 4-Methyl-imidazoline (BCS-AB78877) Propineb-DIDT (BCS-CU99534) PTU (BCS-AA-66386) PU (BCS-AA17927)
Surface water	Propineb (LH 30/Z) 4-Methyl-imidazoline (BCS-AB78877) Propineb-DIDT (BCS-CU99534) PTU (BCS-AA-66386) PU (BCS-AA17927)
Sediment	Propineb (LH 30/Z)
Air	Propineb (LH 30/Z)

CP 9.1 Fate and behaviour in soil

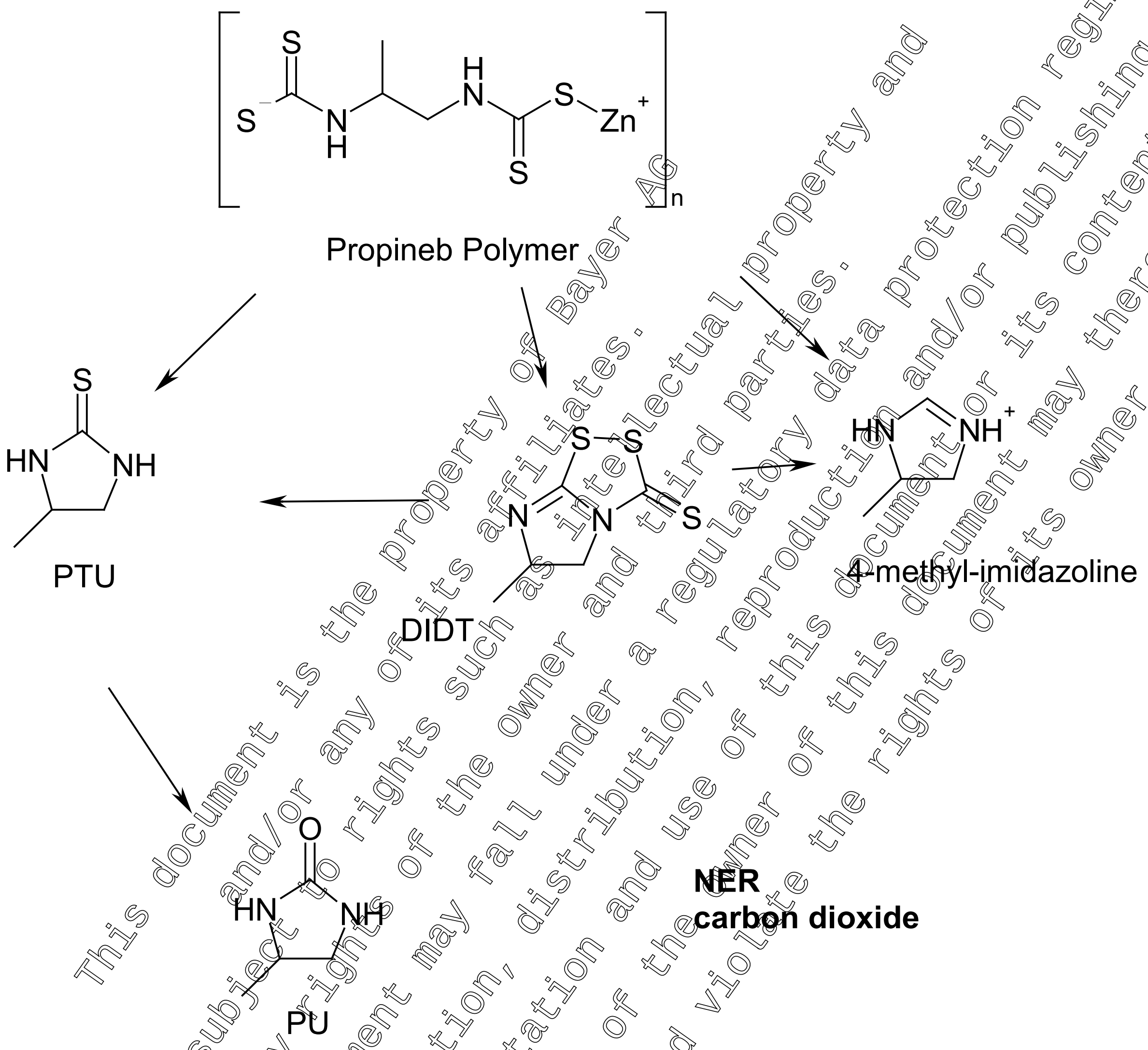
For information on the fate and behaviour in soil please refer to MCA Section 7, data point 7.1.

CP 9.1.1 Rate of degradation in soil

The proposed degradation pathway of propineb in soil is shown in Figure 9.1.1- 1.

For further information on the fate and behaviour in soil please refer to MCA Section 7, data points 7.1.1 and 7.1.2.

Figure 9.1.1- 1: Proposed degradation pathway of Propineb in soil



Remark: NER and carbon dioxide formation can result from all structures shown (either directly or indirectly).

CP 9.1.1.1 Laboratory studies

For information on laboratory studies please refer to MCA Section 7, data point 7.1.2.1.

CP 9.1.1.2 Field studies

For information on field studies please refer to MCA Section 7, data point 7.1.2.2.

CP 9.1.1.2.1 Soil dissipation studies

For information on field dissipation studies please refer to MCA Section 7, data point 7.1.2.2.1.

CP 9.1.1.2.2 Soil accumulation studies

For information on field accumulation studies please refer to MCA Section 7, data point 7.1.2.2.2.

CP 9.1.2 Mobility in the soil

For information on mobility studies please refer to MCA Section 7, data point 7.1.4.

CP 9.1.2.1 Laboratory studies

For information on laboratory studies please refer to MCA Section 7, data point 7.1.4.1

CP 9.1.2.2 Lysimeter studies

For information on lysimeter studies please refer to MCA Section 7, data point 7.1.4.2.

CP 9.1.2.3 Field leaching studies

For information on field leaching studies please refer to MCA Section 7, data point 7.1.4.3.

CP 9.1.3 Estimation of concentrations in soil

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

Predicted environmental concentrations in soil (PEC_s)

Endpoints for PEC_{soil}

Table 9.1.3- 1: Modelling input parameters for propineb and its metabolites

Endpoint	Propineb and metabolites Value used for modelling
Propineb	
DT_{50} [days] (worst-case DT_{50})	8.1
PTU	
DT_{50} [days] (worst-case DT_{50})	3.7
Maximum occurrence [%]	33.7
Molecular mass correction	0.401
PU	
DT_{50} [days] (worst-case DT_{50})	46.5 (Non-referenced)
Maximum occurrence [%]	42.5
Molecular mass correction	0.3458
4-MI	
DT_{50} [days] (worst-case DT_{50})	2.8 [A]
Maximum occurrence [%]	17.5
Molecular mass correction	0.2902
Propineb-DIDT	
DT_{50} [days] (worst-case DT_{50})	0.0848 [B]
Maximum occurrence [%]	25.8
Molecular mass correction	0.6567
[A] values were derived from kinetic pathway fits by [redacted] (2012) [B] best fit from DFOP model	

PEC_{soil} modelling approach

The predicted environmental concentrations in soil (PEC_{soil}) for the active substance propineb were calculated based on a simple first tier approach (Microsoft® Excel spreadsheet) assuming even distribution of the compound in the upper 0-5 cm soil layer. A standard soil density of 1.5 g/cm^3 was assumed.

Crop interception will reduce the amount of a compound reaching the soil and therefore this has been taken into account depending on the growth stage at application. The interception rates follow the recommendations of the FOCUS groundwater guidance paper (FOCUS 2002) for apples, tomatoes and vines (Table 9.2.4- 2).

Derivation of kinetic modelling input values for propineb and its major degradation products is presented in MCA Section 7, data point 7.1.2, a summary of modelling input parameters is given in the report KCP 9.1.3/01.

Predicted environmental concentrations in soil (PEC_S) of propineb and its major degradation products

For propineb, the major degradation products PTU, PU, 4-MI and propineb-DIDT were considered.

Report:	[redacted] ∃ *;[redacted];[redacted];2014;M-488190-01
Title:	PPB: PECsoil EUR - Use in apples, vines and tomatoes in Europe
Report No:	EnSa-14-0514
Document No:	M-488190-01-1
Guidelines:	EU Commission, 2000, Guidance Document on Persistence in Soil (Working Document), 9188/VI/97 rev.8 FOCUS 1997, Soil persistence models and EU registration FOCUS, 2002, Generic Guidance for FOCUS Groundwater Scenarios, Version 1.1
GLP/GEP:	**no**

Methods and Materials: The predicted environmental concentrations in soil (PEC_{soil}) of propineb and its major soil degradation products PTU, PU, 4-MI and propineb-DIDT were calculated based on a first tier approach using a Microsoft® Excel spreadsheet.
The use of propineb in apple, tomatoes and vine was assessed according to Good Agricultural Practice (GAP) under European cropping conditions. Detailed application data used for simulation of PEC_{soil} were compiled in Table 9.1.3- 2.
The calculated use in grapes is worst-case which covers both uses (grapes I and grapes II) presented in the GAP in Table 9-1.

Table 9.1.3- 2: Application pattern used for PEC_{soil} calculations of propineb

Individual Crop	FOCUS crop used for Interception	Application				Amount reaching the soil per application [g a.s./ha]
		Rate per Season [g a.s./ha]	Interval [days]	Plant Interception [%]	BBCH Stage	
Apples	Apples	2 × 1575	14	65 + 70	40 - 59 69 -73	551.25 + 472.5
Grapes [a]	Vines	2 × 1400	10	2 × 60	2 × 40 - 59	2 × 560
Tomatoes (green house)	Tomatoes	4 × 2100	7	50% + 70% + 80% + 80%	-	1050 + 630 + 420 + 420

[a] calculated use in grapes is worst-case and covers both actual uses grapes I and grapes II

Substance Specific Parameters: PEC_{soil} calculations were based on the DT_{50} of 8.1 days (worst case of laboratory studies) for the parent compound propineb. Further compound specific input parameters are summarized below.

Table 9.1.3- 3: Input parameters for PEC_{soil} for propineb and its major degradation products

Compound	DT_{50} [days]	Max. occurrence in soil [%]	Molar mass [g/mol]	Molar mass correction factor
Propineb	8.1	100	289.8	1
PTU	3.7	33.7	116.2	0.401
PU	46.5	42.5	100.2	0.3458
Propineb-DIDT	0.0848	25.8	190.3	0.2902
4-MI	2.8	17.5	84.1	0.6567

Findings: The maximum PEC_{soil} values for propineb and its major degradation products are summarised in Table 9.1.3- 4. Detailed PEC_{soil} and TWA_{soil} values for the individual uses are listed in Table 9.1.3- 5 to Table 9.1.3- 10.

Table 9.1.3- 4: Maximum PEC_{soil} of propineb and its degradation products for the uses assessed

Use pattern	Propineb	PTU	PU	Propineb-DIDT	4-MI
	PEC_{soil} [mg/kg]				
Apples, 2 × 1575 g a.s./ha	0.852	0.099	0.180	0.125	0.037
Vines, 2 × 1400 g a.s./ha	1.064	0.116	0.204	0.127	0.041
Tomatoes, 4 × 2100 g a.s./ha	1.609	0.189	0.407	0.237	0.071

Table 9.1.3- 5: PEC_{soil} of propineb and its degradation products for the use in <u>apples (2 × 1575 g a.s./ha, 65/70% interception, 14 d application interval)</u>

Substance		Propineb	PTU	PU	Propineb-DIDT	4-MI
Days after maximum		PEC_{soil} [mg/kg]				
Initial	0	0.852	0.099	0.180	0.125	0.037
Short-term	1	0.782	0.082	0.178	<0.001	0.029
	2	0.718	0.068	0.175	<0.001	0.023
	4	0.605	0.047	0.170	<0.001	0.014
Long-term	7	0.468	0.027	0.162	<0.001	0.007
	14	0.257	0.007	0.146	<0.001	0.001
	21	0.141	0.002	0.132	<0.001	<0.001
	28	0.078	<0.001	0.119	<0.001	<0.001
	42	0.023	<0.001	0.096	<0.001	<0.001
	50	0.012	<0.001	0.086	<0.001	<0.001
	100	<0.001	<0.001	0.041	<0.001	<0.001

Table 9.1.3- 6: TWA_{soil} of propineb and its degradation products for the use in <u>apples (2 × 1575 g a.s./ha, 65/70% interception, 14 d application interval)</u>

Substance		Propineb	PTU	PU	Propineb-DIDT	4-MI
Days after maximum		TWA_{soil} [mg/kg]				
Initial	0	-	-	-	-	-
Short-term	1	0.816	0.091	0.179	0.015	0.033
	2	0.783	0.083	0.178	0.008	0.029
	4	0.721	0.070	0.175	0.004	0.024
Long-term	7	0.641	0.055	0.171	0.002	0.018
	14	0.496	0.035	0.163	0.001	0.010
	21	0.395	0.025	0.155	< 0.001	0.007
	28	0.323	0.019	0.147	< 0.001	0.005
	42	0.230	0.013	0.134	< 0.001	0.004
	50	0.196	0.011	0.127	< 0.001	0.003
	100	0.100	0.005	0.094	< 0.001	0.002

Table 9.1.3- 7: PEC_{soil} of propineb and its degradation products for the use in <u>vines (2 × 1400 g a.s./ha, 2 × 60% interception, 10 d application interval)</u>

Substance		Propineb	PTU	PU	Propineb-DIDT	4-MI
Days after maximum		PEC_{soil} [mg/kg]				
Initial	0	1.064	0.116	0.204	0.127	0.041
Short-term	1	0.977	0.097	0.201	<0.001	0.032
	2	0.897	0.080	0.198	<0.001	0.025
	4	0.756	0.055	0.192	<0.001	0.015
Long-term	7	0.584	0.031	0.184	<0.001	0.007
	14	0.321	0.008	0.166	<0.001	0.001
	21	0.176	0.002	0.149	<0.001	<0.001
	28	0.097	<0.001	0.135	<0.001	<0.001
	42	0.029	<0.001	0.109	<0.001	<0.001
	50	0.015	<0.001	0.097	<0.001	<0.001
	100	<0.001	<0.001	0.046	<0.001	<0.001

Table 9.1.3- 8: TWA_{soil} of propineb and its degradation products for the use in vines (2 × 1400 g a.s./ha, 2 × 60% interception, 10 d application interval)

Substance		Propineb	PTU	PU	Propineb-DIDT	4-MI
Days after maximum		TWA_{soil} [mg/kg]				
Initial	0	-	-	-	-	-
Short-term	1	1.020	0.106	0.203	0.015	0.036
	2	0.978	0.097	0.201	0.008	0.032
	4	0.901	0.082	0.198	0.004	0.026
Long-term	7	0.800	0.065	0.194	0.002	0.020
	14	0.620	0.041	0.184	0.001	0.011
	21	0.494	0.029	0.175	< 0.001	0.008
	28	0.404	0.022	0.167	< 0.001	0.006
	42	0.288	0.015	0.152	< 0.001	0.004
	50	0.245	0.012	0.144	< 0.001	0.003
	100	0.124	0.006	0.106	< 0.001	0.002

Table 9.1.3- 9: PEC_{soil} of propineb and its degradation products for the use in tomatoes (4 × 2100 g a.s./ha, 50/70/80/80% interception, 7 d application interval)

Substance		Propineb	PTU	PU	Propineb-DIDT	4-MI
Days after maximum		PEC_{soil} [mg/kg]				
Initial	0	1.609	0.189	0.407	0.237	0.071
Short-term	1	1.477	0.157	0.401	<0.001	0.056
	2	1.356	0.130	0.395	<0.001	0.043
	4	1.143	0.089	0.384	<0.001	0.026
Long-term	7	0.884	0.051	0.367	<0.001	0.013
	14	0.486	0.014	0.330	<0.001	0.002
	21	0.267	0.004	0.298	<0.001	<0.001
	28	0.147	<0.001	0.268	<0.001	<0.001
	42	0.044	<0.001	0.218	<0.001	<0.001
	50	0.022	<0.001	0.193	<0.001	<0.001
	100	<0.001	<0.001	0.092	<0.001	<0.001

Table 9.1.3- 10: TWA_{soil} of propineb and its degradation products for the use in tomatoes (4 × 2100 g a.s./ha, 50/70/80/80% interception, 7 d application interval)

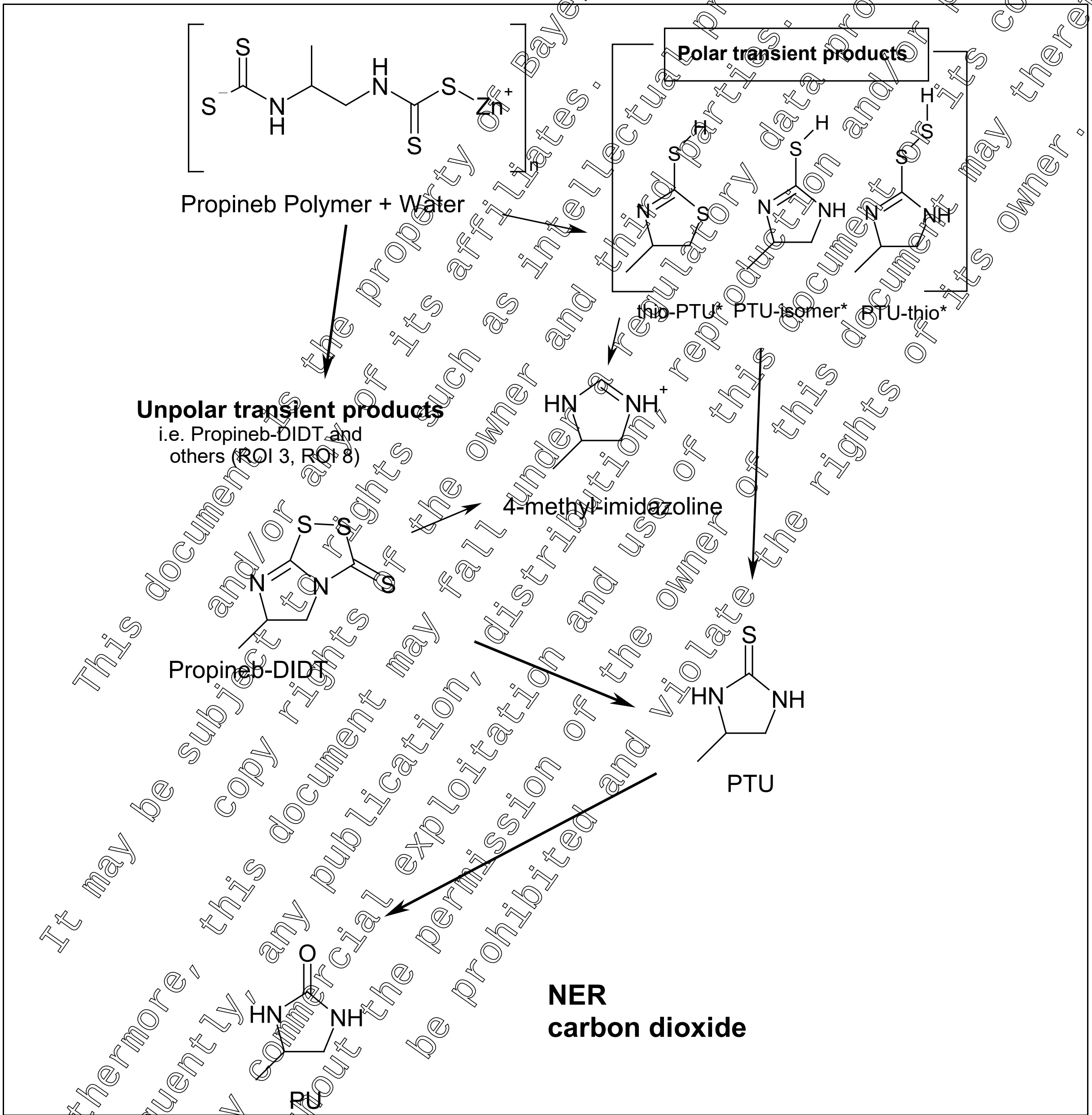
Substance		Propineb	PTU	PU	Propineb-DIDT	4-MI
Days after maximum		TWA_{soil} [mg/kg]				
Initial	0	-	-	-	-	-
Short-term	1	1.542	0.173	0.404	0.029	0.063
	2	1.479	0.158	0.401	0.015	0.056
	4	1.363	0.133	0.395	0.007	0.045
Long-term	7	1.211	0.105	0.387	0.004	0.034
	14	0.938	0.067	0.367	0.002	0.020
	21	0.747	0.047	0.350	0.001	0.014
	28	0.610	0.036	0.333	0.001	0.010
	42	0.435	0.024	0.303	< 0.001	0.007
	50	0.371	0.020	0.287	< 0.001	0.006
	100	0.188	0.010	0.212	< 0.001	0.003

CP 9.2 Fate and behaviour in water and sediment

The proposed degradation pathway of propineb in water and sediment is shown in Figure 9.2- 1.

For information on the fate and behaviour in water and sediment please refer to MCA Section 7, data point 7.2.

Figure 9.2- 1: Proposed degradation pathway of Propineb in natural water (i.e. water containing oxygen and organic matter (like in a water/sediment system).



*: different isomers (position of methyl group) are possible.

Remark: NER and carbon dioxide formation can result from all structures shown (either directly or indirectly).

CP 9.2.1 Aerobic mineralisation in surface water

For information on aerobic mineralisation in surface water studies please refer to MCA Section 7, data point 7.2.2.2.

CP 9.2.2 Water/sediment study

For information on water/sediment studies please refer to MCA Section 7, data point 7.2.2.3.

CP 9.2.3 Irradiated water/sediment study

For information on irradiated water/sediment studies please refer to MCA Section 7, data point 7.2.2.4.

CP 9.2.4 Estimation of concentrations in groundwater

New calculations were performed, to reflect findings from new studies presented in the active substance dossier, section 7 "Fate and behavior in the environment". In addition these calculations consider the most recent guidance documents for exposure calculations.
Calculations of predicted environmental concentrations in groundwater (PEC_{gw}) are presented below.

Endpoints for PEC_{gw}

Table 9.2.4- 1: Modelling input parameters for propineb and its metabolites

Endpoint	Propineb and metabolites Value used for modelling
Propineb	
Aqueous solubility [mg/L]	< 0.01 g/L at 20°C [A]
Vapour pressure [Pa]	1.6×10^{-4} Pa at 20°C [B]
DT_{50} soil [days]	0.5 [C]
K_{oc} [L/kg]	10000
1/n	1.000
4-MI	
Aqueous solubility [mg/L]	not determined
Vapour pressure [Pa]	not determined
DT_{50} soil [days]	2.2 (geomean)
K_{oc} [L/kg]	366.7
1/n	0.883 (arithmetic mean)
Formation fraction	0.106 (from parent), 0.088 (from DIDT)
Propineb-DIDT	
Aqueous solubility [mg/L]	20 g/L at 20°C
Vapour pressure [Pa]	1.6×10^{-4} Pa at 20°C [B]
DT_{50} soil [days]	0.5 (geomean, median)
K_{oc} [L/kg]	162.0
1/n	1.000
Formation fraction	0.214 (from parent)
PTU	
Aqueous solubility [mg/L]	96 g/L at 20°C
Vapour pressure [Pa]	6.5×10^{-5} Pa at 20°C
DT_{50} soil [days]	0.2 (geomean)
K_{oc} [L/kg]	19.0
1/n	1.000
Formation fraction	0.327 (from parent), 0.232 (from DIDT)
PU	
Aqueous solubility [mg/L]	200 g/L at 20°C
Vapour pressure [Pa]	not determined
DT_{50} soil [days]	5.7 (median)
K_{oc} [L/kg]	8.8
1/n	0.992
Formation fraction	0.88 (from PTU)

[A] Practically insoluble polymer
[B] Decomposition pressure
[C] For the present assessment on leaching in groundwater the shorter of the two values was used to account for a fast formation of the metabolites.

PEC_{gw} modelling approach

The predicted environmental concentrations in groundwater (PEC_{gw}) for the active substance propineb were calculated using the simulation models PEARL and PELMO following the recommendations of the FOCUS working group on groundwater scenarios.
The leaching calculations were run over 26 years, as proposed for pesticides which may be applied every year. The simulation length increases to 46 and 66 years for pesticides which are applied only every second and third year, respectively. The first six years are a ‘warm up’ period; only the last 20 years were considered for the assessment of the leaching potential. The 80th percentile of the average annual

groundwater concentrations in the percolate at 1 m depth under a treated plantation were evaluated and were taken as the relevant PEC_{gw} values. In respect to the assessment of a potential groundwater contamination this shallow depth reflects a worst case. The effective long-term groundwater concentrations will be even lower due to dilution in the groundwater layer.

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

Table 9.2.4- 2: FOCUS groundwater crop interception values

Crop	Crop stage Interception [%]				
Apples	without leaves 50	flowering 65	foliage development 70	full foliage 80	
Vines	without leaves 40	first leaves 50	leaf development 60	flowering 70	ripening 85
Tomatoes	bare – emergence (BBHC 00-09) 0	leaf development (BBCH 10-19) 50	stem elongation (BBCH 20-39) 70	flowering (BBCH 40-89) 80	senescence ripening (BBCH 90-99) 50

Derivation of kinetic modelling input values is presented in MCA Section 7, data point 7.1.2, a summary of modelling input parameters is given in the report KCP 9.2.4.1/01.

CP 9.2.4.1 Calculation of concentrations in groundwater

Predicted environmental concentrations in groundwater (PEC_{gw}) of propineb and its major degradation products

For propineb, the major degradation products 4-methylimidazoline, propineb-DIDT, propylene-thiourea and propylene-urea were considered.

Report:	[redacted]j;[redacted];2014;M-488186-02
Title:	Propineb (PPB) and metabolites: PECgw FOCUS PEARL, PELMO EUR - Use in apples, grapes and tomatoes in Europe
Report No:	EnSa-14-0606
Document No:	M-488186-02-1
Guidelines:	FOCUS 2000, SANCO/321/2000 v. 2.0 FOCUS 2009, SANCO/13144/2010 v. 1 FOCUS 2012, Generic Guidance for FOCUS Groundwater Assessments, v. 2.1
GLP/GEP:	**no**

Methods and Materials: Predicted environmental concentrations of the active substance propineb and its major soil degradation products in groundwater recharge (PEC_{gw}) were calculated for the use in Europe, using the simulation models FOCUS PEARL 4.4.4 ([redacted] et al. 2001) and FOCUS PELMO 5.5.3 ([redacted] 1995, 1999, 2011). PEC_{gw} were evaluated as the 80th percentile of the mean annual leachate concentration at 1 m soil depth. Model parameters and scenarios consisting of weather, soil, and crop data were used as proposed by FOCUS (2009).

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

Table 9.2.4.1- 1: Application pattern used for PEC_{gw} calculations of propineb

Individual Crop	FOCUS crop used for Interception	Application				Amount reaching the soil per application
		Rate per Season [g a.s./ha]	Interval [days]	Plant Interception [%]	BBCH Stage	[g a.s./ha]
Apples	Apples	2 × 1575	14	65 70	40-59 69-73	551.25 472.50
Grapes	Vines	2 × 1400	10	2 × 60	2 × 40-59	2 × 560.00
Tomatoes	Tomatoes	4 × 2100	7	50 70 80 80	June June June June	1050.00 630.00 420.00 420.00

Further input parameters for PEC_{gw} modelling of propineb and its degradation products are summarised in **Table 9.2.4.1- 2**.

Table 9.2.4.1- 2: Substance specific and model related input parameter for PEC_{gw} calculation of propineb and its degradation products

Parameter	Unit	Propineb	4-MI	Propineb-DIDT	PTU	PU
Molar mass	[g/mol]	289.8	84.1	190.3	116.2	100.2
Water solubility (20°C)	[mg/L]	0.1	200	2000	96.0	200
Vapour Pressure (20°C)	[Pa]	1.6×10^{-4}	6.5×10^{-5}	1.6×10^{-4}	6.5×10^{-5}	6.5×10^{-5}
Freundlich Exponent	[-]	1.000	0.883	1.000	1.000	0.992
Plant uptake factor	[-]	0.0	0.0	0.0	0.0	0.0
DT_{50} (20°C)	[days]	0.5	2.2	0.5	0.2	5.7
K_{oc}	[mL/g]	10000.0	366.7	162.0	19.0	8.8
K_{om}	[mL/g]	10000.0	212.8	94.0	11.0	5.1

Application dates for the simulation runs were defined following the crop event dates of the respective crop and scenario (Table 9.2.4.1- 3) as given by FOCUS (2009). Crop interception was taken into account according to the BBCH growth stage, as recommended by FOCUS (2012).

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

Individual crop	Apples	Vines	Tomatoes
Repeat Interval for App. Events	Every Year	Every Year	Every Year
Application Technique	Spray	Spray	Spray
Absolute / Relative to	Absolute	Absolute	Absolute
Scenario	1st App. Date (Julian day) Offset	1st App. Date (Julian day) Offset	1st App. Date (Julian day) Offset
[redacted]	12 Apr (102) -	20 Apr (110) -	01 Jun (152) -
[redacted]	19 Apr (109) -	24 May (144) -	-
[redacted]	14 May (134) -	-	-
[redacted]	19 Apr (109) -	24 May (144) -	-
[redacted]	09 Apr (99) -	-	-
[redacted]	12 Apr (102) -	20 Apr (110) -	01 Jun (152) -
[redacted]	03 Apr (93) -	20 Apr (110) -	01 Jun (152) -
[redacted]	29 Apr (119) -	20 Apr (110) -	01 Jun (152) -
[redacted]	03 Apr (93) -	20 Apr (110) -	01 Jun (152) -

Findings: PEC_{gw} were evaluated as the 80th percentile of the mean annual leachate concentration at 1 m soil depth. PEC_{gw} values for propineb and its metabolites are given in the following tables.

Apples, 2×1575 g a.s./ha

Table 9.2.4.1- 4: FOCUS PEARL PEC_{gw} results of propineb and its major degradation products in µg/L (Apples, 2×1575 g a.s./ha, 65/70% interception, 14 d app. interval)

Scenario	Propineb	4-MI	Propineb-DIDT	PTU	PU
[redacted]	<0.001	<0.001	<0.001	<0.001	0.032
[redacted]	<0.001	<0.001	<0.001	<0.001	0.060
[redacted]	<0.001	<0.001	<0.001	<0.001	0.066
[redacted]	<0.001	<0.001	<0.001	<0.001	0.028
[redacted]	<0.001	<0.001	<0.001	<0.001	0.033
[redacted]	<0.001	<0.001	<0.001	<0.001	0.008
[redacted]	<0.001	<0.001	<0.001	<0.001	0.003
[redacted]	<0.001	<0.001	<0.001	<0.001	0.003
[redacted]	<0.001	<0.001	<0.001	<0.001	<0.001

Table 9.2.4.1- 5: FOCUS PELMO PEC_{gw} results of propineb and its major degradation products in µg/L (Apples, 2×1575 g a.s./ha, 65/70% interception, 14 d app. interval)

Scenario	Propineb	4-MI	Propineb-DIDT	PTU	PU
[redacted]	<0.001	<0.001	<0.001	<0.001	0.006
[redacted]	<0.001	<0.001	<0.001	<0.001	0.001
[redacted]	<0.001	<0.001	<0.001	<0.001	0.006
[redacted]	<0.001	<0.001	<0.001	<0.001	0.005
[redacted]	<0.001	<0.001	<0.001	<0.001	0.011
[redacted]	<0.001	<0.001	<0.001	<0.001	0.018
[redacted]	<0.001	<0.001	<0.001	<0.001	0.005
[redacted]	<0.001	<0.001	<0.001	<0.001	<0.001
[redacted]	<0.001	<0.001	<0.001	<0.001	<0.001

Grapes, 2×1400 g a.s./ha

Table 9.2.4.1- 6: FOCUS PEARL PEC_{gw} results of propineb and its major degradation products in µg/L (Grapes, 2×1400 g a.s./ha, 2×60% interception, 10 d app. interval)

Scenario	Propineb	4-MI	Propineb-DIDT	PTU	PU
[redacted]	<0.001	<0.001	<0.001	<0.001	0.021
[redacted]	<0.001	<0.001	<0.001	<0.001	0.068
[redacted]	<0.001	<0.001	<0.001	<0.001	0.033
[redacted]	<0.001	<0.001	<0.001	<0.001	0.007
[redacted]	<0.001	<0.001	<0.001	<0.001	0.002
[redacted]	<0.001	<0.001	<0.001	<0.001	0.001
[redacted]	<0.001	<0.001	<0.001	<0.001	<0.001

Table 9.2.4.1- 7: FOCUS PELMO PEC_{gw} results of propineb and its major degradation products in µg/L (Grapes, 2×1400 g a.s./ha, 2×60% interception, 10 d app. interval)

Scenario	Propineb	4-MI	Propineb-DIDT	PTU	PU
[redacted]	<0.001	<0.001	<0.001	<0.001	0.004
	<0.001	<0.001	<0.001	<0.001	0.004
	<0.001	<0.001	<0.001	<0.001	0.007
	<0.001	<0.001	<0.001	<0.001	0.011
	<0.001	<0.001	<0.001	<0.001	0.002
	<0.001	<0.001	<0.001	<0.001	<0.001
	<0.001	<0.001	<0.001	<0.001	<0.001

Tomatoes, 4×2100 g a.s./ha

Table 9.2.4.1- 8: FOCUS PEARL PEC_{gw} results of propineb and its major degradation products in µg/L (Tomatoes, 4×2100 g a.s./ha, 50/70/80/80% interception, 7 d app. interval)

Scenario	Propineb	4-MI	Propineb-DIDT	PTU	PU
[redacted]	<0.001	<0.001	<0.001	<0.001	0.034
	<0.001	<0.001	<0.001	<0.001	0.009
	<0.001	<0.001	<0.001	<0.001	0.001
	<0.001	<0.001	<0.001	<0.001	<0.001
	<0.001	<0.001	<0.001	<0.001	<0.001

Table 9.2.4.1- 9: FOCUS PELMO PEC_{gw} results of propineb and its major degradation products in µg/L (Tomatoes, 4×2100 g a.s./ha, 50/70/80/80% interception, 7 d app. interval)

Scenario	Propineb	4-MI	Propineb-DIDT	PTU	PU
[redacted]	<0.001	<0.001	<0.001	<0.001	0.002
	<0.001	<0.001	<0.001	<0.001	0.007
	<0.001	<0.001	<0.001	<0.001	<0.001
	<0.001	<0.001	<0.001	<0.001	<0.001
	<0.001	<0.001	<0.001	<0.001	<0.001

Conclusion: There are no concerns for groundwater from the active substance propineb and its metabolites in accordance with the use pattern for the current formulation.

CP 9.2.4.2 Additional field tests

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

CP 9.2.5 Estimation of concentrations in surface water and sediment

New calculations were performed, to reflect findings from new studies presented in the active substance dossier, section 7 “Fate and behavior in the environment”. In addition these calculations consider the most recent guidance documents for exposure calculations.
Calculations of predicted environmental concentrations in surface water (PEC_{sw}) are presented below.

Endpoints for PEC_{sw}

Table 9.2.5- 1: Modelling input parameters for propineb and its metabolites

Endpoint	Propineb and metabolites Value used for modelling
Propineb	
Aqueous solubility [mg/L]	0.1 (Step 1, 2) / 10.0 (Step 3, 4)
Vapour pressure [Pa]	1.6×10^{-4} (20°C)
DT_{50} soil [days]	0.5 (Step 1, 2) / 0.1 (Step 3, 4)
K_{oc} [L/kg]	10000
1/n	1.00 [A]
DT_{50} total system [days]	1.0
DT_{50} water [days]	1.0
DT_{50} sediment [days]	1.0
PTU	
Aqueous solubility [mg/L]	96000 (20°C)
DT_{50} soil [days] (geo-mean laboratory)	0.2
K_{oc} [L/kg]	19
1/n	1.00
Maximum in soil [%]	33.7
Formation fraction	not stated
DT_{50} total system [days]	4.9
DT_{50} water [days]	4.9
DT_{50} sediment [days]	1000
Maximum in water/sediment [%]	26.6
PU	
Aqueous solubility [mg/L]	200000 (20°C)
DT_{50} soil [days] (geo-mean laboratory)	5.6
K_{oc} [L/kg]	8.8
1/n	0.992
Maximum in soil [%]	42.5
Maximum in water/sediment [%]	50.4
Formation fraction	not stated
DT_{50} total system [days]	147
DT_{50} water [days]	147
DT_{50} sediment [days]	1000
Propineb-DIDT	
Aqueous solubility [mg/L]	20000 (Step 1,2) / 200 (Step3,4)
DT_{50} soil [days]	0.5
K_{oc} [L/kg]	163
1/n	1.00
Maximum in soil [%]	25.8
Maximum in water [%]	35.8
Maximum in total system [%]	not stated
Formation fraction	0.214 (PRZM) / 0.141 (MACRO)
DT_{50} water [days]	1.4
DT_{50} sediment [days]	1000

Endpoint	Propineb and metabolites
	Value used for modelling
DT_{50} total system [days]	1.4
4-MI	
Aqueous solubility [mg/L]	200000
DT_{50} soil [days]	2.2
K_{oc} [L/kg]	367
1/n	0.883
Maximum in soil [%]	12.2
Maximum in water [%]	17.5
Maximum in total system [%]	not stated
Formation fraction	not stated
DT_{50} water [days]	1000
DT_{50} sediment [days]	1000
DT_{50} total system [days]	1000
[A] default	

PEC_{sw} modelling approach

Calculation of PEC values for the active substance according to FOCUS

$FOCUS_{sw}$ is a four step tiered approach:

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

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

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

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

Derivation of kinetic modelling input values is presented in MCA Section 7, data point 7.1.2, a summary of modelling input parameters is given in the report KCP 9.2.5/01.

Predicted environmental concentrations in surface water (PEC_{SW}) and in sediment (PEC_{SED}) of propineb and its major degradation products

For propineb, the major degradation products propylene-thiourea, propylene-urea, propineb-DIDT and 4-methyl-imidazoline were considered.

Report:	[redacted] b; [redacted] ;2014;M-489570-01
Title:	Propineb (PPB) and metabolites: PECsw,sed FOCUS EUR - Use in apples, grapes and tomatos in Europe
Report No:	EnSa-14-0686
Document No:	M-489570-01-1
Guidelines:	FOCUS 2003, SANCO/4802/2001 rev 2 FOCUS 2006, SANCO/10058/2005 v. 2.0 FOCUS 2007, SANCO/10422/2005 v. 2.0
GLP/GEP:	**no**

Methods and Materials: Predicted environmental concentrations of the active substance propineb and its major degradation products propylene-thiourea, propylene-urea, propineb-DIDT and 4-methyl-imidazoline in surface water (PEC_{sw}) and sediment (PEC_{sed}) were calculated for the use in Europe, employing the tiered FOCUS Surface Water (SW) approach (FOCUS, 2003). All relevant entry routes of a compound into surface water (principally a combination of spray drift and runoff/erosion or drain flow) were considered in these calculations.
The use of the fungicide propineb in apples, grapes and tomatoes was assessed according to the Good Agricultural Practice (GAP) in Europe. Detailed application parameters are presented in Table 9.2.5- 2.

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

Individual Crop	**FOCUS crop used for interception**	**Application**				
		Rate per season [g a.s./ha]	**BBCH stage**	**Interval [days]**	**Plant Interception [%]**	**Season**
Apple EU-C / EU-S, early	pome / stone fruit, early appl.	2×1575	40-59	14	Average crop cover (40%)	Mar. - May
Apple EU-C / EU-S, late	pome / stone fruit, late appl.	2×1575	69-73	14	Average crop cover (40%)	Mar. - May
Grapes EU-C	vines, early appl.	2×1120	40-59	10	Full canopy (70%)	Mar. - May
Grapes EU-S	vines, late appl.	2×1400	70	10	Full canopy (70%)	June – Sep.
Tomato EU-C	vegetables, fruiting	4×1680	June	7	Average crop cover (50%)	June – Sep.
Tomato EU-C	vegetables, fruiting	4×2100	June	7	Average crop cover (50%)	June – Sep.

For propineb and its metabolite propineb-DIDT, FOCUS Step 3 and Step 4 values were calculated in addition to FOCUS Step 1 and Step 2 values.

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

Table 9.2.5- 3: Substance parameters used for propineb and its major degradation products

Parameter	Unit	Propineb	PTU	PU	Propineb-DIDT	4-MI
Molar Mass	[g/mol]	289.8	116.2	100.2	190.3	84.1
Water Solubility	[mg/L]	0.1 (Step1,2) 10.0 (Step3,4)	96000	200000	20000 (Step 1,2) 200 (Step3,4)	200000
Vapour Pressure	[Pa]	1.6×10^{-4}	6.5×10^{-5}	n.d.	6.5×10^{-5}	n.d.
Q_{10}	[-]	2.58	2.58	2.58	2.58	2.58
K_{oc}	[mL/g]	10000	19	8.8	163	367
Degradation						
Soil	[days]	0.5 (Step1,2) 0.1 (Step3,4)	0.2	5.6	0.5	2.2
Total System	[days]	1	4.9	147	1.4	1000
Water	[days]	1	4.9	147	1.4	1000
Sediment	[days]	1	1000	1000	1000	1000
Max Occurrence						
Water / Sediment	[%]	100	26.6	50.4	35.8	17.5
Soil	[%]	100	33.7	42.5	25.8	12.2

n.d.: not determined

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

Table 9.2.5- 4: Application dates of propineb for the FOCUS Step 3 calculations for the use in apples and grapes

Parameter	Apples EU-C / EU-S, early		Apples EU-C / EU-S, late		Grapes EU-C	
PAT start date rel./absolute Appl. method (appl. type) No of appl. PAT window range Appl. interval	Emg., -7 days air blast (CAM 2) 2 44 14		Emg., +14 days air blast (CAM 2) 2 44 14		Emg., +14 days air blast (CAM 2) 2 40 10	
Application Details	PAT Start Date (Julian Day)	Appl. Date	PAT Start Date (Julian Day)	Appl. Date	PAT Start Date (Julian Day)	Appl. Date
D3 (1st)	08-Apr (98) -	07-Apr 21-Apr -	29-Apr (119) -	04-May 18-May -	- - -	- - -
D4 (1st)	13-Apr (103) -	18-Apr 05-May -	04-May (124) -	30-May 16-Jun -	- - -	- - -
D5 (1st)	25-Mar (84) -	08-Apr 22-Apr -	15-Apr (105) -	22-Apr 11-May -	- - -	- - -
D6 (1st)	- - -	- - -	- - -	- - -	15-Feb (46) -	27-Feb 14-Mar -
R1 (1st)	08-Apr (98) -	26-Apr 10-May -	29-Apr (119) -	29-Apr 15-May -	29-Apr (119) -	29-Apr 09-May -
R2 (1st)	08-Mar (67) -	14-Mar 29-Mar -	29-Mar (88) -	22-Apr 07-May -	29-Mar (88) -	22-Apr 07-May -
R3 (1st)	25-Mar (84) -	28-Mar 11-Apr -	15-Apr (105) -	15-Apr 18-May -	15-Apr (105) -	15-Apr 25-Apr -
R4 (1st)	08-Mar (67) -	08-Mar 15-Apr -	29-Mar (88) -	15-Apr 04-May -	24-Mar (83) -	25-Mar 29-Apr -

Table 9.2.5- 5: Application dates of propineb for the FOCUS Step 3 calculations for the use in grapes and tomatoes

Parameter	Grapes EU-S		Tomato EU-C		Tomato EU-C	
PAT start date rel./absolute Appl. method (appl. type) No of appl. PAT window range Appl. interval	Emg., +60 days air blast (CAM 2) 2 40 10		Absolute ground spray (CAM 2) 4 51 7		Absolute ground spray (CAM 2) 4 51 7	
Application Details	**PAT Start Date (Julian Day)**	**Appl. Date**	**PAT Start Date (Julian Day)**	**Appl. Date**	**PAT Start Date (Julian Day)**	**Appl. Date**
D6 (1st)	02-Apr (92) - -	09-Apr 23-Apr	01-Jun (152) - -	06-Jun 24-Jun 06-Jul 17-Jul	01-Jun (152) - -	06-Jun 24-Jun 06-Jul 17-Jul
R1 (1st)	14-Jun (165) - -	29-Jun 11-Jul	- - - -	- - - -	- - - -	- - - -
R2 (1st)	14-May (134) - -	20-May 03-Jun - -	01-Jun (152) - -	04-Jun 12-Jun 11-Jul 18-Jul	01-Jun (152) - -	04-Jun 12-Jun 11-Jul 18-Jul
R3 (1st)	31-May (151) - -	01-Jun 16-Jun - -	01-Jun (152) - -	02-Jun 18-Jun- 25-Jun 11-Jul	01-Jun (152) - -	02-Jun 18-Jun- 25-Jun 11-Jul
R4 (1st)	09-May (129) - -	09-May 27-May - -	01-Jun (152) - -	05-Jun 12-Jun 23-Jun 30-Jun	01-Jun (152) - -	05-Jun 12-Jun 23-Jun 30-Jun

Findings:

FOCUS Step 1 and 2: The maximum PEC values for FOCUS Step 1 and 2 are given in the tables below for propineb and its major degradation products.

Table 9.2.5- 6: Maximum PEC_{sw} values of propineb and its major degradation products according to FOCUS SW Step 2 calculations

Crop	Propineb	PTU	PU	Propineb-DIDT	4-MI
	PEC_{sw} [µg/L]				
Apple EU-C / EU-S, early	153.3	16.35	57.17	36.03	11.89
Apple EU-C / EU-S, late	82.56	8.805	34.05	19.41	5.700
Grapes EU-C	10.08	1.237	8.206	2.369	1.024
Grapes EU-S	37.46	4.410	15.81	8.807	2.951
Tomato EU-C	15.45	1.740	19.17	3.632	2.218
Tomato EU-C	19.31	2.174	23.97	4.540	2.772
Maximum	153.3	16.35	57.17	36.03	11.89

Table 9.2.5- 7: Summary of the maximum PEC_{sw} values in µg/L of propineb and its major degradation products (FOCUS Steps 1-2)

Crop	Scenario	Propineb	PTU	PU	Propineb-DIDT	4-MI
		PEC_{sw} [µg/L]				
Apples EU-C / EU-S, early 2 × 1575 g a.s./ha	Step 1	189.9	171.1	205.9	109.1	40.53
	Step 2					
	N-EU Multi	134.0	16.30	50.61	31.59	11.89
	S-EU Multi	134.0	16.30	57.17	31.59	11.89
	N-EU Single	153.3	16.35	31.59	36.03	7.785
	S-EU Single	153.3	16.35	37.17	36.03	7.785
Apples EU-C / EU-S, late 2 × 1575 g a.s./ha	Step 1	119.2	156.0	181.3	92.47	33.35
	Step 2					
	N-EU Multi	63.68	7.744	27.49	15.01	5.649
	S-EU Multi	63.68	7.744	34.05	15.01	5.700
	N-EU Single	82.56	8.805	19.59	19.41	4.193
	S-EU Single	82.56	8.805	25.16	19.41	4.193
Grapes EU-C 2 × 1120 g a.s./ha	Step 1	36.12	100.6	112.0	54.33	18.77
	Step 2					
	N-EU Multi	9.319	1.237	5.648	2.218	0.867
	S-EU Multi	9.319	1.237	8.206	2.218	1.024
	N-EU Single	10.08	1.075	3.693	2.369	0.536
	S-EU Single	10.08	1.075	5.676	2.369	0.687
Grapes EU-S 2 × 1400 g a.s./ha	Step 1	70.02	131.0	148.6	73.75	25.99
	Step 2					
	N-EU Multi	33.23	4.410	14.21	7.908	2.951
	S-EU Multi	33.23	4.410	15.81	7.908	2.951
	N-EU Single	37.46	3.996	8.836	8.807	1.903
	S-EU Single	37.46	3.996	10.08	8.807	1.903
Tomato EU-C 4 × 1680 g a.s./ha	Step 1	54.52	301.8	336.1	81.57	56.39
	Step 2					
	N-EU Multi	10.44	1.740	15.03	2.565	2.005
	S-EU Multi	10.44	1.740	19.17	2.565	2.218
	N-EU Single	15.45	1.648	7.579	3.632	0.968
	S-EU Single	15.45	1.648	10.06	3.632	1.156
Tomato EU-C 4 × 2100 g a.s./ha	Step 1	68.15	377.2	420.1	102.0	70.48
	Step 2					
	N-EU Multi	13.04	2.174	18.79	3.206	2.507
	S-EU Multi	13.04	2.174	23.97	3.206	2.772
	N-EU Single	19.31	2.060	9.474	4.540	1.209
	S-EU Single	19.31	2.060	12.57	4.540	1.445

Table 9.2.5- 8: Summary of the maximum PEC_{sed} values in µg/kg of propineb and its major degradation products (FOCUS Steps 1-2)

Crop	Scenario	Propineb	PTU	PU	Propineb-DIDT	4-MI
		PEC_{sed} [µg/L]				
Apples EU-C / EU-S, early 2 × 1575 g a.s./ha	Step 1	3660	26.29	13.42	119.1	91.61
	Step 2					
	N-EU Multi	311.7	2.020	4.436	28.20	34.85
	S-EU Multi	311.7	2.020	5.013	28.20	36.42
	N-EU Single	356.5	2.018	2.769	32.14	20.67
	S-EU Single	356.5	2.018	3.260	32.14	22.23
Apples EU-C / EU-S, late 2 × 1575 g a.s./ha	Step 1	3660	26.29	13.42	119.1	91.61
	Step 2					
	N-EU Multi	148.1	0.959	2.410	13.40	17.38
	S-EU Multi	148.1	0.959	2.987	13.40	18.96
	N-EU Single	192.0	1.087	1.718	17.31	11.85
	S-EU Single	192.0	1.087	2.208	17.31	13.41
Grapes EU-C 2 × 1120 g a.s./ha	Step 1	2600	18.70	9.543	84.69	65.14
	Step 2					
	N-EU Multi	21.70	0.154	0.496	1.988	2.894
	S-EU Multi	21.70	0.154	0.721	1.988	3.471
	N-EU Single	23.43	0.133	0.324	2.113	1.810
	S-EU Single	23.43	0.133	0.499	2.113	2.364
Grapes EU-S 2 × 1400 g a.s./ha	Step 1	3260	23.37	11.93	105.9	81.43
	Step 2					
	N-EU Multi	77.37	0.548	1.246	7.087	8.980
	S-EU Multi	77.37	0.548	1.387	7.087	9.341
	N-EU Single	87.13	0.493	0.775	7.856	5.364
	S-EU Single	87.13	0.493	0.884	7.856	5.711
Tomato EU-C 4 × 1680 g a.s./ha	Step 1	3910	56.09	28.63	127.0	195.4
	Step 2					
	N-EU Multi	24.53	0.217	1.319	2.325	6.720
	S-EU Multi	24.53	0.217	1.684	2.325	7.498
	N-EU Single	35.93	0.203	0.666	3.240	3.311
	S-EU Single	35.93	0.203	0.884	3.240	4.004
Tomato EU-C 4 × 2100 g a.s./ha	Step 1	4880	70.11	35.79	158.8	244.3
	Step 2					
	N-EU Multi	30.66	0.271	1.649	2.906	8.400
	S-EU Multi	30.66	0.271	2.105	2.906	9.372
	N-EU Single	44.91	0.254	0.832	4.050	4.139
	S-EU Single	44.91	0.254	1.105	4.050	5.005

FOCUS Step 3 and 4: The maximum PEC values for FOCUS Step 3 and 4 are given in the tables below for propineb and its metabolite propineb-DIDT considering the application in apples, grapes and tomatoes.

Single and multiple application PEC_{sw} values are presented for all relevant scenarios in Step 3 and 4. PEC_{sed} values are only presented for FOCUS Step 3. For other PEC values please refer to the report.

Time dependent PEC values or time-weighted average concentrations are not included in this summary, because they were not used in the risk assessment.

Apple EU-C / EU-S, early, 2 × 1575 g/ha

FOCUS SW Step 3 values for the application in apples EU-C / EU-S, early, are presented in Table 9.2.5- 9 for propineb and in Table 9.2.5- 10 for its metabolite propineb-DIDT.

Table 9.2.5- 9: PEC_{sw} and PEC_{sed} values of propineb in apples EU-C / EU-S, early (2 × 1575 g a.s./ha), for all calculated scenarios according to FOCUS SW Step 3; letters S, D, and R before correspond to the dominant entry path – spray drift, drainage, and runoff

Scenario	Single Application			Multiple Application		
	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D3 (ditch, 1st)	S	121.3	55.94	S	104.3	50.20
D4 (pond, 1st)	S	7.378	9.982	S	6.610	8.723
D4 (stream, 1st)	S	116.2	4.707	S	99.22	4.019
D5 (pond, 1st)	S	7.377	7.305	S	6.616	7.096
D5 (stream, 1st)	S	117.6	3.071	S	108.7	5.181
R1 (pond, 1st)	S	7.377	7.497	S	6.529	6.551
R1 (stream, 1st)	S	98.15	11.78	S	83.81	10.06
R2 (stream, 1st)	S	130.0	7.659	S	111.0	6.559
R3 (stream, 1st)	S	138.2	24.79	S	118.6	24.10
R4 (stream, 1st)	S	98.17	11.87	S	84.30	11.36

Table 9.2.5- 10: PEC_{sw} and PEC_{sed} values of the metabolite propineb-DIDT in apples EU-C / EU-S, early (2 × 1575 g a.s./ha), for all calculated scenarios according to FOCUS SW Step 3

Scenario	Single Application		Multiple Application	
	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D3 (ditch, 1st)	28.70	5.454	24.71	5.646
D4 (pond, 1st)	1.748	0.804	1.662	1.015
D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001
D5 (pond, 1st)	1.747	0.668	1.663	0.966
D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001
R1 (pond, 1st)	1.748	0.677	1.610	0.857
R1 (stream, 1st)	0.003	<0.001	0.057	0.010
R2 (stream, 1st)	0.005	0.002	0.070	0.020
R3 (stream, 1st)	<0.001	<0.001	28.09	3.550
R4 (stream, 1st)	<0.001	<0.001	19.97	1.864

FOCUS SW Step 4 values for single and multiple application in apples EU-C / EU- S, early, are presented in Table 9.2.5- 11 for propineb and in Table 9.2.5- 12 for propineb-DIDT.

Table 9.2.5- 11: FOCUS Step 4 PEC_{sw} values of propineb after single and multiple application in apples EU-C / EU-S, early (2× 1575 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
5 m SD	D3 (ditch, 1st)	95.32	47.66	23.83	9.532	80.40	40.20	20.10	8.040
	D4 (pond, 1st)	8.306	4.153	2.077	0.831	7.414	3.707	1.853	0.741
	D4 (stream, 1st)	99.83	49.92	24.96	9.983	84.22	42.11	21.05	8.422
	D5 (pond, 1st)	8.305	4.153	2.076	0.831	7.421	3.711	1.855	0.742
	D5 (stream, 1st)	101.0	50.52	25.26	10.10	92.30	46.15	23.08	9.230
	R1 (pond, 1st)	8.306	4.153	2.076	0.831	7.324	3.662	1.831	0.732
	R1 (stream, 1st)	84.33	42.16	21.08	8.432	71.13	35.57	17.78	7.113
	R2 (stream, 1st)	111.7	55.85	27.93	11.17	94.23	47.12	23.56	9.423
	R3 (stream, 1st)	118.7	59.36	29.68	11.87	100.6	50.32	25.16	10.06
	R4 (stream, 1st)	84.34	42.17	21.09	8.434	71.55	35.78	17.89	7.155
10 m SD	D3 (ditch, 1st)	58.54	29.27	14.63	5.854	47.50	23.75	11.88	4.750
	D4 (pond, 1st)	4.555	2.277	1.139	0.455	4.212	2.106	1.053	0.421
	D4 (stream, 1st)	61.31	30.65	15.33	6.131	49.75	24.88	12.44	4.975
	D5 (pond, 1st)	4.554	2.277	1.138	0.455	4.216	2.108	1.054	0.422
	D5 (stream, 1st)	62.05	31.02	15.51	6.205	54.53	27.27	13.63	5.453
	R1 (pond, 1st)	4.554	2.277	1.139	0.455	4.161	2.080	1.040	0.416
	R1 (stream, 1st)	51.78	25.89	12.95	5.178	42.03	21.01	10.51	4.203
	R2 (stream, 1st)	68.60	34.30	17.15	6.860	55.67	27.84	13.92	5.567
	R3 (stream, 1st)	72.91	36.46	18.23	7.291	59.46	29.73	14.86	5.946
	R4 (stream, 1st)	51.80	25.90	12.95	5.180	42.27	21.14	10.57	4.227
20 m SD	D3 (ditch, 1st)	13.39	6.692	3.346	1.338	12.30	6.149	3.074	1.230
	D4 (pond, 1st)	1.473	0.736	0.368	0.147	1.271	0.635	0.318	0.127
	D4 (stream, 1st)	14.02	7.009	3.505	1.402	12.88	6.440	3.220	1.288
	D5 (pond, 1st)	1.473	0.736	0.368	0.147	1.272	0.636	0.318	0.127
	D5 (stream, 1st)	14.19	7.094	3.547	1.419	14.12	7.059	3.529	1.412
	R1 (pond, 1st)	1.473	0.736	0.368	0.147	1.255	0.628	0.314	0.125
	R1 (stream, 1st)	11.84	5.920	2.960	1.184	10.88	5.440	2.720	1.088
	R2 (stream, 1st)	15.69	7.843	3.922	1.569	14.41	7.207	3.603	1.441
	R3 (stream, 1st)	16.67	8.336	4.168	1.667	15.39	7.696	3.848	1.539
	R4 (stream, 1st)	11.84	5.922	2.961	1.184	10.94	5.472	2.736	1.094
30 m SD	D3 (ditch, 1st)	5.119	2.559	1.280	0.512	4.229	2.114	1.057	0.423
	D4 (pond, 1st)	0.713	0.357	0.178	0.071	0.562	0.281	0.141	0.056
	D4 (stream, 1st)	5.361	2.681	1.340	0.536	4.430	2.215	1.107	0.443
	D5 (pond, 1st)	0.713	0.357	0.178	0.071	0.563	0.281	0.141	0.056
	D5 (stream, 1st)	5.426	2.713	1.356	0.543	4.855	2.428	1.214	0.486
	R1 (pond, 1st)	0.713	0.357	0.178	0.071	0.555	0.278	0.139	0.056
	R1 (stream, 1st)	4.528	2.264	1.132	0.453	3.742	1.871	0.935	0.374
	R2 (stream, 1st)	5.999	2.999	1.500	0.600	4.956	2.478	1.239	0.496
	R3 (stream, 1st)	6.376	3.188	1.594	0.638	5.293	2.647	1.323	0.529
	R4 (stream, 1st)	4.529	2.265	1.132	0.453	3.764	1.882	0.941	0.376

Table 9.2.5- 12: FOCUS Step 4 PEC_{sw} values of propineb-DIDT after single and multiple application in apples EU-C / EU-S, early (2× 1575 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC_{sw} [µg/L] Drift Reduction				Multiple applications PEC_{sw} [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
5 m SD	D3 (ditch, 1st)	22.55	11.28	5.638	2.255	<0.001	<0.001	<0.001	<0.001
	D4 (pond, 1st)	1.968	0.984	0.492	0.197	<0.001	<0.001	<0.001	<0.001
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	D5 (pond, 1st)	1.967	0.984	0.492	0.197	<0.001	<0.001	<0.001	<0.001
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	1.968	0.984	0.492	0.197	<0.001	<0.001	<0.001	<0.001
	R1 (stream, 1st)	0.003	0.003	0.003	0.003	0.057	0.057	0.057	0.057
	R2 (stream, 1st)	0.005	0.005	0.005	0.005	0.070	0.070	0.070	0.070
	R3 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.357	0.357	0.357	0.357
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.319	0.319	0.319	0.319
10 m SD	D3 (ditch, 1st)	13.85	6.925	3.463	1.385	<0.001	<0.001	<0.001	<0.001
	D4 (pond, 1st)	1.079	0.539	0.270	0.108	<0.001	<0.001	<0.001	<0.001
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	D5 (pond, 1st)	1.079	0.539	0.270	0.108	<0.001	<0.001	<0.001	<0.001
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	1.079	0.539	0.270	0.108	<0.001	<0.001	<0.001	<0.001
	R1 (stream, 1st)	0.003	0.003	0.003	0.003	0.057	0.057	0.057	0.057
	R2 (stream, 1st)	0.005	0.005	0.005	0.005	0.070	0.070	0.070	0.070
	R3 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.357	0.357	0.357	0.357
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.319	0.319	0.319	0.319
20 m SD	D3 (ditch, 1st)	3.167	1.583	0.792	0.317	<0.001	<0.001	<0.001	<0.001
	D4 (pond, 1st)	0.349	0.174	0.087	0.035	<0.001	<0.001	<0.001	<0.001
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	D5 (pond, 1st)	0.349	0.174	0.087	0.035	<0.001	<0.001	<0.001	<0.001
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.349	0.174	0.087	0.035	<0.001	<0.001	<0.001	<0.001
	R1 (stream, 1st)	0.003	0.003	0.003	0.003	0.057	0.057	0.057	0.057
	R2 (stream, 1st)	0.005	0.005	0.005	0.005	0.070	0.070	0.070	0.070
	R3 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.357	0.357	0.357	0.357
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.319	0.319	0.319	0.319
30 m SD	D3 (ditch, 1st)	1.211	0.606	0.303	0.121	<0.001	<0.001	<0.001	<0.001
	D4 (pond, 1st)	0.169	0.085	0.042	0.017	<0.001	<0.001	<0.001	<0.001
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	D5 (pond, 1st)	0.169	0.085	0.042	0.017	<0.001	<0.001	<0.001	<0.001
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.169	0.085	0.042	0.017	<0.001	<0.001	<0.001	<0.001
	R1 (stream, 1st)	0.003	0.003	0.003	0.003	0.057	0.057	0.057	0.057
	R2 (stream, 1st)	0.005	0.005	0.005	0.005	0.070	0.070	0.070	0.070
	R3 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.357	0.357	0.357	0.357
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.319	0.319	0.319	0.319

Apple EU-C / EU-S, late, 2 × 1575 g/ha

FOCUS SW Step 3 values for the application in apples EU-C / EU-S, late, are presented in Table 9.2.5- 13 for propineb and in Table 9.2.5- 14 for its metabolite propineb-DIDT.

Table 9.2.5- 13: PEC_{sw} and PEC_{sed} values of propineb in apples EU-C / EU-S, late (2 × 1575 g a.s./ha), for all calculated scenarios according to FOCUS SW Step 3; letters S, D, and R before correspond to the dominant entry path – spray drift, drainage, and runoff

Scenario	Single Application			Multiple Application		
	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D3 (ditch, 1st)	S	57.29	21.76	S	45.42	18.11
D4 (pond, 1st)	S	2.572	1.949	S	2.154	1.631
D4 (stream, 1st)	S	55.44	4.594	S	45.48	5.603
D5 (pond, 1st)	S	2.572	2.555	S	2.155	2.138
D5 (stream, 1st)	S	56.80	2.689	S	45.50	2.154
R1 (pond, 1st)	S	2.571	2.308	S	2.162	1.931
R1 (stream, 1st)	S	43.77	5.253	S	35.06	4.207
R2 (stream, 1st)	S	58.07	3.463	S	47.26	3.467
R3 (stream, 1st)	S	61.92	12.49	S	49.60	10.00
R4 (stream, 1st)	S	44.03	5.930	S	35.26	4.750

Table 9.2.5- 14: PEC_{sw} and PEC_{sed} values of the metabolite propineb-DIDT in apples EU-C / EU-S, late (2× 1575 g a.s./ha), for all calculated scenarios according to FOCUS SW Step 3

Scenario	Single Application		Multiple Application	
	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D3 (ditch, 1st)	13.57	2.521	10.76	2.475
D4 (pond, 1st)	0.609	0.201	0.514	0.224
D4 (stream, 1st)	<0.001	<0.001	10.78	0.939
D5 (pond, 1st)	0.609	0.234	0.517	0.254
D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001
R1 (pond, 1st)	0.609	0.221	0.525	0.267
R1 (stream, 1st)	0.004	<0.001	0.229	0.040
R2 (stream, 1st)	<0.001	<0.001	0.001	<0.001
R3 (stream, 1st)	14.67	1.701	11.75	1.369
R4 (stream, 1st)	10.43	0.932	8.354	0.747

FOCUS SW Step 4 values for single and multiple application in apples EU-C / EU- S, late, are presented in Table 9.2.5- 15 for propineb and in Table 9.2.5- 16 for propineb-DIDT.

Table 9.2.5- 15: FOCUS Step 4 PEC$_{sw}$ values of propineb after single and multiple application in apples EU-C / EU-S, late (2× 1575 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
0 m SD	D3 (ditch, 1st)	57.29	28.65	14.32	5.729	45.42	22.71	11.35	4.542
	D4 (pond, 1st)	2.572	1.286	0.643	0.257	2.154	1.077	0.539	0.215
	D4 (stream, 1st)	55.44	27.72	13.86	5.544	45.48	22.74	11.37	4.548
	D5 (pond, 1st)	2.572	1.286	0.643	0.257	2.155	1.078	0.539	0.216
	D5 (stream, 1st)	56.80	28.40	14.20	5.680	45.50	22.75	11.38	4.550
	R1 (pond, 1st)	2.571	1.286	0.643	0.257	2.162	1.081	0.541	0.216
	R1 (stream, 1st)	43.77	21.88	10.94	4.377	35.06	17.53	8.764	3.506
	R2 (stream, 1st)	58.07	29.03	14.52	5.807	47.26	23.63	11.81	4.726
	R3 (stream, 1st)	61.92	30.96	15.48	6.192	49.60	24.80	12.40	4.960
	R4 (stream, 1st)	44.03	22.01	11.01	4.403	35.26	17.63	8.816	3.526
5 m SD	D3 (ditch, 1st)	38.65	19.32	9.662	3.865	31.58	15.79	7.896	3.158
	D4 (pond, 1st)	2.943	1.471	0.736	0.294	2.459	1.229	0.615	0.246
	D4 (stream, 1st)	43.28	21.64	10.82	4.328	36.18	18.09	9.046	3.618
	D5 (pond, 1st)	2.943	1.471	0.736	0.294	2.460	1.230	0.615	0.246
	D5 (stream, 1st)	44.34	22.17	11.09	4.434	36.20	18.10	9.049	3.620
	R1 (pond, 1st)	2.942	1.471	0.735	0.294	2.468	1.234	0.617	0.247
	R1 (stream, 1st)	34.16	17.08	8.541	3.416	27.89	13.95	6.972	2.789
	R2 (stream, 1st)	45.32	22.66	11.33	4.532	37.59	18.80	9.399	3.759
	R3 (stream, 1st)	48.33	24.17	12.08	4.833	39.46	19.73	9.864	3.946
	R4 (stream, 1st)	34.36	17.18	8.591	3.436	28.05	14.03	7.014	2.805
10 m SD	D3 (ditch, 1st)	17.27	8.635	4.317	1.727	15.17	7.584	3.792	1.517
	D4 (pond, 1st)	1.632	0.816	0.408	0.163	1.352	0.676	0.338	0.135
	D4 (stream, 1st)	19.34	9.669	4.834	1.934	17.38	8.688	4.344	1.738
	D5 (pond, 1st)	1.632	0.816	0.408	0.163	1.352	0.676	0.338	0.135
	D5 (stream, 1st)	19.81	9.906	4.953	1.981	17.38	8.691	4.346	1.738
	R1 (pond, 1st)	1.631	0.816	0.408	0.163	1.357	0.678	0.339	0.136
	R1 (stream, 1st)	15.27	7.633	3.816	1.526	13.39	6.697	3.348	1.339
	R2 (stream, 1st)	20.25	10.13	5.063	2.025	18.05	9.027	4.513	1.805
	R3 (stream, 1st)	21.60	10.80	5.399	2.160	18.95	9.474	4.737	1.895
	R4 (stream, 1st)	15.36	7.678	3.839	1.535	13.47	6.736	3.368	1.347
15 m SD	D3 (ditch, 1st)	8.720	4.360	2.180	0.872	7.425	3.713	1.856	0.743
	D4 (pond, 1st)	1.043	0.521	0.261	0.104	0.819	0.409	0.205	0.082
	D4 (stream, 1st)	9.764	4.882	2.441	0.977	8.506	4.253	2.126	0.851
	D5 (pond, 1st)	1.043	0.521	0.261	0.104	0.819	0.410	0.205	0.082
	D5 (stream, 1st)	10.00	5.002	2.501	1.001	8.509	4.255	2.127	0.851
	R1 (pond, 1st)	1.042	0.521	0.261	0.104	0.822	0.411	0.206	0.082
	R1 (stream, 1st)	7.708	3.854	1.927	0.771	6.556	3.278	1.639	0.656
	R2 (stream, 1st)	10.23	5.113	2.557	1.023	8.838	4.419	2.209	0.884
	R3 (stream, 1st)	10.91	5.453	2.726	1.091	9.276	4.638	2.319	0.928
	R4 (stream, 1st)	7.753	3.877	1.938	0.775	6.595	3.298	1.649	0.660

Table 9.2.5- 16: FOCUS Step 4 PEC$_{sw}$ values of propineb-DIDT after single and multiple application in apples EU-C / EU-S, late (2× 1575 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
0 m SD	D3 (ditch, 1st)	13.57	6.786	3.393	1.357	10.76	5.380	2.690	1.076
	D4 (pond, 1st)	0.609	0.305	0.152	0.061	0.514	0.257	0.129	0.051
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	10.78	5.387	2.694	1.077
	D5 (pond, 1st)	0.609	0.305	0.152	0.061	0.517	0.258	0.129	0.052
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.609	0.305	0.152	0.061	0.525	0.262	0.131	0.053
	R1 (stream, 1st)	0.004	0.004	0.004	0.004	0.229	0.229	0.229	0.229
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.001
	R3 (stream, 1st)	14.67	7.334	3.667	1.467	11.75	5.875	2.937	1.175
	R4 (stream, 1st)	10.43	5.215	2.607	1.043	8.354	4.177	2.088	1.296
5 m SD	D3 (ditch, 1st)	9.155	4.578	2.289	0.916	7.483	3.742	1.871	0.748
	D4 (pond, 1st)	0.697	0.349	0.174	0.070	0.587	0.294	0.147	0.059
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	8.572	4.286	2.143	0.857
	D5 (pond, 1st)	0.697	0.349	0.174	0.070	0.590	0.295	0.147	0.059
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.697	0.348	0.174	0.070	0.599	0.299	0.150	0.060
	R1 (stream, 1st)	0.004	0.004	0.004	0.004	0.229	0.229	0.229	0.229
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.001
	R3 (stream, 1st)	11.45	5.725	2.862	1.145	9.347	4.674	2.337	0.935
	R4 (stream, 1st)	8.141	4.070	2.035	0.814	6.646	3.323	1.661	1.296
10 m SD	D3 (ditch, 1st)	4.091	2.046	1.023	0.409	3.594	1.797	0.898	0.359
	D4 (pond, 1st)	0.387	0.193	0.097	0.039	0.323	0.161	0.081	0.032
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	4.116	2.058	1.029	0.412
	D5 (pond, 1st)	0.387	0.193	0.097	0.039	0.324	0.162	0.081	0.032
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.386	0.193	0.097	0.039	0.329	0.165	0.082	0.033
	R1 (stream, 1st)	0.004	0.004	0.004	0.004	0.229	0.229	0.229	0.229
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.001
	R3 (stream, 1st)	5.116	2.558	1.279	0.787	4.489	2.244	1.122	0.787
	R4 (stream, 1st)	3.638	1.819	0.909	0.364	3.192	1.596	1.296	1.296
15 m SD	D3 (ditch, 1st)	2.066	1.033	0.516	0.207	1.759	0.880	0.440	0.176
	D4 (pond, 1st)	0.247	0.124	0.062	0.025	0.196	0.098	0.049	0.020
	D4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	2.015	1.008	0.504	0.202
	D5 (pond, 1st)	0.247	0.124	0.062	0.025	0.196	0.098	0.049	0.020
	D5 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.247	0.123	0.062	0.025	0.199	0.100	0.050	0.020
	R1 (stream, 1st)	0.004	0.004	0.004	0.004	0.229	0.229	0.229	0.229
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.001
	R3 (stream, 1st)	2.583	1.292	0.787	0.787	2.197	1.099	0.787	0.787
	R4 (stream, 1st)	1.837	0.918	0.459	0.319	1.562	1.296	1.296	1.296

Grapes EU-C, 2 × 1120 g a.s./ha

FOCUS SW Step 3 values for the application in grapes EU-C are presented in Table 9.2.5- 17 for propineb and in Table 9.2.5- 18 for the metabolite propineb-DIDT.

Table 9.2.5- 17: PEC_{sw} and PEC_{sed} values of propineb in grapes EU-C (2 × 1120 g a.s./ha) for all calculated scenarios according to FOCUS SW Step 3; letters S, D, and R before correspond to the dominant entry path – spray drift, drainage, and runoff

Scenario	Single Application			Multiple Application		
	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D6 (ditch, 1st)	S	6.195	1.447	S	5.739	2.927
R1 (pond, 1st)	S	0.214	0.192	S	0.191	0.167
R1 (stream, 1st)	S	4.581	0.528	S	4.148	0.478
R2 (stream, 1st)	S	6.085	0.361	S	5.593	0.402
R3 (stream, 1st)	S	6.480	1.241	S	5.869	1.161
R4 (stream, 1st)	S	4.579	0.524	S	4.180	0.562

Table 9.2.5- 18: PEC_{sw} and PEC_{sed} values of the metabolite propineb-DIDT in grapes EU-C (2 × 1120 g a.s./ha), for all calculated scenarios according to FOCUS SW Step 3

Scenario	Single Application		Multiple Application	
	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D6 (ditch, 1st)	1.470	0.182	1.361	0.318
R1 (pond, 1st)	0.051	0.018	0.048	0.025
R1 (stream, 1st)	0.005	<0.001	0.062	0.011
R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001
R3 (stream, 1st)	1.535	0.172	0.336	0.086
R4 (stream, 1st)	<0.001	<0.001	0.081	0.019

FOCUS SW Step 4 values for single and multiple application in grapes EU-C are presented in Table 9.2.5- 19 for propineb and in Table 9.2.5- 20 for the metabolite propineb-DIDT.

Table 9.2.5- 19: <u>FOCUS Step 4</u> PEC_{sw} values of propineb after single and multiple application in <u>grapes EU-C (2 × 1120 g a.s./ha)</u> with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application				Multiple applications			
		PEC_{sw} [µg/L] Drift Reduction				PEC_{sw} [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
0 m SD	D6 (ditch, 1st)	6.195	3.098	1.549	0.620	5.739	2.870	1.435	0.574
	R1 (pond, 1st)	0.214	0.107	0.054	0.022	0.191	0.096	0.048	0.019
	R1 (stream, 1st)	4.581	2.290	1.145	0.458	4.148	2.074	1.037	0.415
	R2 (stream, 1st)	6.085	3.043	1.522	0.609	5.593	2.797	1.398	0.559
	R3 (stream, 1st)	6.480	3.240	1.620	0.648	5.869	2.934	1.467	0.587
	R4 (stream, 1st)	4.579	2.290	1.145	0.458	4.180	2.090	1.045	0.418
5 m SD	D6 (ditch, 1st)	3.693	1.846	0.923	0.369	3.365	1.683	0.841	0.336
	R1 (pond, 1st)	0.250	0.125	0.063	0.025	0.225	0.112	0.056	0.023
	R1 (stream, 1st)	3.307	1.654	0.827	0.331	2.964	1.482	0.741	0.296
	R2 (stream, 1st)	4.394	2.197	1.098	0.439	3.997	1.999	0.999	0.400
	R3 (stream, 1st)	4.679	2.339	1.170	0.468	4.194	2.097	1.048	0.419
	R4 (stream, 1st)	3.306	1.653	0.827	0.331	2.987	1.493	0.747	0.299
10 m SD	D6 (ditch, 1st)	1.300	0.650	0.325	0.130	1.145	0.573	0.286	0.115
	R1 (pond, 1st)	0.135	0.067	0.034	0.014	0.118	0.059	0.030	0.012
	R1 (stream, 1st)	1.164	0.582	0.291	0.116	1.009	0.504	0.252	0.101
	R2 (stream, 1st)	1.547	0.774	0.387	0.155	1.360	0.680	0.340	0.136
	R3 (stream, 1st)	1.647	0.824	0.412	0.165	1.427	0.714	0.357	0.143
	R4 (stream, 1st)	1.164	0.582	0.291	0.116	1.016	0.508	0.254	0.102
15 m SD	D6 (ditch, 1st)	0.694	0.347	0.173	0.070	0.599	0.300	0.150	0.060
	R1 (pond, 1st)	0.090	0.045	0.023	0.009	0.078	0.039	0.019	0.008
	R1 (stream, 1st)	0.622	0.311	0.155	0.062	0.528	0.264	0.132	0.053
	R2 (stream, 1st)	0.826	0.413	0.206	0.083	0.712	0.356	0.178	0.071
	R3 (stream, 1st)	0.880	0.440	0.220	0.088	0.747	0.373	0.187	0.075
	R4 (stream, 1st)	0.622	0.311	0.155	0.062	0.532	0.266	0.133	0.053

Table 9.2.5- 20: FOCUS Step 4 PEC_{sw} values of propineb-DIDT after single and multiple application in grapes EU-C (2 × 1120 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
0 m SD	D6 (ditch, 1st)	1.470	0.736	0.369	0.149	1.362	0.682	0.342	0.138
	R1 (pond, 1st)	0.051	0.025	0.013	0.005	0.049	0.024	0.012	0.005
	R1 (stream, 1st)	0.005	0.005	0.005	0.005	0.062	0.062	0.062	0.062
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R3 (stream, 1st)	1.535	0.768	0.384	0.336	1.390	0.695	0.348	0.336
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.990	0.495	0.248	0.099
5 m SD	D6 (ditch, 1st)	0.877	0.440	0.221	0.090	0.799	0.401	0.201	0.082
	R1 (pond, 1st)	0.059	0.030	0.015	0.006	0.057	0.029	0.014	0.006
	R1 (stream, 1st)	0.005	0.005	0.005	0.005	0.062	0.062	0.062	0.062
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R3 (stream, 1st)	1.108	0.554	0.336	0.336	0.994	0.497	0.336	0.336
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.708	0.354	0.177	0.081
10 m SD	D6 (ditch, 1st)	0.310	0.156	0.079	0.033	0.273	0.138	0.070	0.029
	R1 (pond, 1st)	0.032	0.016	0.008	0.003	0.030	0.015	0.007	0.003
	R1 (stream, 1st)	0.005	0.005	0.005	0.005	0.062	0.062	0.062	0.062
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R3 (stream, 1st)	0.390	0.336	0.336	0.336	0.338	0.336	0.336	0.336
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.241	0.120	0.081	0.081
15 m SD	D6 (ditch, 1st)	0.167	0.085	0.044	0.019	0.144	0.073	0.038	0.016
	R1 (pond, 1st)	0.021	0.011	0.005	0.002	0.020	0.010	0.005	0.002
	R1 (stream, 1st)	0.005	0.005	0.005	0.005	0.062	0.062	0.062	0.062
	R2 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	R3 (stream, 1st)	0.336	0.336	0.336	0.336	0.336	0.336	0.336	0.336
	R4 (stream, 1st)	<0.001	<0.001	<0.001	<0.001	0.126	0.081	0.081	0.081

Grapes EU-S, 2 × 1400 g a.s./ha

FOCUS SW Step 3 values for the application in grapes EU-S are presented in Table 9.2.5- 21 for propineb and in Table 9.2.5- 22 for the metabolite propineb-DIDT.

Table 9.2.5- 21: PEC_{sw} and PEC_{sed} values of propineb in grapes EU-S (2 × 1400 g a.s./ha) for all calculated scenarios according to FOCUS SW Step 3; letters S, D, and R before correspond to the dominant entry path – spray drift, drainage, and runoff

Scenario	Single Application			Multiple Application		
	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D6 (ditch, 1st)	S	23.68	10.95	S	21.07	11.80
R1 (pond, 1st)	S	0.849	0.467	S	0.740	0.407
R1 (stream, 1st)	S	17.44	2.198	S	15.38	1.939
R2 (stream, 1st)	S	23.36	1.676	S	20.61	1.479
R3 (stream, 1st)	S	24.65	4.783	S	21.75	4.220
R4 (stream, 1st)	S	17.15	1.548	S	15.13	1.367

Table 9.2.5- 22: PEC_{sw} and PEC_{sed} values of the metabolite propineb-DIDT in grapes EU-S (2 × 1400 g a.s./ha) for all calculated scenarios according to FOCUS SW Step 3

Scenario	Single Application		Multiple Application	
	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D6 (ditch, 1st)	<0.001	<0.001	<0.001	<0.001
R1 (pond, 1st)	0.018	0.006	0.018	0.006
R1 (stream, 1st)	0.294	0.079	0.467	0.101
R2 (stream, 1st)	0.048	0.017	0.465	0.163
R3 (stream, 1st)	<0.001	<0.001	<0.001	<0.001
R4 (stream, 1st)	0.321	0.074	0.321	0.074

FOCUS SW Step 4 values for single and multiple application in grapes EU-S are presented in Table 9.2.5- 23 for propineb and in Table 9.2.5- 24 for propineb-DIDT.

Table 9.2.5- 23: Summary of FOCUS Step 4 PEC$_{sw}$ values of propineb after single and multiple application in grapes EU-S (2 × 1400 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
0 m SD	D6 (ditch, 1st)	23.68	11.84	5.921	2.368	21.07	10.54	5.268	2.107
	R1 (pond, 1st)	0.849	0.424	0.212	0.085	0.740	0.370	0.185	0.074
	R1 (stream, 1st)	17.44	8.718	4.359	1.744	15.38	7.691	3.846	1.538
	R2 (stream, 1st)	23.36	11.68	5.839	2.336	20.61	10.30	5.152	2.061
	R3 (stream, 1st)	24.65	12.32	6.162	2.465	21.75	10.87	5.437	2.175
	R4 (stream, 1st)	17.15	8.575	4.288	1.715	15.13	7.566	3.783	1.513
5 m SD	D6 (ditch, 1st)	14.32	7.160	3.580	1.432	12.69	6.344	3.172	1.269
	R1 (pond, 1st)	0.985	0.493	0.246	0.099	0.861	0.430	0.215	0.086
	R1 (stream, 1st)	12.70	6.352	3.176	1.270	11.18	5.589	2.795	1.118
	R2 (stream, 1st)	17.02	8.509	4.255	1.702	14.98	7.488	3.744	1.498
	R3 (stream, 1st)	17.96	8.979	4.490	1.796	15.80	7.902	3.951	1.580
	R4 (stream, 1st)	12.50	6.248	3.124	1.250	11.00	5.498	2.749	1.100
10 m SD	D6 (ditch, 1st)	5.187	2.593	1.297	0.519	4.557	2.279	1.139	0.456
	R1 (pond, 1st)	0.543	0.271	0.136	0.054	0.471	0.236	0.118	0.047
	R1 (stream, 1st)	4.601	2.301	1.150	0.460	4.015	2.008	1.004	0.402
	R2 (stream, 1st)	6.164	3.082	1.541	0.616	5.379	2.690	1.345	0.538
	R3 (stream, 1st)	6.505	3.252	1.626	0.650	5.676	2.838	1.419	0.568
	R4 (stream, 1st)	4.526	2.263	1.131	0.453	3.950	1.975	0.987	0.395
15 m SD	D6 (ditch, 1st)	2.818	1.409	0.704	0.282	2.464	1.232	0.616	0.246
	R1 (pond, 1st)	0.368	0.184	0.092	0.037	0.318	0.159	0.080	0.032
	R1 (stream, 1st)	2.500	1.250	0.625	0.250	2.171	1.085	0.543	0.217
	R2 (stream, 1st)	3.349	1.674	0.837	0.335	2.908	1.454	0.727	0.291
	R3 (stream, 1st)	3.534	1.767	0.883	0.353	3.069	1.535	0.767	0.307
	R4 (stream, 1st)	2.459	1.229	0.615	0.246	2.135	1.068	0.534	0.214

Table 9.2.5- 24: Summary of FOCUS Step 4 PEC_{sw} values of propineb-DIDT after single and multiple application in grapes EU-S (2 × 1400 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC_{sw} [µg/L] Drift Reduction				Multiple applications PEC_{sw} [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
0 m SD	D6 (ditch, 1st)	5.610	2.805	1.403	0.561	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.201	0.101	0.050	0.020	0.018	0.018	0.018	0.018
	R1 (stream, 1st)	4.130	2.065	1.033	0.413	0.467	0.467	0.467	0.467
	R2 (stream, 1st)	0.048	0.048	0.048	0.048	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	5.839	2.920	1.460	0.584	<0.001	<0.001	<0.001	<0.001
	R4 (stream, 1st)	4.063	2.031	1.016	0.406	0.321	0.321	0.321	0.321
5 m SD	D6 (ditch, 1st)	3.392	1.696	0.848	0.339	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.233	0.117	0.058	0.023	0.018	0.018	0.018	0.018
	R1 (stream, 1st)	3.009	1.505	0.752	0.301	0.467	0.467	0.467	0.467
	R2 (stream, 1st)	0.048	0.048	0.048	0.048	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	4.254	2.127	1.064	0.425	<0.001	<0.001	<0.001	<0.001
	R4 (stream, 1st)	2.960	1.480	0.740	0.321	0.321	0.321	0.321	0.321
10 m SD	D6 (ditch, 1st)	1.229	0.614	0.307	0.123	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.129	0.064	0.032	0.018	0.018	0.018	0.018	0.018
	R1 (stream, 1st)	1.090	0.545	0.294	0.294	0.467	0.467	0.467	0.467
	R2 (stream, 1st)	0.048	0.048	0.048	0.048	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	1.541	0.770	0.385	0.154	<0.001	<0.001	<0.001	<0.001
	R4 (stream, 1st)	1.072	0.536	0.321	0.321	0.321	0.321	0.321	0.321
15 m SD	D6 (ditch, 1st)	0.668	0.334	0.167	0.067	<0.001	<0.001	<0.001	<0.001
	R1 (pond, 1st)	0.087	0.044	0.022	0.018	0.018	0.018	0.018	0.018
	R1 (stream, 1st)	0.592	0.296	0.294	0.294	0.467	0.467	0.467	0.467
	R2 (stream, 1st)	0.048	0.048	0.048	0.048	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	0.837	0.419	0.209	0.084	<0.001	<0.001	<0.001	<0.001
	R4 (stream, 1st)	0.583	0.321	0.321	0.321	0.321	0.321	0.321	0.321

Tomato EU-C, 4×1680 g a.s./ha

FOCUS SW Step 3 values for the application in tomato EU-C are presented in Table 9.2.5- 25 for propineb and in Table 9.2.5- 26 for its metabolite propineb-DIDT.

Table 9.2.5- 25: PEC_{sw} and PEC_{sed} values of propineb in tomato EU-C (4 × 1680 g a.s./ha) for all calculated scenarios according to FOCUS SW Step 3; letters S, D, and R before correspond to the dominant entry path – spray drift, drainage, and runoff

Scenario	Single Application			Multiple Application		
	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	Entry route	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D6 (ditch, 1st)	S	10.55	2.541	S	7.107	1.737
R2 (stream, 1st)	S	9.374	0.677	S	6.289	0.456
R3 (stream, 1st)	S	9.857	1.849	S	6.613	1.247
R4 (stream, 1st)	S	6.992	0.901	S	4.691	0.627

Table 9.2.5- 26: PEC_{sw} and PEC_{sed} values of the metabolite propineb-DIDT in tomato EU-C (4 × 1680 g a.s./ha) for all calculated scenarios according to FOCUS SW Step 3

Scenario	Single Application		Multiple Application	
	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]	PEC_{sw} [µg/L]	PEC_{sed} [µg/kg]
D6 (ditch, 1st)	2.498	0.380	1.684	0.357
R2 (stream, 1st)	0.064	0.037	0.372	0.218
R3 (stream, 1st)	2.335	0.281	1.567	0.312
R4 (stream, 1st)	2.644	0.655	2.644	0.736

FOCUS SW Step 4 values for single and multiple application in tomato EU-C are presented in Table 9.2.5- 27 for propineb and in Table 9.2.5- 28 for its metabolite propineb-DIDT.

Table 9.2.5- 27: Summary of FOCUS Step 4 PEC_{sw} values of propineb after single and multiple application in tomato EU-C (4 × 1680 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
5 m SD	D6 (ditch, 1st)	2.859	1.429	0.715	0.286	1.904	0.952	0.476	0.190
	R2 (stream, 1st)	3.423	1.712	0.856	0.342	2.277	1.139	0.569	0.228
	R3 (stream, 1st)	3.600	1.800	0.900	0.360	2.395	1.198	0.599	0.240
	R4 (stream, 1st)	2.553	1.277	0.638	0.255	1.699	0.850	0.425	0.170
10 m SD	D6 (ditch, 1st)	1.516	0.758	0.379	0.151	1.005	0.502	0.251	0.100
	R2 (stream, 1st)	1.816	0.908	0.454	0.182	1.201	0.601	0.300	0.120
	R3 (stream, 1st)	1.909	0.955	0.477	0.191	1.263	0.632	0.316	0.126
	R4 (stream, 1st)	1.354	0.677	0.338	0.136	0.896	0.448	0.224	0.090
15 m SD	D6 (ditch, 1st)	1.035	0.518	0.259	0.104	0.684	0.342	0.171	0.069
	R2 (stream, 1st)	1.240	0.620	0.310	0.124	0.818	0.409	0.204	0.082
	R3 (stream, 1st)	1.304	0.652	0.326	0.131	0.860	0.430	0.215	0.086
	R4 (stream, 1st)	0.925	0.463	0.231	0.093	0.610	0.305	0.153	0.061
20 m SD	D6 (ditch, 1st)	0.788	0.394	0.197	0.079	0.519	0.260	0.130	0.052
	R2 (stream, 1st)	0.943	0.472	0.236	0.094	0.621	0.310	0.155	0.062
	R3 (stream, 1st)	0.992	0.496	0.248	0.099	0.653	0.326	0.163	0.065
	R4 (stream, 1st)	0.704	0.352	0.176	0.070	0.463	0.232	0.116	0.046

Table 9.2.5- 28: Summary of FOCUS Step 4 PEC_{sw} values of propineb-DIDT after single and multiple application in tomato EU-C (4 × 1680 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC$_{sw}$ [µg/L] Drift Reduction				Multiple applications PEC$_{sw}$ [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
5 m SD	D6 (ditch, 1st)	0.677	0.339	0.169	0.068	0.451	0.226	0.113	0.045
	R2 (stream, 1st)	0.064	0.064	0.064	0.064	0.372	0.372	0.372	0.372
	R3 (stream, 1st)	0.853	0.426	0.395	0.395	0.567	0.395	0.395	0.395
	R4 (stream, 1st)	2.644	2.644	2.644	2.644	2.644	2.644	2.644	2.644
10 m SD	D6 (ditch, 1st)	0.359	0.180	0.090	0.036	0.238	0.119	0.060	0.024
	R2 (stream, 1st)	0.064	0.064	0.064	0.064	0.372	0.372	0.372	0.372
	R3 (stream, 1st)	0.452	0.395	0.395	0.395	0.395	0.395	0.395	0.395
	R4 (stream, 1st)	2.644	2.644	2.644	2.644	2.644	2.644	2.644	2.644
15 m SD	D6 (ditch, 1st)	0.245	0.123	0.061	0.025	0.162	0.081	0.041	0.016
	R2 (stream, 1st)	0.064	0.064	0.064	0.064	0.372	0.372	0.372	0.372
	R3 (stream, 1st)	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395
	R4 (stream, 1st)	2.644	2.644	2.644	2.644	2.644	2.644	2.644	2.644
20 m SD	D6 (ditch, 1st)	0.187	0.093	0.047	0.019	0.123	0.062	0.031	0.012
	R2 (stream, 1st)	0.064	0.064	0.064	0.064	0.372	0.372	0.372	0.372
	R3 (stream, 1st)	0.395	0.395	0.395	0.395	0.395	0.395	0.395	0.395
	R4 (stream, 1st)	2.644	2.644	2.644	2.644	2.644	2.644	2.644	2.644

Tomato EU-C, 4 × 2100 g a.s./ha

FOCUS SW Step 3 values for the application in tomato EU-C are presented in Table 9.2.5- 29 for propineb and in Table 9.2.5- 30 for the metabolite propineb-DIDT.

Table 9.2.5- 29: PEC$_{sw}$ and PEC$_{sed}$ values of propineb in tomato EU-C (4 × 2100 g a.s./ha) for all calculated scenarios according to FOCUS SW Step 3; letters S, D, and R before correspond to the dominant entry path – spray drift, drainage, and runoff

Scenario	Single Application			Multiple Application		
	Entry route	PEC$_{sw}$ [µg/L]	PEC$_{sed}$ [µg/kg]	Entry route	PEC$_{sw}$ [µg/L]	PEC$_{sed}$ [µg/kg]
D6 (ditch, 1st)	S	13.19	3.177	S	8.881	2.171
R2 (stream, 1st)	S	11.72	0.846	S	7.862	0.570
R3 (stream, 1st)	S	12.32	2.311	S	8.267	1.559
R4 (stream, 1st)	S	8.740	1.126	S	5.865	0.784

Table 9.2.5- 30: PEC$_{sw}$ and PEC$_{sed}$ values of metabolite propineb-DIDT in tomato EU-C (4 × 2100 g a.s./ha), for all calculated scenarios according to FOCUS SW Step 3

Scenario	Single Application		Multiple Application	
	PEC$_{sw}$ [µg/L]	PEC$_{sed}$ [µg/kg]	PEC$_{sw}$ [µg/L]	PEC$_{sed}$ [µg/kg]
D6 (ditch, 1st)	3.123	0.475	2.104	0.446
R2 (stream, 1st)	0.080	0.047	0.465	0.272
R3 (stream, 1st)	2.919	0.351	1.959	0.390
R4 (stream, 1st)	3.305	0.819	3.305	0.920

FOCUS SW Step 4 values for single and multiple application in tomato EU-C are presented in Table 9.2.5- 31 for propineb and in Table 9.2.5- 32 for its metabolite propineb-DIDT.

Table 9.2.5- 31: Summary of FOCUS Step 4 PEC_{sw} values of propineb after single and multiple application in tomato EU-C (4 × 2100 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC_{sw} [µg/L] Drift Reduction				Multiple applications PEC_{sw} [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
5 m SD	D6 (ditch, 1st)	3.573	1.787	0.893	0.357	2.381	1.190	0.595	0.238
	R2 (stream, 1st)	4.279	2.140	1.070	0.428	2.847	1.424	0.712	0.285
	R3 (stream, 1st)	4.499	2.250	1.125	0.450	2.994	1.497	0.748	0.299
	R4 (stream, 1st)	3.192	1.596	0.798	0.319	2.124	1.062	0.531	0.212
10 m SD	D6 (ditch, 1st)	1.895	0.947	0.474	0.190	1.256	0.628	0.314	0.126
	R2 (stream, 1st)	2.269	1.135	0.567	0.227	1.502	0.751	0.375	0.150
	R3 (stream, 1st)	2.386	1.193	0.597	0.239	1.579	0.789	0.395	0.158
	R4 (stream, 1st)	1.693	0.846	0.423	0.169	1.120	0.560	0.280	0.112
15 m SD	D6 (ditch, 1st)	1.294	0.647	0.324	0.129	0.855	0.428	0.214	0.086
	R2 (stream, 1st)	1.550	0.775	0.387	0.155	1.023	0.511	0.255	0.102
	R3 (stream, 1st)	1.630	0.815	0.407	0.163	1.075	0.538	0.269	0.108
	R4 (stream, 1st)	1.156	0.578	0.289	0.116	0.763	0.381	0.191	0.076
20 m SD	D6 (ditch, 1st)	0.985	0.492	0.246	0.098	0.649	0.325	0.162	0.065
	R2 (stream, 1st)	1.179	0.590	0.295	0.118	0.776	0.388	0.194	0.078
	R3 (stream, 1st)	1.240	0.620	0.310	0.124	0.816	0.408	0.204	0.082
	R4 (stream, 1st)	0.880	0.440	0.220	0.088	0.579	0.289	0.145	0.058

Table 9.2.5- 32: Summary of FOCUS Step 4 PEC_{sw} values of propineb-DIDT after single and multiple application in tomato EU-C (4 × 2100 g a.s./ha) with mitigation options; SD denotes spray drift buffer

Buffer Width & Type	Scenario	Single application PEC_{sw} [µg/L] Drift Reduction				Multiple applications PEC_{sw} [µg/L] Drift Reduction			
		0%	50%	75%	90%	0%	50%	75%	90%
5 m SD	D6 (ditch, 1st)	0.846	0.423	0.212	0.085	0.564	0.282	0.141	0.056
	R2 (stream, 1st)	0.080	0.080	0.080	0.080	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	1.066	0.533	0.493	0.493	0.709	0.493	0.493	0.493
	R4 (stream, 1st)	3.305	3.305	3.305	3.305	3.305	3.305	3.305	3.305
10 m SD	D6 (ditch, 1st)	0.449	0.224	0.112	0.045	0.298	0.149	0.074	0.030
	R2 (stream, 1st)	0.080	0.080	0.080	0.080	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	0.565	0.493	0.493	0.493	0.493	0.493	0.493	0.493
	R4 (stream, 1st)	3.305	3.305	3.305	3.305	3.305	3.305	3.305	3.305
15 m SD	D6 (ditch, 1st)	0.307	0.153	0.077	0.031	0.203	0.101	0.051	0.020
	R2 (stream, 1st)	0.080	0.080	0.080	0.080	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	0.493	0.493	0.493	0.493	0.493	0.493	0.493	0.493
	R4 (stream, 1st)	3.305	3.305	3.305	3.305	3.305	3.305	3.305	3.305
20 m SD	D6 (ditch, 1st)	0.233	0.117	0.058	0.023	0.154	0.077	0.038	0.015
	R2 (stream, 1st)	0.080	0.080	0.080	0.080	0.465	0.465	0.465	0.465
	R3 (stream, 1st)	0.493	0.493	0.493	0.493	0.493	0.493	0.493	0.493
	R4 (stream, 1st)	3.305	3.305	3.305	3.305	3.305	3.305	3.305	3.305

CP 9.3 Fate and behaviour in air

For information on the fate and behaviour in air please refer to MCA Section 7, data point 7.3.

CP 9.3.1 Route and rate of degradation in air and transport via air

For information on route and rate of degradation in air and transport via air please refer to MCA Section 7, data points 7.3.1 and 7.3.2.

CP 9.4 Estimation of concentrations for other routes of exposure

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