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| REGISTRATION REPORT  Part B  Section 8  Environmental Fate  Detailed summary of the risk assessment |
| Product code: BAS 743 03 F  Product name(s): **DIVEXO**  Chemical active substances:  Ametoctradin 120 g/L  Propamocarb hydrochloride 451 g/L |
| Central Zone  Zonal Rapporteur Member State: Poland |
| CORE ASSESSMENT (authorization of product) |
| Applicant: XXXX  Submission date: October 2023 (update April 2024)  Evaluation date: May 2024  MS Finalisation date: November 2024 |

Version history

|  |  |
| --- | --- |
| When | What |
| October 2023 | Initial dRR – XXXX Doc ID 2023/2029341 |
| April 2024 | dRR update - XXXX Doc ID 2024/2010832  - Updated footnote in GAP table for minor uses (Article 51)  -Additional worst-case PECsoil calculation using Excel PECsoil calculator for ametoctradin and its metabolites.  - Worst-case PECGW calculations of propamocarb HCl using PUF=0 |
| May 2024 | zRMS finalised dRR evaluation |
| November 2024 | Revised version addressing the comments resived |

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# Fate and behaviour in the environment (KCP 9)

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| **Review Comments:**  This document describes the acceptable use conditions required for registration of DIVEXO (BAS 743 03 F), a SC formulation containing 120 g/L Ametoctradin and 451 g/L Propamocarb hydrochloride (=378 g/L Propamocarb) for the use as fungicide in potato, onion, tomato and aubergine.  This Part B document only reviews data and additional information that has not previously been considered within the EU review process.  Since this document is based on the information provided by the applicant, all review comments, additions and corrections have been made using commenting boxes or highlighted in grey. |

## Critical GAP and overall conclusions

Table ‑: Critical use pattern of the formulated product

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | |  | | | | | |  | | GAP rev. 2.0, date: 2023-05-15 | | | |
| PPP (product name/code): | | | | DIVEXO / BAS 743 03 F | | | | | | Formulation type: | | Suspension concentrate (SC) (a, b) | | | |
| Active substance 1: | | | | Ametoctradin\* (Initium) | | | | | | Conc. of as 1: | | 120 g/L (c) | | | |
| Active substance 2: | | | | Propamocarb hydrochloride\*\* | | | | | | Conc. of as 2: | | 451 g/L (equivalent to 378 g Propamocarb/L) (c) | | | |
| Safener: | | | | None | | | | | | Conc. of safener: | | Not relevant (c) | | | |
| Synergist: | | | | None | | | | | | Conc. of synergist: | | Not relvant (c) | | | |
| Applicant: | | | | XXXX | | | | | | Professional use: | |  | | | |
| Zone(s): | | | | Central (d) | | | | | | Non professional use: | |  | | | |
| Verified by MS: | | | | yes/no | | | | | |  | |  | | | |
|  | | | |  | | | | | |  | |  | | | |
| Field of use: | | | | Fungicide | | | | | |  | |  | | | |
| 1 | 2 | 3 | | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
| **Use-No. (e)** | **Member state(s)** | **Crop and/ or situation  (crop destination / purpose of crop)** | | **F, Fn, Fpn G, Gn, Gpn or I** | **Pests or Group of pests controlled** (additionally: developmental stages of the pest or pest group) | **Application** | | | | **Application rate** | | | **PHI** (days) | **Remarks:**   e.g. g safener/synergist per ha  (f) | |
| 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 |
| **Zonal uses (field or outdoor uses, certain types of protected crops)** | | | | | | | | | | | | | | | |
| 1 | BE, IE, NL | Potato (including seed potatoes) (SOLTU) | | F | *Phytophthora infestans* (PHYTIN) | SP | BBCH 21-89 | a) 3  b) 3 | 5 | a) 2  b) 6 | a) 0.24(\*) + 0.902(\*\*)  b) 0.72(\*) + 2.706(\*\*) | 100/1000 | 7 | Spray interval: 5-10 days  Water volume:  NL: 150/400 L/ha  IE: 200/400 L/ha  Applications only every 2nd year | |
| 2 | PL HU, RO, SI, SK AT, CZ, DE | Potato (including seed potatoes) (SOLTU) | | F | *Phytophthora infestans* (PHYTIN) | SP | BBCH 21-89 | a) 2  b) 2 | 5 | a) 2  b) 4 | a) 0.24(\*) + 0.902(\*\*)  b) 0.48(\*) + 1.804(\*\*) | 200/400 | 7 | Spray interval: 5-10 days  Dose rate range for HU, RO, SI, SK: 1,5-2 L/ha | |
| 3 | BE, IE, NL, PL, RO | Onion  (ALLCE), Garlic (ALLSA) | | F | *Peronospora destructor*  (PERODE) | SP | BBCH 14 - 49 | a) 2  b) 2 | 5 | a) 2  b) 4 | a) 0.24(\*) + 0.902(\*\*)  b) 0.48(\*) + 1.804(\*\*) | 200/1000 | 7 | Spray interval: 5-10 days  Water volume:  NL, PL: 200/800 L/ha  IE. 200/700 L/ha  Applications only every 2nd year | |
| 4 | AT, CZ, DE, HU, SK, SI | Onion  (ALLCE), Garlic (ALLSA) | | F | *Peronospora destructor*  (PERODE) | SP | BBCH 14 - 49 | a) 1  b) 1 | NA | a) 2  b) 2 | a) 0.24(\*) + 0.902(\*\*)  b) 0.24(\*) + 0.902(\*\*) | 200/1000 | 7 |  | |
| 5 | PL,  HU, RO, SK, SI | Tomato / Aubergine  (LYPES) / (SOLME) | | F | *Phytophthora infestans* (PHYTIN) | SP | BBCH 21-89 | a) 2  b) 2 | 7 | a) 2  b) 4 | a) 0.24(\*) + 0.902(\*\*)  b) 0.48(\*) + 1.804(\*\*) | 150/500 | 1 | Spray interval: 7-10 days | |
| Minor uses according to Article 51 (zonal uses)a | | | | | | | | | | | | | | | |
| ~~6~~ | ~~NL~~ | ~~Floriculture crops DTG .2)~~  ~~(unprotected culture)~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~  *~~Phytophthora spp (~~*~~PHYTSP)~~ | ~~Foliar treatment~~ | ~~BBCH 12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~7~~ | ~~NL~~ | ~~Avenue trees~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH 12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~8~~ | ~~NL~~ | ~~Climbing Plants~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH 12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~9~~ | ~~NL~~ | ~~Conifers (incl. Christmas trees)~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH-12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~10~~ | ~~NL~~ | ~~Ornamental shrubs (incl. roses)~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH-12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~11~~ | ~~NL~~ | ~~Heather~~ | | ~~F~~ | *~~Phytophthora spp (~~*~~PHYTSP)~~ | ~~Foliar Treatment~~ | ~~BBCH-12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~12~~ | ~~NL~~ | ~~Forest trees and hedging plants~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH-12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~13~~ | ~~NL~~ | ~~Fruit trees and shrubs~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH-12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| ~~14~~ | ~~NL~~ | ~~Perennial crops~~ | | ~~F~~ | *~~Peronospora sp~~* ~~(PEROSP)~~ | ~~Foliar Treatment~~ | ~~BBCH-12-59 (Apr-Sep)~~ | ~~a) 2~~  ~~b) 2~~ | ~~7~~ | ~~a) 2~~  ~~b) 4~~ | ~~a) 0.24(\*) + 0.902(\*\*)~~  ~~b) 0.48(\*) + 1.804(\*\*)~~ | ~~500~~ | ~~NA~~ |  | |
| \*Ametoctradin, \*\*Propamocarb HCl | | | | | | | | | | | | | | | |
| a The Minor use GAPs according to Article 51 are solely uses in the Netherlands, therefore, at the request of zRMS Poland they should be evaluated entirely on a national level by cMS NL. No PEC calculations following zonal requirements for these uses are provided in this dossier. | | | | | | | | | | | | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Remarks  table heading: | (a) e.g. wettable powder (WP), emulsifiable concentrate (EC), granule (GR)  (b) Catalogue of pesticide formulation types and international coding system CropLife  International Technical Monograph n°2, 6th Edition Revised May 2008  (c) g/kg or g/l |  | (d) Select relevant  (e) Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1  (f) No authorization possible for uses where the line is highlighted in grey, Use should be crossed out when the notifier no longer supports this use. |
|  |  |  |  |
| Remarks  columns: | 1 Numeration necessary to allow references  2 Use official codes/nomenclatures of EU Member States  3 For crops, the EU and Codex classifications (both) should be used; when relevant, the  use situation should be described (e.g. fumigation of a structure)  4 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  5 Scientific names and EPPO-Codes of target pests/diseases/ weeds or, when relevant, the common names of the pest groups (e.g. biting and sucking insects, soil born insects, foliar fungi, weeds) and the developmental stages of the pests and pest groups at the moment of application must be named.  6 Method, e.g. high volume spraying, low volume spraying, spreading, dusting, drench Kind, e.g. overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated. |  | 7 Growth stage at first and last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3‑8263-3152-4), including where relevant, information on season at time of application  8 The maximum number of application possible under practical conditions of use must be provided.  9 Minimum interval (in days) between applications of the same product  10 For specific uses other specifications might be possible, e.g.: g/m³ in case of fumigation of empty rooms. See also EPPO-Guideline PP 1/239 Dose expression for plant protection products.  11 The dimension (g, kg) must be clearly specified. (Maximum) dose of a.s. per treatment (usually g, kg or L product / ha).  12 If water volume range depends on application equipments (e.g. ULVA or LVA) it should be mentioned under “application: method/kind”.  13 PHI - minimum pre-harvest interval  14 Remarks may include: Extent of use/economic importance/restrictions |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table 8.1‑2: Assessed (critical) uses during approval of ametoctradin (representative formulation BAS 650 00 F) concerning 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: developmental 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 (min. interval between applications)  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 | kg as/ha  a) max. rate per appl.  b) max. total rate per crop/season | Water L/ha  min/max |
| 1 | NEU | Potato | F | Phytophthora infestans | Spray | 19-89 a  37-89 b | a) 4  b) n.s. | 7 | a) 0.8  b) 3.2 | a) 0.24  b) 0.96 | 100 / 500 | 7 | Application every 3rd year assessed for PECgw |
| 2 | SEU | Potato | F | Phytophthora infestans | Spray | 19-89 a  37-89 b | a) 4  b) n.s. | 7 | a) 0.8  b) 3.2 | a) 0.24  b) 0.96 | 100 / 1000 | 7 | Application every 3rd year assessed for PECgw |
| 3 | NEU  SEU | Tomato | F + G | Phytophthora infestans | Spray | 10-89 | a) 3  b) n.s . | 7 | a) 0.8  b) 2.4 | a) 0.24  b) 0.72 | 200 / 1000 | 1 |  |
| a Early scenario for potatoes  b Late scenario for potatoes  ns: not specified  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 | | | | | | | | | | | | | |

**Table 8.1‑3 Assessed (critical) uses during approval of propamocarb HCl concerning Environmental Fate**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop and/or situation** | **Country** | **Product name** | **F G**  **or I** | **Pests or Group of pests controlled** | **Preparation** | | **Application** | | | | **Application rate per treatment** | | | **PHI**  **(days)**  **(l)** | **Remarks:**  **(m)** |
| **(a)** |  |  | **(b)** | **(c)** | **Type**  **(d-f)** | **Conc. of a.s.**  **(i)** | **method kind**  **(f-h)** | **growth stage & season**  **(j)** | **number min max**  **(k)** | **interval between applications (min)** | **kg as/hl min max** | **water L/ha**  **min max** | **kg as/ha min max** |  |  |
| Bayer CropScience | | | | | | | | | | | | | | | |
| Lettuce | North and South | Previcur N | F/ G | *Bremia lactucae* | SL | 0.72  kg/L | Drench | - | 2 | T1: after seeding  T2: before transplanting | T1: 0.360  T2: 0.18 | 20000 | T1: 72.2  (10 ml/m2) T2: 36.1  (5 ml/m2) | 21 |  |
|  |  |  |  |  |  |  | Foliar spray | - | 2 | T3: just after transplanting T4: 12-16 d  after transplanting | T3 & T4:  0.072 - 0.415 | 400 - 2000 | T3 & T4: 1.44  - 1.66 |  |  |
| Tomato rockwool | North and South | Previcur N | G | *Phytophtora spp.*  *Pythium spp.* | SL | 0.72  kg/L | Drench | -- | 1 | T1: 0-10d after seeding | T1: 0.058-  0.144 | 20000 - 50000 | T1: 28.9  (4 ml/m2) | 3 |  |
|  |  |  |  |  |  |  | Nutrient solution | - | 4 | T2: just after transplanting T3: T2 + 7 d  T4: maturing T5: T5 + 7-10 d | T2, T3, T4 & T5:  0.024 - 0.12 | 3000 | T2, T3, T4 & T5: 0.722-  2.166 |  |  |
| Tomato  (soil grown crop) | Indoor & outdoor in South | Previcur N | G  & F | *Phytophora spp.*  *Pythium spp.* | SL | 722  g/L | Drench | - | 2 | T1: 0 –10 d  after seeding  T2: 7-10d  before transplanting | T1: 0.36  T2: 0.18 | 20,000 – 40,000 | T1 & T2: 72.2  (10 ml/m2) | 3 | Protected in field (Plastic tunnel) |
|  |  |  |  |  |  |  | Nutrient solution | - | 2 | T3: maturing  T4: T3 + 7-10d | T3 &T4: 0.0722 | 3,000 | T3 &T4: 2.166 |  | Outdoor only in Southern Europe |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crop and/or situation** | **Country** | | | **Product name** | **F Gor I** | **Pests or Group of pests controlled** | **Preparation** | | **Application** | | | | | | **Application rate per treatment** | | | **PHI**  **(days)**  **(l)** | **Remarks:**  **(m)** | |
| **(a)** |  | | |  | **(b)** | **(c)** | **Type**  **(d-f)** | **Conc. of a.s.**  **(i)** | **method kind**  **(f-h)** | **growth stage & season**  **(j)** | **number min max**  **(k)** | | **interval between applications (min)** | | **kg as/hl min max** | **water L/ha**  **min max** | **kg as/ha min max** |  |  | |
| Chimac Agriphar | | | | | | | | | | | | | | | | | | | | |
| Lettuce | N & S | | | Proplant | G  F  & G | *Damping off: Phytophtora spp. / Pythium spp.* | SL | 722  g/L | Drench in nurseries | - | 2 max | | T1: at sowing  T2: before transplanting | | T1 & T2: 0.06 - 0.24 | 30,000  – 60,000  (3-6  L/m2) | T1 & T2: 36.1-72.2  (5-10ml/m2) | n.a. | 5-10 ml  Proplant/m2 : 3-6  L of 0.15%  solution (15ml Proplant in 10L water) / m2 | |
|  |  | | |  |  |  |  |  |  |  | |  | |  |  |  |  | USED IN NURSERIES | |
|  |  | | |  | *Bremia lactucae* |  |  | Foliar spray | - | 3 max | | T3: after transplanting | | T3-T5: 0.072 | 1500 L | T3-T5 : 1.083 | 21 | 1.5 L Proplant/ha | |
|  |  | | |  |  |  |  |  |  |  | | T4/T5 :repeat after 10 days | |  |  |  |  |  | |
| Potatoes | N & S | | | Proplant | F | *Mildew: Phytophtora infestans* | SL | 722  g/L | Foliar spray | As 1st symptoms occur | 6 max | | Repeat each 7 days | | T1-T6 : 0.216 | 500 L | T1-T6 : 1.083 | 14 | 1.5 L Proplant/ha in association with half rate of applic. of any contact fungicide  e.g. 1.6 kg/ha mancozeb or 1.0 kg/ha chlorothalonil | |
| **Remarks:** | | \* | Uses for which risk assessment could not been concluded due to lack of essential data are marked grey | | | | | | | | | (h) | | Kind, *e.g.* overall, broadcast, aerial spraying, row, individual plant, between the plants - type of equipment used must be indicated | | | | | |
| (a) | For crops, the EU and Codex classifications (both) should be used; where relevant,  the use situation should be described (*e.g.* fumigation of a structure) | | | | | | | | | (i) | | g/kg or g/L | | | | | |
| (j) | | Growth stage at last treatment (BBCH Monograph, Growth Stages of Plants, 1997, Blackwell, ISBN 3-8263-3152-4), including where relevant, information on  season at time of application | | | | | |
| (b) | Outdoor or field use (F), glasshouse application (G) or indoor application (I) | | | | | | | | |
| (c) | *e.g.* biting and suckling insects, soil born insects, foliar fungi, weeds | | | | | | | | |
| (d) | *e.g.* wettable powder (WP), emulsifiable concentrate (EC), granule (GR) | | | | | | | | | (k) | | The minimum and maximum number of application possible under practical  conditions of use must be provided | | | | | |
| (e) | GCPF Codes - GIFAP Technical Monograph No 2, 1989 | | | | | | | | |
| (f) | Method, *e.g.* high volume spraying, low volume spraying, spreading, dusting, drench | | | | | | | | | (l) | | PHI - minimum pre-harvest interval | | | | | |
| (g) | All abbreviations used must be explained | | | | | | | | | (m) | | Remarks may include: Extent of use/economic importance/restrictions | | | | | |

North of Europe (N) or South of Europe (S)

## Metabolites considered in the assessment

### Ametoctradin and its metabolites

Table ‑: Metabolites of ametoctradin (BAS 650F) potentially relevant for exposure assessment

| Metabolite | Molar mass | Chemical structure | Maximum observed occurrence in compartments | Exposure assessment required due to |
| --- | --- | --- | --- | --- |
| M650F01 | 249.3 |  | Soil: max. 53.9 %  (Li10, 10 DAT)  Water: max. 21.3 %  (Ranschgraben, 2 DAT)  Sediment: max. 1.6 % a  (Ranschgraben, 2 DAT) | PECsoil: yes  PECGW: yes  PECSW: yes  PECSED: no |
| M650F02 | 235.3 |  | Soil: max. 13.0 %  (Bruch West, 3 DAT)  Water: max. 10.2 %  (Ranschgraben, 4 DAT)  Sediment: max. 3.2 %  (Berghäuser Altrhein, 14 DAT) | PECsoil: yes  PECGW: yes  PECSW: yes  PECSED: no |
| M650F03 | 221.2 |  | Soil: max. 57.0 %  (Bruch West, 10 DAT)  Water: max. 55.3 %  (Ranschgraben, 7 DAT)  Sediment: max. 19.6 %  (Berghäuser Altrhein, 59 DAT, mean of two replicates) | PECsoil: yes  PECGW: yes  PECSW: yes  PECSED: yes |
| M650F04 | 207.2 |  | Soil: max. 55.7 %  (LUFA 5M, 120 DAT, maximum of two replicates)  Water: max. 14.4 %  (Ranschgraben, 81 DAT)  Sediment: max. 6.1 % a  (Berghäuser Altrhein, 81 DAT) | PECsoil: yes  PECGW: yes  PECSW: yes  PECSED: yes |
| a Incorrect value in EFSA conclusion (2012)[[1]](#footnote-1).  DAT = days after treatment | | | | |

### Propamocarb HCl

It is assumed that no relevant metabolite of propamocarb HCl in soil, water or sediment would occur which is not already present as a natural component of water.

## Rate of degradation in soil (KCP 9.1.1)

Studies on degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substances.

### Aerobic degradation in soil (KCP 9.1.1.1)

#### Ametoctradin and its metabolites

All studies to be considered for soil risk assessment were already peer-reviewed and summarized for ametoctradin in the EFSA conclusion [*EFSA (2012): Conclusion on the peer review of the pesticide risk assessment of the active substance ametoctradin (BAS 650 F). EFSA Journal 2012;10(11):2921*].

Rate of degradation in soil for ametoctradin and its metabolites and formation fraction under laboratory studies used for groundwater modelling are summarised in Table 8.3‑1 to Table 8.3‑6. The degradation scheme of ametoctradin used in the simulations is shown in Figure 8.3-1.

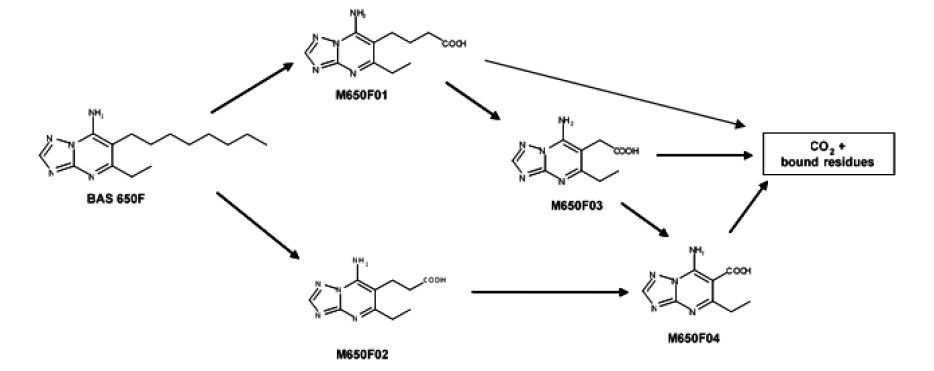


Figure 8.3-1: Proposed route of degradation of ametoctradin in soil

| Table ‑: Summary of aerobic degradation rates for ametoctradin (BAS 650 F) - laboratory studies | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ametoctradin, laboratory studies, aerobic conditions | | | | | | | | | | |
| Soil name | Soil type (USDA) | pH  (CaCl2) | Temp.  [°C] | MWHC [%] | DT50 [d] a | DT90 [d] a | DT50 [d] 20°C  pF2/10kPa | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Bruch West | Sandy loam | 7.3 | 20 | 40 | 1.3 | 6.3 | 1.5 | 12.9 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 5M | Sandy loam | 7.3 | 20 | 40 | 1.5 | 8.4 | 1.1 | 12.9 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 5.6 | 20 | 40 | 1.8 | 7.7 | 1.9 | 11.1 | SFO-SFO | Y (EFSA, 2012) |
| Li 10 | Loamy sand | 6.3 | 20 | 40 | 3.2b | 13.3 | 3.2 | 9.2 | SFO-SFO | Y (EFSA, 2012) |
| **Geometric mean (n=4)** | | | | | | | **1.8c** | | | |
| **pH-dependency:** | | | | | | | **no** | | | |

a DT50 values from DFOP-SFO approach (metabolites included in fit).

b For PECsoil calculation, the worst-case DT50 from Li 10 soil derived from kinetic DFOP-SFO approach (k1 = 0.2361 1/d, k2 = 0.0052 1/d and g = 0.9361) was used (DAR, 2011)[[2]](#footnote-2).

c A geometric mean DT50 value from kinetic SFO-SFO approach 1.79 days (n=4) was used for PECGW and PECSW/SED calculations.

| Table ‑: Summary of aerobic degradation rates for metabolite M650F01 from parent studies - laboratory studies | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| M650F01, laboratory studies, aerobic conditions | | | | | | | | | | |
| Soil name | Soil type (USDA) | pH  (CaCl2) | Temp.  [°C] | MWHC [%] | DT50 [d] a | DT90 [d] a | DT50 [d] 20°C  pF2/10kPa | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Bruch West | Sandy loam | 7.3 | 20 | 40 | 2.4 | 7.9 | 1.9 | 14.4 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 5M | Sandy loam | 7.3 | 20 | 40 | 1.6 | 5.4 | 0.8 | 25.2 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 5.6 | 20 | 40 | 3.9 | 12.9 | 2.3 | 17.2 | SFO-SFO | Y (EFSA, 2012) |
| Li 10 | Loamy sand | 6.3 | 20 | 40 | 10.8b | 36.0 | 9.2 | 17.0 | SFO-SFO | Y (EFSA, 2012) |
| **Geometric mean (n=4)** | | | | | | | **2.4c** | | | |
| **pH-dependency:** | | | | | | | **no** | | | |

a DT50 values from DFOP-SFO approach (best fit kinetic for parent).

b The maximum occurrence of M650F01 in was found in the soil Li 10 at day 10 with an amount of 53.9% AR. The worst-case DT50 10.8 days taken from DFOP-SFO approach (Li 10 soil) was used together with the associated fitted formation fraction 92.8% for PECsoil calculation since DT50 and kinetic formation fraction are related (DAR, 2011).

c A geometric mean DT50 value from kinetic SFO-SFO approach 2.4 days (n=4) was used for PECGW and PECSW/SED calculations.

| Table ‑: Summary of aerobic degradation rates for metabolite M650F02 from parent studies - laboratory studies | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| M650F02, laboratory studies, aerobic conditions | | | | | | | | | | |
| Soil name | Soil type (USDA) | pH  (CaCl2) | Temp.  [°C] | MWHC [%] | DT50 [d] a | DT90 [d] a | DT50 [d] 20°C  pF2/10kPa | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Bruch West | Sandy loam | 7.3 | 20 | 40 | 8.2 | 27.1 | 7.9 | 29.7 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 5M | Sandy loam | 7.3 | 20 | 40 | 5.3 | 17.5 | 3.6 | 29.6 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 5.6 | 20 | 40 | 21.6b | 71.8 | 6.3 | 31.8 | SFO-SFO | Y (EFSA, 2012) |
| Li 10 | Loamy sand | 6.3 | 20 | 40 | 7.3 | 24.2 | 17.5 | 27.5 | SFO-SFO | Y (EFSA, 2012) |
| **Geometric mean (n=4)** | | | | | | | **7.5c** | | | |
| **pH-dependency:** | | | | | | | **no** | | | |

a DT50 values from DFOP-SFO approach (best fit kinetic for parent).

b The maximum occurrence of M650F02 in soil was found in the soil Bruch-West at day 3 with an amount of 13% AR. The worst-case DT50 21.6 days taken from DFOP-SFO approach (Lufa 2.2 soil) was used together with the associated fitted formation fraction for PECsoil calculation, since DT50 and kinetic formation fraction are related (DAR, 2011).

c A geometric mean DT50 value from kinetic SFO-SFO approach 7.5 days (n=4) was used for PECGW and PECSW/SED calculations.

| Table ‑: Summary of aerobic degradation rates for metabolite M650F03 - laboratory studies | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| M650F03, laboratory parent studies, aerobic conditions | | | | | | | | | | |
| Soil name | Soil type (USDA) | pH  (CaCl2) | Temp.  [°C] | MWHC [%] | DT50 [d] a | DT90 [d] a | DT50 [d] 20°C  pF2/10kPa | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Bruch West | Sandy loam | 7.3 | 20 | 40 | 65.7 | 218 | 72.6 | 11.8 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 5M | Sandy loam | 7.3 | 20 | 40 | 28.3 | 94.1 | 22.1 | 11.3 | SFO-SFO | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 5.6 | 20 | 40 | 55.9 | 186 | 59.8 | 8.3 | SFO-SFO | Y (EFSA, 2012) |
| Li 10 | Loamy sand | 6.3 | 20 | 40 | 84.2 | 280 | 80.6 | 14.0 | SFO-SFO | Y (EFSA, 2012) |
| M650F03, laboratory metabolite studies, aerobic conditions, normalized, optimized fit | | | | | | | | | | |
| Soil name | Soil type (USDA) | pH  (CaCl2) | Temp.  [°C] | MWHC [%] | DT50 [d] | DT90 [d] | DT50 [d] 20°C  pF2/10kPa | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Lufa 3A | Loam | 7.3 | 20 | 40 | 73.4 | - | 43.8 | 7.2 | SFO | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 5.7 | 20 | 40 | 43.1 | - | 43.1 | 9.2 | SFO | Y (EFSA, 2012) |
| Lufa 2.3 | Sandy loam | 6.7 | 20 | 40 | 29.7 | - | 29.7 | 3.9 | SFO | Y (EFSA, 2012) |
| Wisconsin | Sand | 5.4 | 20 | 40 | 31.2 | - | 31.2 | 6.1 | SFO | Y (EFSA, 2012) |
| **pH-dependency:** | | | | | | | **no** | | | |
| **Overall geometric mean (parent + metabolite studies, n=8)** | | | | | | | **43.8b** | | | |

a DT50 values from DFOP-SFO approach (best fit kinetic for parent).

b An overall geometric mean DT50 value 43.8 days (n=8) was used for PECGW and PECSW/SED calculations. For PECsoil endpoint, please see field DT50 of M650F03.

| Table ‑: Summary of aerobic degradation rates for metabolite M650F04 obtained from metabolite studies- laboratory studies | | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type (USDA) | | pH  (CaCl2) | | Temp.  [°C] | | | MWHC [%] | | DT50 [d] | | DT90 [d] | | DT50 [d] 20°C  pF2/10kPa | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| M650F04, laboratory parent studies, aerobic conditions | | | | | | | | | | | | | | | | | |
| Bruch West | Sandy loam | | 7.3 | | 20 | | | 40 | | 234 | | 809 | | n.a. | 17.6 | SFO | Y (EFSA, 2012) |
| **M650F04, laboratory metabolite studies, aerobic conditions, best fit kinetics** | | | | | | | | | | | | | | | | | |
| Lufa 3A | Loam | | 7.2 | | 20 | | | 40 | | 27.4 | | 138 | | n.a. | 5.6 | DFOP | Y (EFSA, 2012) |
| Lufa 2.3 | Sandy loam | | 6.6 | | 20 | | | 40 | | 92.0 | | 397 | | n.a. | 2.4 | DFOP | Y (EFSA, 2012) |
| Birkenheide | Loamy sand | | 6.1 | | 20 | | | 40 | | 277.0 | | 1012 | | n.a. | 1.2 | SFO | Y (EFSA, 2012) |
| Wisconsin | Loamy sand | | 5.5 | | 20 | | | 40 | | 123.0 | | 409 | | n.a. | 3.3 | SFO | Y (EFSA, 2012) |
| M650F04, laboratory metabolite studies, aerobic conditions, normalized, optimized fit | | | | | | | | | | | | | | | | | |
| Lufa 2.3 | | Loam | | 7.2 | | 20 | 40 | | 38.5 | | - | | 28.5 | | 10.4 | SFO | Y (EFSA, 2012) |
| Lufa 3A | | Sandy loam | | 6.6 | | 20 | 40 | | 131.0 | | - | | 127.0 | | 2.4 | DFOP | Y (EFSA, 2012) |
| Birkenheide | | Loamy sand | | 6.1 | | 20 | 40 | | 259.0 | | - | | 223.0 | | 2.5 | SFO | Y (EFSA, 2012) |
| Wisconsin | | Loamy sand | | 5.5 | | 20 | 40 | | 123.0 | | - | | 123.0 | | 3.3 | SFO | Y (EFSA, 2012) |
| **Geometric mean (n=4)** | | | | | | | | | | | | | **99.8a** | | | | |
| **pH-dependency:** | | | | | | | | | | | | | **no** | | | | |

a A geometric mean DT50 value 99.8 days (n=4) was used for PECSW/SED calculations. For PECGW calculations, please see field DT50 of M650F04.

#### Propamocarb HCl

All endpoints to be considered for risk assessment were already peer-reviewed and summarized for propamocarb HCl in the EFSA conclusion (EFSA, 2006: *Conclusion regarding the peer review of pesticide risk assessment of the active substance propamocarb). EFSA Scientific Report 2006;78, 1-80*)[[3]](#footnote-3) and DAR (2005): *Draft assessment report (DAR), Initial risk assessment provided by the Rapporteur Member State Ireland for the existing active substance Propamocarb. Volume 3, Annex B, B8, July 2005[[4]](#footnote-4).*

DT50 and DT90 values for propamocarb HCl were calculated assuming non-linear simple first order degradation of the active substance. Further details on the method used to fit decline curves to residue data and the goodness-of-fit values obtained for some of the studies, were provided by the rapporteur Member State in the addendum to the DAR (July 2005).

In the aerobic soil metabolism studies at 20 ºC, single first order DT50lab were in the range of 10.9 to 136 days (n= 9, two separate studies from the two applicants). Under the experimental conditions at various temperatures (between 15 ºC and 25 ºC) of the non-GLP studies, a short lag phase was assumed during which nearly no degradation occurred. After this lag phase, the degradation was described again by first-order, mono-phasic kinetics. The estimated DT50 values were in the range of 10.0 – 28.0 days (n = 5).

The DT50lab mean values, normalised to 20 ºC (with Q10 of 2.2) and field capacity (-10kPa) as defined by FOCUS for use as modelling input, were estimated to be 17.08 days and 10.20 days, depending on the dataset provided by each applicant. Whereas, if the datasets from both the studies are considered as whole, the more appropriate geometric mean DT50, lab value of aerobic topsoil values normalised to 20ºC and pF2 moisture content, should be **13.91** days (n= 16). No degradation products were observed to form at levels higher than 10%.

Table ‑: Summary of aerobic degradation rates for propamocarb HCl - laboratory studies

| Propamocarb HCl, Laboratory studies, aerobic conditions | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | pHa | Temp. [oC] | MWHCa [%] | DT50 [d] | DT90 [d] | DT50 (d) 20°C  pF2/10kPaa | Chi2a [%] | Kinetic model | Evaluated on EU level / Reference |
| UK | Loamy sand | - | 20 | - | 10.9 | 36.1 | - | - | SFO | Y DAR (2005) and EFSA (2006) |
| Germany | Loamy silt | - | 20 | - | 11.7 | 38.9 | - | - | SFO |
| UK | Sandy loam | - | 20 | - | 14.1 | 46.8 | - | - | SFO |
| UK | Clay loam | - | 20 | - | 17.8 | 59.0 | - | - | SFO |
| UK | Sandy loam | - | 20 | - | 22.4 | 74.3 | - | - | SFO |
| UK | Clay loam | - | 20 | - | 23.4 | 77.6 | - | - | SFO |
| Germany | Silty sand | - | 20 | - | 29.7 | 98.8 | - | - | SFO |
| UK | Sandy loam | - | 20 | - | 87.7 | 291.5 | - | - | SFO |
| USA | Clay loam | - | 20 | - | 137 | 452 | - | - | SFO |
| Germany | Loamy sand | - | 25 | - | 10 | 17.0 | - | - | SFO |
| Germany | Loamy sand | - | 25 | - | 13 | 24.7 | - | - | SFO |
| Germany | Loamy sand | - | 25 | - | 14 | 27.7 | - | - | SFO |
| USA | Loamy sand | - | 25 | - | 28 | 72.4 | - | - | SFO |
| Germany | Loamy sand | - | 22 | - | 17.7 | 27.8 | - | - | SFO |
| **Geometric mean (n=16)** | | | | | | | **13.9b** |  | | |
| pH-dependency: y/n | | | | | | | n |  | | |

a No complete information available in EFSA (2006).

b Additional two arithmetic mean DT50 values 17.08 and 10.2 days (normalized to 10kPa, 20OC with Q10 of 2.2) from FOCUS groundwater modeling for propamocarb HCl (SFO) have been considered in combination with the DT50 values from 14 soils, the overall geometric mean DT50 value **13.91 days** (n=16) from laboratory aerobic topsoil values normalized to 20oC and pF2 moisture content was derived as modelling endpoint according to EFSA (2006).

### Anaerobic degradation in soil (KCP 9.1.1.1)

#### Ametoctradin and its metabolites

The degradation of ametoctradin in anaerobic soil was already peer-reviewed and evaluated in the respective EFSA conclusion (2012). Ametoctradin was only slowly degraded under anaerobic conditions with a DT50 of 183 days (SFO).

#### Propamocarb HCl

Table ‑: Summary of anaerobic degradation rates of propamocarb HCl in laboratory soils

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **pHa** | Incubation  **Conditions** [oC] | **DT50 actual  [d]** | **DT90 [d]** | **DT50  [d] 20°C/10kPaa** | Chi2 errora  **[%]** | **Kinetic model** | **Evaluated on EU level / Reference** |
| Sandy loam | - | 20 | 308.16b | 1023.69 | - | - | SFO | Y DAR (2005) and EFSA (2006) |
| Sandy loam |  | 20 | 65.68b | 218.18 | - | - | SFO |
| Sandy loam |  | 20 | 14.70c | 318.91 | - | - | SFO |
| Sandy loam |  | 20 | 7.03c | 53.11 | - | - | SFO |
| Loamy sand |  | 25 | 459b | 1524.9 | - | - | SFO |

a Incomplete information in EFSA (2006).

b DT50 value determined for the total system.

c DT50 value determined for water phase.

## Field studies (KCP 9.1.1.2)

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

#### Ametoctradin and its metabolites

No field soil dissipation studies were performed for the active substance ametoctradin. However, for the two soil metabolites M650F03 and M650F04 field soil dissipation studies were performed in order to obtain refined soil degradation values for leaching assessment. Those studies were peer-reviewed and evaluated in the ametoctradin DAR (2011). The resulting endpoints are listed in the EFSA conclusion (2012).

Trigger endpoints

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table ‑: Summary of aerobic degradation rates for M650F03 - field studies: Trigger endpoints | | | | | | | | | |
| M650F03, field studies – Trigger endpoints | | | | | | | | | |
| Soil type (bare soil) | Location | pH (CaCl2) | Depth [cm] | DisT50 [d] | DT90 [d] | f.f. a | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Sand | Denmark | 6.3 | 0-40 | 19.8 | 65.8 | - | 11.2 | SFO | Y (EFSA, 2012) |
| Sandy loam | United Kingdom | 6.9 | 0-25 | 6.9 | 48.8 | - | 12.4 | FOMC | Y (EFSA, 2012) |
| Loamy sand | Germany | 5.3 | 0-35 | 16.4 | 54.5 | - | 9.3 | SFO | Y (EFSA, 2012) |
| Silt loam | Italy | 7.2 | 0-20 | 16.6 | 420c | - | 9.2 | DFOP | Y (EFSA, 2012) |
| Sand | Spain | 7.0 | 0-20 | 14.0 | 250 | - | 10.0 | DFOP | Y (EFSA, 2012) |
| **Maximum (n=5)** | | | | **19.8b** |  | | | | |

a Metabolite used as test item.

b The worst-case non-normalised field DT50 value 19.8 days was used for PECsoil calculations together with the maximum observed occurrence in lab studies of 57% AR in Bruch West (DAR, 2011).

c There is sufficient evidence to show that M650F03 has no potential for soil accumulation: dry and hot weather conditions in Southern Europe stopped the brake-down process in summer after a rapid initial dissipation phase. This reflected in the comparison of the DT50 and DT90 values of the field trials in all EU trials, the DT50 values are in the same range from 6.9 days to 16.6 days (best fit), however, on SEU trials show a prolonged second degradation phase, resulting in long DT90 values. Therefore, the result from Italian trial is considered to be not representative for the dissipation behavior and it is treated as an outlier (DAR, 2011).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table ‑: Summary of aerobic degradation rates for M650F04 - field studies: Trigger endpoints | | | | | | | | | |
| M650F04, field studies – Trigger endpoints | | | | | | | | | |
| Soil type (bare soil) | Location | pH (CaCl2) | Depth [cm] | DisT50 [d] | DT90 [d] | f.f. a | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Sand | Denmark | 5.9 | 0-40 | 48.6 | 162 | - | 11.9 | SFO | Y (EFSA, 2012) |
| Sandy loam | United Kingdom | 6.9 | 0-25 | 25.1 | -b | - | 11.3 | DFOP | Y (EFSA, 2012) |
| Loamy sand | Germany | 5.2 | 0-35 | 82.9 | 276 | - | 7.8 | SFO | Y (EFSA, 2012) |
| Silt loam | Italy | 7.2 | 0-20 | 186.5 | -b | - | 4.6 | DFOP | Y (EFSA, 2012) |
| Sand | Spain | 6.9 | 0-20 | 48.5 | -b | - | 4.3 | FOMC | Y (EFSA, 2012) |
| **Maximum (n=5)** | | | | **186.5c** |  | | | | |

a Metabolite used as test item.

b > 2 times study duration.

c The worst-case non-normalised field DT50 (DFOP; k1 = 0.001585 1/d, k2 = 0.072815 1/d and g = 0.6719) was used for PECsoil calculation together with the maximum observed occurrence in lab studies of 55.7% AR in LUFA 5M soil (DAR, 2011).

Modelling endpoints

| Table ‑: Summary of aerobic degradation rates for M650F03 - field studies: Modelling endpoints | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M650F03, field studies – Modelling endpoints | | | | | | | |
| Soil type (bare soil) | Location | pH (CaCl2) | Depth [cm] | DT50 [d]  20°C, pF2 | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Sand | Denmark | 6.3 | 0-40 | 8.4 | 13.7 | SFO | Y (EFSA, 2012) |
| Sandy loam | United Kingdom | 6.9 | 0-25 | 10.5 a | 14.7 | FOMC | Y (EFSA, 2012) |
| Loamy sand | Germany | 5.3 | 0-35 | 8.7 | 7.2 | SFO | Y (EFSA, 2012) |
| Silt loam | Italy | 7.2 | 0-20 | 130.8 b | 11.2 | DFOP | Y (EFSA, 2012) |
| Sand | Spain | 7.0 | 0-20 | 29.9 a | 6.2 | FOMC | Y (EFSA, 2012) |
| Geometric mean (n=5) | | | | 19.7 |  | | |
| pH-dependency: | | | | no |  | | |
| a DT50 = DT90 (FOMC)/3.32.  b DT50 from slow-phase of DFOP. | | | | | | | |

| Table ‑: Summary of aerobic degradation rates for M650F04 - field studies: Modelling endpoints | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M650F04, Field studies – Modelling endpoints | | | | | | | |
| Soil type (bare soil) | Location | pH (CaCl2) | Depth [cm] | DT50 [d]  20°C, pF2 | Chi2 [%] | Kinetic model | Evaluated on EU level / Reference |
| Sand | Denmark | 5.9 | 0-40 | 27.5 | 13.1 | SFO | Y (EFSA, 2012) |
| Sandy loam | United Kingdom | 6.9 | 0-25 | 21.3 | 13.6 | SFO | Y (EFSA, 2012) |
| Loamy sand | Germany | 5.2 | 0-35 | 55.8 | 9.2 | SFO | Y (EFSA, 2012) |
| Silt loam | Italy | 7.2 | 0-20 | 144.1 | 7.9 | SFO | Y (EFSA, 2012) |
| Sand | Spain | 6.9 | 0-20 | 60.0 | 9.3 | SFO | Y (EFSA, 2012) |
| **Geometric mean (n=5)** | | | | **49.0a** |  | | |
| **pH-dependency:** | | | | **no** |  | | |

a A geometric mean DT50 value 49.0 days (n=5) was used for PECGW calculation.

#### Propamocarb HCl

The rates of degradation of propamocarb HCl observed in laboratory studies triggered the need for a field dissipation study (DT50lab, 20 ºC = 10.9 – 137 days). Results of field dissipation studies performed in USA suggested that propamocarb HCl dissipates rapidly under field conditions with a DT50 ranging from 17.4 and 23.7 days. The summary of field studies listed in the EFSA conclusion (2006) is presented in the table below.

Triggering endpoints

Table ‑: Summary of aerobic degradation rates for propamocarb HCl - field studies: Triggering endpoints

| Propamocarb, Field studies – Triggering endpoints | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | Location | pHa | Depth (cm) | DissT50 (d)  actual | DT90 (d) actual | St.  (2) | Kinetic model | Evaluated on EU level / Reference |
| Loamy sand (bare soil) | Georgia, USA | 5.7 | 0-15 | 17.6 | 58.6 | 0.76 | SFO | Y DAR (2005) and EFSA (2006) |
| Sandy loam (bare soil) | California, USA | 9.0 | 0-15 | 22.1 | 73.3 | 0.99 | SFO |
| Loamy sand (thatch) | Georgia, USA | 5.9 | 0-7.5 | 17.4 | 57.7 | 0.78 | SFO |
| Sandy loam (thatch) | California, USA | 8.6 | 0-7.5 | 23.7 | 78.6 | 0.92 | SFO |
| Grass | Georgia, USA | - | - | 13.2 | 43.9 | 0.89 | SFO |
| Grass | California, USA | - | - | 18.1 | 60.1 | 0.91 | SFO |
| Maximum (n=6) | | | | 23.7 |  |  |  |

a not stated that pH was measured in which media.

### Soil accumulation testing (KCP 9.1.1.2.2)

#### Ametoctradin and its metabolites

No soil accumulation testing was performed for the active substance. Ametoctradin had a half-life in soil below 100 days so that accumulation in soil can be excluded.

The metabolite M650F04 showed DT90 values of >1 year (metabolite was applied as parent) in a field dissipation study. Thus, a PECsoil,accu value was calculated for this compound.

#### Propamocarb HCl

No evidence of accumulation in soil for propamocarb HCl was observed.

## 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.

### Ametoctradin and its metabolites

The mobility of ametoctradin and its metabolites has been evaluated and the resulting endpoints are listed in the EFSA conclusion (2012).

Table ‑: Summary of soil adsorption/desorption for ametoctradin

| Ametoctradin | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  [%] | pH  (CaCl2) | Kf  [mL/g] | Kf,oc  [mL/g] | 1/n  [-] | Evaluated on EU level / Reference |
| Schifferstadt | Loamy sand | 0.9 | 4.9 | 59.6 | 6620 | 0.842 | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 1.72 | 5.7 | 61.2 | 3560 | 0.799 | Y (EFSA, 2012) |
| *Obihiro* | *Silty loam* | *n.a.* | *5.9* | *80.8* | *(4850) a* | *(0.819) a* | N |
| New Jersey | Loam | 1.10 | 6.2 | 44.7 | 4060 | 0.751 | Y (EFSA, 2012) |
| 1680 | Loamy sand | 0.88 | 5.9 | 38.0 | 4320 | 0.773 | Y (EFSA, 2012) |
| Lufa 3A | Loam | 3.23 | 7.2 | 72.8 | 2250 | 0.810 | Y (EFSA, 2012) |
| Studernheim | Sandy loam | 1.51 | 7.6 | 23.9 | 1580 | 0.718 | Y (EFSA, 2012) |
| California | Sandy loam | 0.35 | 8.0 | 14.2 | 4060 | 0.677 | Y (EFSA, 2012) |
| **Arithmetic mean (n=7)**  **Geometric mean (n=7)**  Median | | | | | 3779  **3462** 4060 | **0.767**  - 0.773 |  |
| **pH-dependency:** | | | | | **no** | | |

n.a. = not applicable

a Not considered for derivation of endpoints.

| Table ‑: Summary of soil adsorption/desorption for M650F01 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M650F01 | | | | | | | |
| Soil Name | Soil Type | OC  [%] | pH  (CaCl2) | Kf  [mL/g] | Kf,oc  [mL/g] | 1/n  [-] | Evaluated on EU level / Reference |
| Schifferstadt | Loamy sand | 0.9 | 4.9 | 1.74 | 193.0 | 0.908 | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 1.72 | 5.7 | 1.07 | 62.3 | 0.892 | Y (EFSA, 2012) |
| *New Jersey* | *Loam* | *1.10* | *6.2* | *1.78* | *(162.0) a* | *(0.859) a* | Y (EFSA, 2012) |
| 1680 | Loamy sand | 0.88 | 5.9 | 0.594 | 67.5 | 0.912 | Y (EFSA, 2012) |
| Lufa 3A | Loam | 3.23 | 7.2 | 0.905 | 28.0 | 0.931 | Y (EFSA, 2012) |
| Studernheim | Sandy loam | 1.51 | 7.6 | 0.330 | 21.8 | 0.891 | Y (EFSA, 2012) |
| California | Sandy loam | 0.35 | 8.0 | 0.274 | 78.4 | 0.866 | Y (EFSA, 2012) |
| **Arithmetic mean (n=6)**  **Geometric mean (n=6)**  Median | | | | | 75.2b  **58.2c** 64.9 | **0.900**  - 0.900 |  |
| **pH-dependency:** | | | | | **yes, sorption decreases if pH increases** | | |
| a Not considered for derivation of arithmetic mean.  b pH sorption dependence, therefore, Kf,oc values of 42.1 (alkaline, pH 9.7) and 787.2 (acidic, pH 0.1) mL/g from sigmoidal function (n=6) were considered in PECGW calculation (EFSA, 2012).  c Geometric mean Kf,oc 58.2 mL/g was used in PECSW calculations. | | | | | | | |

| Table ‑: Summary of soil adsorption/desorption for M650F02 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M650F02 | | | | | | | |
| Soil Name | Soil Type | OC  [%] | pH  (CaCl2) | Kf  [mL/g] | Kf,oc  [mL/g] | 1/n  [-] | Evaluated on EU level / Reference |
| Schifferstadt | Loamy sand | 0.9 | 4.9 | 0.282 | 31.0 | 0.86 | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 1.72 | 5.7 | 0.577 | 33.6 | 1.09 | Y (EFSA, 2012) |
| *Obihiro* | *Silty loam* | *n.a.* | *5.9* | *4.57* | *(277) a* | *(1.10) a* | N |
| New Jersey | Loam | 1.10 | 6.2 | 0.978 | 89.0 | 0.90 | Y (EFSA, 2012) |
| 1680 | Loamy sand | 0.88 | 5.9 | 0.294 | 33.4 | 0.99 | Y (EFSA, 2012) |
| Lufa 3A | Loam | 3.23 | 7.2 | 0.508 | 16.0 | 0.91 | Y (EFSA, 2012) |
| Studernheim | Sandy loam | 1.51 | 7.6 | 0.211 | 14.0 | 0.96 | Y (EFSA, 2012) |
| California | Sandy loam | 0.35 | 8.0 | 0.125 | 36.0 | 1.13 | Y (EFSA, 2012) |
| **Arithmetic mean (n=7) Geometric mean (n=7)**  Median | | | | | 36.1  **30.6b** 33.4 | **0.977**  **-** 0.96 |  |
| **pH-dependency:** | | | | | **no** | | |
| a Not considered for derivation of the endpoints.  b Geometric mean Kf,oc 30.6 mL/g (n=7) was used in PECGW and PECSW calculations. | | | | | | | |

| Table ‑: Summary of soil adsorption/desorption for M650F03 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M650F03 | | | | | | | |
| Soil Name | Soil Type | OC  [%] | pH  (CaCl2) | Kf  [mL/g] | Kf,oc  [mL/g] | 1/n  [-] | Evaluated on EU level / Reference |
| Schifferstadt | Sand | 0.76 | 4.1 | 1.514 | 199 | 0.885 | Y (EFSA, 2012) |
| Lufa 2.1 | Sand | 0.52 | 5.2 | 0.132 | 25 | 0.827 | Y (EFSA, 2012) |
| Große Erde | Loamy sand | 0.92 | 6.8 | 0.099 | 11 | 0.829 | Y (EFSA, 2012) |
| Lufa 2.3 | Sandy loam | 1.01 | 7.2 | 0.337 | 33 | 0.900 | Y (EFSA, 2012) |
| La Gironda | Silty clay loam | 3.84 | 7.5 | 0.516 | 13 | 0.922 | Y (EFSA, 2012) |
| Münster | Sandy loam | 1.44 | 5.0 | 0.901 | 62.6 | 0.926 | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 1.91 | 5.7 | 0.966 | 50.6 | 0.885 | Y (EFSA, 2012) |
| New Jersey | Loam | 1.10 | 6.2 | 0.643 | 58.5 | 0.921 | Y (EFSA, 2012) |
| 1680 | Loamy sand | 0.75 | 6.4 | 0.114 | 15.3 | 0.944 | Y (EFSA, 2012) |
| Lufa 3A | Loam | 3.23 | 7.2 | 0.346 | 10.7 | 0.933 | Y (EFSA, 2012) |
| Studernheim | Sandy loam | 1.51 | 7.6 | 0.178 | 11.8 | 0.944 | Y (EFSA, 2012) |
| California | Sandy loam | 0.35 | 8.0 | 0.108 | 30.9 | 0.996 | Y (EFSA, 2012) |
| **Arithmetic mean (n=12)**  **Geometric mean (n=12)** Median | | | | | 43.5a  **28.3b** 30.9 | **0.909** |  |
| **pH-dependency:** | | | | | **yes, sorption decreases if pH increases** | | |

a pH sorption dependence, therefore, Kf,oc values of 23.4 (alkaline, pH 8.6) and 502.4 (acidic, pH 0.1) mL/g from sigmoidal function (n=12) were considered in PECGW calculation (EFSA, 2012).

b Geometric mean Kf,oc 28.3 mL/g was used in PECSW calculations.

| Table ‑: Summary of soil adsorption/desorption for M650F04 | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M650F04 | | | | | | | |
| Soil Name | Soil Type | OC  [%] | pH  (CaCl2) | Kf  [mL/g] | Kf,oc  [mL/g] | 1/n  [-] | Evaluated on EU level / Reference |
| Münster | Sandy loam | 1.44 | 5.0 | 0.677 | 47.0 | 0.893 | Y (EFSA, 2012) |
| Lufa 2.2 | Loamy sand | 1.91 | 5.7 | 0.763 | 40.0 | 0.855 | Y (EFSA, 2012) |
| New Jersey | Loam | 1.10 | 6.2 | 0.479 | 43.6 | 0.886 | Y (EFSA, 2012) |
| 1680 | Loamy sand | 0.75 | 6.4 | 0.085 | 11.4 | 0.874 | Y (EFSA, 2012) |
| Lufa 3A | Loam | 3.23 | 7.2 | 0.261 | 8.1 | 0.880 | Y (EFSA, 2012) |
| Studernheim | Sandy loam | 1.51 | 7.6 | 0.116 | 7.7 | 0.901 | Y (EFSA, 2012) |
| California | Sandy loam | 0.35 | 8.0 | 0.059 | 17.1 | 0.924 | Y (EFSA, 2012) |
| Schifferstadt | Sand | 0.76 | 4.1 | 0.900 | 118 | 0.892 | Y (EFSA, 2012) |
| Lufa 2.1 | Sand | 0.52 | 5.2 | 0.059 | 11.0 | 0.697 | Y (EFSA, 2012) |
| Große Erde | Loamy sand | 0.92 | 6.8 | 0.081 | 9.0 | 0.767 | Y (EFSA, 2012) |
| Lufa 2.3 | Sandy loam | 1.01 | 7.2 | 0.231 | 23.0 | 0.801 | Y (EFSA, 2012) |
| La Gironda | Silty clay loam | 3.84 | 7.5 | 0.326 | 8.0 | 0.855 | Y (EFSA, 2012) |
| **Arithmetic mean (n=12)**  **Geometric mean (n=12)** Median | | | | | 28.7b  **18.9c** 14.25 | **0.852 a** |  |
| **pH-dependency:** | | | | | **yes, sorption decreases if pH increases** | | |

a Incorrect value in EFSA conclusion (2012).

b pH sorption dependence, therefore, Kf,oc values of 16.3 (alkaline, pH 8.5) and 220 (acidic, pH 0.2) mL/g from sigmoidal function (n=12) were considered in PECGW calculation (EFSA, 2012).

c Geometric mean Kf,oc 18.9 mL/g was used in PECSW calculations.

| Table ‑: Summary of pH-dependent sorption parameters estimated for the metabolites M650F01, M650F03 and M650F04 of Ametoctradin | | | | |
| --- | --- | --- | --- | --- |
| Value | M650F01a | M650F03a | M650F04a | Evaluated on EU level / Reference |
| Kf,oc,ac [mL/g] | 787.17 | 502.45 | 220.00 | Y (EFSA, 2012) |
| Kf,oc,al [mL/g] | 42.08 | 23.38 | 16.34 | Y (EFSA, 2012) |
| Kf,om,ac [mL/g] | 456.60 | 291.44 | 127.61 | Y (EFSA, 2012) |
| Kf,om,al [mL/g] | 24.42 | 13.56 | 9.48 | Y (EFSA, 2012) |
| pKa | 4.3 b | 3.80 b | 4.00 b | Y (EFSA, 2012) |
| ∆pH | 0 c | 0.06 | 0.10 | Y (EFSA, 2012) |
| Efficiency of the method index (EF) | 0.916 | 0.910 | 0.835 | Y (EFSA, 2012) |

a The fitting results of pH dependent sorption are used for PECGW calculation for metabolites M650F01, M650F03 and M650F04. For M650F02, PECGW calculation should be performed using pH independent sorption.

b Determined by experiment.

c Value fixed.

### Propamocarb HCl

The mobility of propamocarb HCl has been evaluated and the resulting endpoints are listed in the EFSA conclusion (2006).

Table ‑: Summary of soil adsorption/desorption for propamocarb HCl

| Propamocarb HCl | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  [%] | pH  [-] | Kf  [mL/g] | Kf,oc  [mL/g] | 1/n  [-] | Evaluated on EU level / Reference |
| Minnesota | Clay loam | 3.15 | 5.8 | 77.2 | 2451 | 0.77 | Y DAR (2005), EFSA (2006) |
| Sarotti | Loamy silt | 1.3 | 7.38 | 2.63 | 202 | 0.9 |
| Abington | Loamy sand | 1.86 | 7.4 | 2.49 | 134 | 0.9 |
| Borstel | Silty sand | 1.04 | 5.81 | 1.29 | 124 | 0.84 |
| Ptungstadt | Loamy clay | 1.57 | 6.4 | 9.7 | 618 | 0.87 |
| German 2.1 | Sand | 0.48 | 6 | 0.671 | 140 | 0.926 |
| German 2.2 | Loamy sand | 2.06 | 6 | 0.849 | 41 | 0.91 |
| Schering 170 | Sandy loam | 1.45 | 5.2 | 5.2 | 359 | 0.822 |
| Speyer 2.2 | Loamy sand | 2.26 | 6.1 | 1.28 | 56.63 | 0.925 |
| Cranfield 249 | Sandy clay loam | 3.48 | 6.5 | 6.26 | 179.88 | 0.854 |
| Midwest 1 | Sandy loam | 1.05 | 5.7 | 13.82 | 1321.22 | 0.827 |
| Midwest 2 | Loamy sand | 0.58 | 5.9 | 4.64 | 800 | 0.862 |
| **Geometric mean (n=12)** | | | | | **263.6** |  |  |
| **Arithmetic mean (n=12)** | | | | | 535.6 | **0.867** |  |
| pH-dependency y/n | | | | | n | | |

### Column leaching (KCP 9.1.2.1)

#### Ametoctradin and its metabolites

No column leaching studies have been performed with the active substance, its metabolites or any formulation, since reliable adsorption values were available for ametoctradin and metabolites M650F01, M650F02, M650F03 and M650F04.

#### Propamocarb HCl

The column leaching behaviour of propamocarb HCl was evaluated during the Annex I Inclusion. No additional studies have been performed.

The mobility of propamocarb hydrochloride was investigated in soil column leaching studies. The comparative leaching of [14C]-propamocarb hydrochloride in acidic (pH 5.6) and alkaline (pH 8.1) soils was investigated in two loamy sand soils. Results indicated that whilst the active ingredient is slightly more mobile in alkaline soils (more than 80% AR remaining in the top 15 cm of the soil column and less than 0.3% AR in the leachate) than in acidic soils (more than 90% AR remaining in the top 5 cm of the soil column and less than 0.05% AR in the leachate), it is not readily leached in either soil type.

Aged (23 and 12 days) residues of [14C]-propamocarb were relatively immobile (< 1% AR in leachates) in 30-cm columns of two sandy loam soils. Most of the soil associated activity (27.9 to 44.5% AR) was recovered in the top 6 cm of the column. Some downward movement of activity was observed down to 18 cm in both soils (< 6.1%AR and <10.9% AR in the section 12-18 cm of the column).

### Lysimeter studies (KCP 9.1.2.2)

#### Ametoctradin and its metabolites

No lysimeter studies were performed with the active substance, the metabolites or any formulation, since ametoctradin, M650F01 and M650F02 did not reveal any risk for groundwater contamination above the drinking water limit of 0.1 µg/L, and metabolites M650F03 and M650F04 were shown to be non-relevant.

#### Propamocarb HCl

No lysimeter studies were performed with propamocarb HCl. These were considered not required.

### Field leaching studies (KCP 9.1.2.3)

#### Ametoctradin and its metabolites

No field leaching studies were performed with the active substance ametoctradin, the metabolites or any formulation, since ametoctradin, M650F01 and M650F02 did not reveal any risk for groundwater contamination above the drinking water limit of 0.1 µg/L, and metabolites M650F03 and M650F04 were shown to be non-relevant.

#### Propamocarb HCl

No field leaching studies were performed with the active substance propamocarb or any formulation, since propamocarb HCl did not reveal any risk for groundwater contamination above the drinking water limit of 0.1 µg/L.

## 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 substances.

### Ametoctradin and its metabolites

The degradation of ametoctradin and its metabolites in water / sediment systems has been evaluated and the resulting endpoints are listed in the EFSA conclusion (2012).

| Table ‑: Summary of degradation in water / sediment of ametoctradin | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ametoctradin, distribution  In water phase decrease to 0.3% (system I) after 100 d and to 1.5% (system II) after 4 d.  In sediment phase max. value 33.6-24.2% reached after 1 d | | | | | | | | | |
| Water/sediment system | pH  water/  sed. | DegT50 whole syst.  [d] | DegT90 whole syst.  [d] | Kinetic, Fit | DisT50 water  [d] | Kinetic, Fit | DisT50 sed.  [d] | Kinetic, Fit | Evaluated on EU level / Reference |
| Silt loam (dark) | 8.3/7.2 | 1.6 | 5.5 | SFO | 1.2 | DFOP | 2.1 | DFOP | Y (EFSA, 2012) |
| Sand (dark) | 7.8/5.6 | 1.4 | 4.8 | SFO | 0.8 | SFO | 2.1 | DFOP | Y (EFSA, 2012) |
| **Geometric mean (n=2)** | | **1.5** |  | | | | | | |

Table ‑: Summary of observed metabolites

|  |  |  |
| --- | --- | --- |
| M650F01  Water/sediment system | Max. in water 21.3% after 2 d (system II)  Max. in sediment 1.6% a after 2 d (system II)  Max. in total system 22.9% after 2 d (system II)  Geometric mean DegT50,whole system = 3.9 d | Y (EFSA, 2012) |
| M650F02  Water/sediment system | Max. in water 10.2% after 4 d (system II)  Max. in sediment 3.2% after 14 d (system I)  Max. in total system 11.3% after 7 d (system I)  Geometric mean DegT50,whole system = 19.4 d | Y (EFSA, 2012) |
| M650F03  Water/sediment system | Max. in water 55.3% after 7 d (system II)  Max. in sediment 19.6% after 59 d (system I)  Max in total system 67.7% after 14 d (system II)  Geometric mean DegT50,whole system = 409.0 d | Y (EFSA, 2012) |
| M650F04  Water/sediment system | Max. in water 14.4% after 81 d (system II)  Max in sediment 6.1% a after 81 d (system I)  Max in total system 18.6% after 81 d (system I)  No DegT50 calculated | Y (EFSA, 2012) |
| a Incorrect value in EFSA conclusion (2012) | | |

### Propamocarb HCl

Table ‑: Summary of degradation in water/sediment of propamocarb HCl

| Propamocarb HCl Distribution In water phase, not detected in water by day 104/105.  In sediment phase max. value 36.9% reached after 14 d. | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Water/sediment system | pH  water/  sed. | DegT50  whole syst.  (d) | DegT90 whole syst.  (d) | Kinetic, Fit | DissT50 water  (d) | DissT90 water  (d) | Kinetic, Fit | DissT50 sed.  (d) | Kinetic, Fit | Evaluated on EU level / Reference |
| Oostvaardersplassen | 8.2 | 15.5 | 51.5 | SFO | 11.6 | 38.4 | SFO | - | - | Y DAR (2005) and EFSA (2006) |
| Schoonrewoerdse Wiel | 9.3 | 15.9 | 52.7 | SFO | 12 | 39.9 | SFO | - | - |
| Mill Stream Pond | 7.4 | 21 | 69 | SFO | 10 | 34 | SFO | 26 | SFO |
| Iron Hatch Steam | 8 | 16 | 53 | SFO | 15 | 49 | SFO | 23 | SFO |
| **Geometric mean (n=4)** | | **16.9a** |  |  |  |  |  |  |  |

a DT50, whole system values of 15.5,15.9, 16.0 and 21.0 days are provided in EFSA (2006), corresponding geometric mean value of **16.9 days (n=4).** The correct geomean value has been used in PECSW calculation in this report. Please note that, however, the incorrect DT50 value of 18.3 day was used in PECSW calculation in EFSA (2006).

Transient unidentified metabolites reached maximum individual levels in aerobic water and sediment phases combined of 1.7-5.6% of applied radioactivity (time of maximum occurrence = 7-28 days) (n = 4 systems, incubated at 20oC).

Transient unidentified metabolites reached maximum individual levels in anaerobic water and sediment phases of 3.9% and 0.9%, respectively (time of maximum occurrence = 13 days) (n = 1 system, incubated at 25oC) (EFSA, 2006). No relevant metabolite in water/sediment is considered for propamocarb HCl.

## Predicted Environmental Concentrations in soil (PECsoil) (KCP 9.1.3)

|  |
| --- |
| **Review Comments:**  The PECsoil calculations for ametoctradin, its metabolites, propamocarb HCl and the formulation BAS 743 03 F were provided by the Applicant and are considered acceptable. The EU agreed endpoints were used for PECsoil calculations. Those values are considered acceptable.  The PECsoil reported below can be used for the risk assessment of the non-target organisms. Please refer to Section B9. |

### Justification for new endpoints

In the EFSA Conclusion (2012), the degradation endpoint (DT50) of 3.2 days (worst-case from laboratory studies) was used for the calculation of PECsoil for ametoctradin. This value was derived from best-fit kinetics with the biphasic model DFOP. In order to account for biphasic degradation of ametoctradin in soil, PECsoil values were calculated with the model ESCAPE v2.0 considering the DFOP degradation parameters k1 = 0.2361 1/days, k2 = 0.0052 1/days and g = 0.9361.

Similar to the parent substance, the degradation endpoint (DT50) of 186.5 days (DFOP kinetics; worst-case from field studies) was used for PECsoil calculations of the metabolite M650F04 in the EFSA Conclusion (2012). For present PECsoil calculations, degradation of M650F04 in soil was described by DFOP degradation parameters k1 = 0.001585 1/days, k2 = 0.072815 1/days and g = 0.6719.

No deviation from the EU agreed endpoints were considered for propamocarb HCl (EFSA conclusions on propamocarb HCl, EFSA Journal 2006).

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

The GAP with relevant application parameters for BAS 743 03 F which PECsoil calculations were performed are presented in Table 8.7‑1.

zRMS PL requested to perform PECsoil calculation of ametoctradin and its metabolites using the Excel spreadsheet.

Please note that PECsoil Excel spreadsheet is used to calculate PECsoil for an active substance and its metabolites that degraded by kinetic SFO degradation. However, ametoctradin and metabolite M650F04 are degraded with kinetic degradation DFOP, while the other metabolites M650F01, M650F02 and M650F03 are degraded with SFO. Therefore, it is appropriate to perform the PECsoil calculations with ESCAPE model which can handle PECsoil calculations from bi-phasic and SFO kinetic degradations.

Following to the zRMS request, PECsoil calculation of ametoctradin and its metabolites has been demonstrated using Excel PECsoil sheet. The calculation was conducted for the worst-case application use on onion, BBCH 14, 2×240 g/ha (5-d. intervals, interception 10%).

Table ‑: Input parameters related to application for PECsoil calculations

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Use No. | 2 | 1 | 3 | 4 | 5 | ~~6, 8-13~~ | ~~14~~ | ~~7~~ |
| Crop | Potato | Potato | Onion | Onion | Tomato, aubergine | ~~Tree nursery crops~~~~e~~~~and floriculture crops~~ | ~~Perennial crops~~ | ~~Avenue trees~~ |
| FOCUS crops | Potatoes | Potatoes | Onions | Onions | Tomatoes | ~~Cabbage~~ | ~~Potatoes~~ | ~~Apple~~~~g~~ |
| Application rate  (g a.s./ha) | Ametoctradin: 240  Propamocarb HCl: 902 | Ametoctradin: 240  Propamocarb HCl: 902 | Ametoctradin: 240  Propamocarb HCl: 902 | Ametoctradin: 240  Propamocarb HCl: 902 | Ametoctradin: 240  Propamocarb HCl: 902 | ~~Ametoctradin: 240~~  ~~Propamocarb HCl: 902~~ | ~~Ametoctradin: 240~~  ~~Propamocarb HCl: 902~~ | ~~Ametoctradin: 240~~  ~~Propamocarb HCl: 902~~ |
| Number of applications/interval | 2 / 5d | 3 / 5 | 1 / - | 2/ 5 | 2 / 7 | ~~2 / 7~~ | ~~2 / 7~~ | ~~2 / 7~~ |
| BBCH growth stagea | 21-89 | 21-89 | 14-49 | 14-49 | 21-89 | ~~12-59~~ | ~~12-59~~ | ~~12-59~~ |
| Crop interceptionb, c (%) | 60d | 60 | 10 | 10 | 70 | ~~25~~ | ~~15~~ | ~~60~~~~f~~ |
| Depth of soil layer (relevant for plateau concentration) (cm) | 20 cm (tillage) | | | | | | ~~5 cm (no tillage)~~ | |
| Method of calculation | Ametoctradin: ESCAPE 2.0 and PECsoil Excel sheete  Propamocarb HCl: PECsoil Excel sheet | | | | | | | |

a PECsoil values were conducted for the earliest BBCH growth stage.

b Crop interception is according to FOCUS (2021)[[5]](#footnote-5).

c For the application uses in the Netherlands (use no 6-14), crop interception used for PECsoil calculation has followed Ctgb guidance (2020)[[6]](#footnote-6).

d Risk envelope has been used. The result is covered by threefold application on potato at BBCH 21-89 (use no. 1).

e Calculated onnly for worst-case use on onion (use no 4).

~~e~~ ~~Tree nursery crops are including climbing plants and conifers (incl. Christmas trees), ornamental shrubs and heather forest trees and hedging plants, fruit trees and shrubs.~~

~~f~~ ~~Risk envelope has been used. The result is covered by application use on perennial crops at BBCH 12-59 (use no. 14). No specific interception crops suggested for avenue trees, to represent impact of root system of the crops to leaching potential in groundwater, avenue trees are considered as fruit tree, FOCUS crop “apple” is used as representative surrogate crop.~~

#### Ametoctradin and its metabolites

Input parameters for ametoctradin and its metabolites for PECsoil calculation are summarized in   
Table 8.7‑2. Application dates used for PECsoil calculation with ESCAPE are presented in Table 8.7‑3.

**Table 8.7‑2:** **Input parameter for ametoctradin and its metabolites for PECsoil calculation**

| Compound | Molecular weight  [g/mol] | Max. occurrence [%] | DT50  [d] | Value in accordance to EU endpoint y/n/  Reference |
| --- | --- | --- | --- | --- |
| Ametoctradin | 275.4 | - a | ESCAPE: k1 [1/d] = 0.2361 k2 [1/d] = 0.0052 g = 0.9361 b  (DFOP, worst-case from lab, n = 4)  Excel PECsoil:3.2  (worst-case, DFOP, from lab, n=4) | Y (EFSA, 2012) |
| M650F01 | 249.3 | ESCAPE: 92.8 c (formation fraction of laboratory studies with the parent,  n = 4)  Excel PECsoil:53.9 | ESCAPE and Excel PECsoil: 10.8 (worst-case from DFOP-SFO approach of lab with the parent, n = 4) | Y (EFSA, 2012), except formation fraction in soil: DAR (2011) |
| M650F02 | 235.3 | ESCAPE: 6.4 c (formation fraction of laboratory studies with the parent,  n = 4) Excel PECsoil:13 | ESCAPE and Excel PECsoil: 21.6 (worst-case from DFOP-SFO approach of lab with the parent, n = 5) | Y (EFSA, 2012) (2012), except formation fraction in soil: DAR (2011) |
| M650F03 | 221.2 | ESCAPE and Excel PECsoil:  57.0 (n = 4) | ESCAPE and Excel PECsoil: 19.8 (SFO, worst-case from field studies, n=5) | Y (EFSA, 2012) |
| M650F04 | 207.2 | ESCAPE and Excel PECsoil:  55.7 (n = 4) | ESCAPE:  k1 [1/d] = 0.001585 k2 [1/d] = 0.072815 g = 0.6719 b  (DFOP, worst-case from field studies, n = 5)  Excel PECsoil: 186.5 (worst-case from field DisT50 DFOP, n=5) | Y (EFSA, 2012) |

a Not relevant for parent substance.  
b Degradation of compound described by DFOP kinetics.  
c Formation fraction belonging to worst-case DT50 in soil laboratory studies (DFOP-SFO approach) (DAR, 2011).

**Table 8.7‑3: Application date for PECsoil calculation with ESCAPE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crop** | **FOCUS crop** | **Effective application rate [g/ha]** | | | **First application datea** |
| **Ametoctradin to M650F01 and M065F02b** | **M650F03 as parentc** | **M650F04 as parentc** |
| Potato, BBCH 21, 3×240 g/ha  (5-d. intervals), interception 60% | Potatoes | 96 | 43.9 | 40.2 | 13-May |
| Onion,  BBCH 14, 1×240 and  2×240 g/ha (5-d. intervals),  interception 10% | Onions | 216 | 98.9 | 90.5 | 22-May |
| Tomato and aubergine,  BBCH 21, 2×240 g/ha  (7-d. intervals), interception 70% | Tomatoes | 72 | 33.0 | 30.2 | 29-May |
| ~~Tree nursery crops~~~~d~~ ~~and floriculture crops,  BBCH 12, 2×240 g/ha  (7-d. intervals), interception 25%~~ | ~~Cabbage~~ | ~~180~~ | ~~82.4~~ | ~~75.4~~ | ~~21-Apr~~ |
| ~~Perennial crops~~~~e~~~~, BBCH 12, 2×240 g/ha  (7-d. intervals),  interception 15%~~ | ~~Potatoes~~ | ~~204~~ | ~~93.4~~ | ~~85.5~~ | ~~15-May~~ |

a  First application date was selected based on surrogate FOCUS crop from FOCUSgw scenarios; Châteaudun/ Hamburg / Kremsmünster scenarios in AppDate tool (version 3.06).

b  Parent to metabolites, application rate of active substance × interception%.

c  As parent, application rate of active substance × interception% × mass correction ratio of metabolite and parent × max. occurrence in soil%.

~~d~~ ~~Tree nursery crops are including climbing plants and conifers (incl. Christmas trees), ornamental shrubs and heather forest trees and hedging plants, fruit trees and shrubs.~~

~~e~~ ~~As a risk envelope to cover application uses on avenue trees at BBCH 12-59.~~

**Table 8.7‑4: Application rate for PECsoil calculation with Excel PECsoil**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **FOCUS crop** | **Effective application rate [g/ha]** | | | | |
| **Ametoctradin** | **M650F01 as parenta** | **M065F02 as parenta** | **M650F03 as parenta** | **M650F04 as parenta** |
| Onion,  BBCH 14, 1×240 and  2×240 g/ha  (5-d. intervals),  interception 10% | Onions | 216 | 105.39 | 23.99 | 98.89 | 90.52 |

a As parent, application rate of active substance × interception% × mass correction ratio of metabolite and parent × max. occurrence in soil%.

PECsoil of ametoctradin

Table ‑: PECsoil for ametoctradin on potato, BBCH 21, 3×240 g/ha (5-d. intervals)

|  |  |  |  |
| --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Potato (FOCUS crop: potatoes),  BBCH 21, 3×240 g/ha (5-d. intervals), 60% interceptiona** | |
| **Actual** | **TWA** |
| Initial | | 0.192 | - |
| Short term | 24h | 0.156 | 0.174 |
| 2d | 0.128 | 0.158 |
| 4d | 0.089 | 0.142 |
| Long term | 7d | 0.055 | 0.132 |
| 14d | 0.028 | 0.114 |
| 21d | 0.023 | 0.094 |
| 28d | 0.021 | 0.078 |
| 50d | 0.018 | 0.053 |
| 100d | 0.014 | 0.035 |
| Plateau concentration (20 cm)  after year 10 | | -b | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -b | - |

a Risk envelope also covers application use on potato, BBCH 21, 2×240 g/ha (5-d. intervals).

b Not required as DT90 is less than 1 year.

Table ‑: PECsoil for ametoctradin on onion, BBCH 14, 1×240 g/ha and 2×240 g/ha (5-d intervals)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Onion (FOCUS crop: onion),  BBCH 14, 1×240 g/ha,  10% interception** | | **Onion (FOCUS crop: onion),  BBCH 14, 2×240 g/ha  (5-d intervals),  10% interception** | |
| **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 0.288 | - | 0.389 | - |
| Short term | 24h | 0.231 | 0.260 | 0.314 | 0.352 |
| 2d | 0.186 | 0.234 | 0.256 | 0.318 |
| 4d | 0.123 | 0.194 | 0.173 | 0.281 |
| Long term | 7d | 0.069 | 0.151 | 0.103 | 0.238 |
| 14d | 0.027 | 0.097 | 0.047 | 0.191 |
| 21d | 0.018 | 0.072 | 0.035 | 0.145 |
| 28d | 0.016 | 0.058 | 0.032 | 0.118 |
| 50d | 0.014 | 0.039 | 0.028 | 0.080 |
| 100d | 0.011 | 0.026 | 0.022 | 0.053 |
| Plateau concentration (20 cm)  after year 10 | | -a | - | -a | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -a |  | -a | - |

a Not required as DT90 is less than 1 year.

Table 8.7‑7: PECsoil for ametoctradin on onion, BBCH 14, 2×240 g/ha (5-d intervals): Excel PECsoil

|  |  |  |  |
| --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Onion (FOCUS crop: onion),  BBCH 14, 2×240 g/ha (5-d intervals), 10% interception** | |
| **Actual** | **TWA** |
| Initial | | 0.386 | - |
| Short term | 24h | 0.310 | 0.347 |
| 2d | 0.250 | 0.313 |
| 4d | 0.162 | 0.258 |
| Long term | 7d | 0.085 | 0.198 |
| 14d | 0.019 | 0.121 |
| 21d | 0.004 | 0.084 |
| 28d | 0.001 | 0.063 |
| 50d | <0.001 | 0.036 |
| 100d | <0.001 | 0.018 |
| Plateau concentration (20 cm)  after year 10 | | -a | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -a | - |

a Not required as DT90 is less than 1 year.

~~Table 8.7‑8: PEC~~~~soil~~ ~~for ametoctradin on tomato and aubergine, BBCH 21, 2×240 g/ha   
(7- d  intervals)~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Tomato and aubergine (FOCUS crop: tomatoes),  BBCH 21, 2×240 g/ha (7-d intervals), 70% interception~~** | |
| **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~0.119~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~0.097~~ | ~~0.108~~ |
| ~~2d~~ | ~~0.079~~ | ~~0.098~~ |
| ~~4d~~ | ~~0.053~~ | ~~0.085~~ |
| ~~Long term~~ | ~~7d~~ | ~~0.032~~ | ~~0.070~~ |
| ~~14d~~ | ~~0.015~~ | ~~0.061~~ |
| ~~21d~~ | ~~0.012~~ | ~~0.048~~ |
| ~~28d~~ | ~~0.011~~ | ~~0.039~~ |
| ~~50d~~ | ~~0.009~~ | ~~0.026~~ |
| ~~100d~~ | ~~0.007~~ | ~~0.017~~ |
| ~~Plateau concentration (20 cm)~~  ~~after year 10~~ | | ~~-~~~~a~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~-~~~~a~~ | ~~-~~ |

~~a~~ ~~Not required as DT~~~~90~~ ~~is less than 1 year.~~

~~Table 8.7‑9: PEC~~~~soil~~ ~~for ametoctradin on tree nursery crops and floriculture crops, BBCH 12, 2×240 g/ha (7-d. intervals)~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Tree nursery crops~~~~a~~ ~~and floriculture crops  (FOCUS crop: cabbage),  BBCH 12, 2×240 g/ha (7-d. intervals), 25% interception~~~~b~~** | |
| **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~0.298~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~0.241~~ | ~~0.270~~ |
| ~~2d~~ | ~~0.197~~ | ~~0.244~~ |
| ~~4d~~ | ~~0.134~~ | ~~0.213~~ |
| ~~Long term~~ | ~~7d~~ | ~~0.080~~ | ~~0.175~~ |
| ~~14d~~ | ~~0.038~~ | ~~0.152~~ |
| ~~21d~~ | ~~0.029~~ | ~~0.119~~ |
| ~~28d~~ | ~~0.026~~ | ~~0.098~~ |
| ~~50d~~ | ~~0.023~~ | ~~0.066~~ |
| ~~100d~~ | ~~0.018~~ | ~~0.044~~ |
| ~~Plateau concentration (20 cm)~~  ~~after year 10~~ | | ~~-~~~~a~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~-~~~~a~~ | ~~-~~ |

~~a~~ ~~Tree nursery crops are including climbing plants and conifers (incl. Christmas trees), ornamental shrubs and heather forest trees and hedging plants, fruit trees and shrubs.~~

~~b~~~~Crop interception is based on FOCUS crop “cabbage” for floriculture crops (DTG code 7.2) and tree nursery crops (DTG code 7.3) following recommendation in Ctgb (2020).~~

~~c~~ ~~Not required as DT~~~~90~~ ~~is less than 1 year.~~

~~Table 8.7‑10: PEC~~~~soil~~ ~~for ametoctradin on perennial crops, BBCH 12, 2×240 g/ha (7-d. intervals)~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Perennial crops (FOCUS crop: potatoes),  BBCH 12, 2×240 g/ha (7-d. intervals), 15% interception~~~~a,b~~** | |
| **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~0.338~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~0.274~~ | ~~0.306~~ |
| ~~2d~~ | ~~0.223~~ | ~~0.277~~ |
| ~~4d~~ | ~~0.151~~ | ~~0.241~~ |
| ~~Long term~~ | ~~7d~~ | ~~0.091~~ | ~~0.198~~ |
| ~~14d~~ | ~~0.043~~ | ~~0.172~~ |
| ~~21d~~ | ~~0.033~~ | ~~0.135~~ |
| ~~28d~~ | ~~0.030~~ | ~~0.110~~ |
| ~~50d~~ | ~~0.026~~ | ~~0.075~~ |
| ~~100d~~ | ~~0.020~~ | ~~0.049~~ |
| ~~Plateau concentration (5 cm)~~  ~~after year 10~~ | | ~~-~~~~c~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~-~~~~c~~ | ~~-~~ |

~~a~~ ~~As a risk envelope to cover application uses on avenue trees at BBCH 12-59.~~

~~b~~ ~~Crop interception is based on FOCUS crop “potatoes” for perennial crops (DTG code 7.4) following recommendation in Ctgb (2020).~~

~~c~~ ~~Not required as DT~~~~90~~ ~~is less than 1 year.~~

PECsoil of metabolites

Table ‑: PECsoil for ametoctradin metabolites on potato, BBCH 21, 3×240 g/ha   
(5-d. intervals)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Potato (FOCUS crop: potatoes),  BBCH 21, 3×240 g/ha (5-d. intervals), 60% interceptiona** | | | | | | | |
| **M650F01b** | | **M650F02b** | | **M650F03c** | | **M650F04c** | |
| **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 0.173 | - | 0.014 | - | 0.149 | - | 0.146 | - |
| Short term | 24h | 0.171 | 0.172 | 0.014 | 0.014 | 0.144 | 0.146 | 0.143 | 0.144 |
| 2d | 0.168 | 0.172 | 0.014 | 0.014 | 0.139 | 0.144 | 0.140 | 0.143 |
| 4d | 0.158 | 0.171 | 0.013 | 0.014 | 0.130 | 0.139 | 0.135 | 0.140 |
| Long term | 7d | 0.138 | 0.168 | 0.012 | 0.014 | 0.117 | 0.133 | 0.129 | 0.137 |
| 14d | 0.094 | 0.155 | 0.010 | 0.013 | 0.091 | 0.120 | 0.119 | 0.130 |
| 21d | 0.062 | 0.141 | 0.008 | 0.012 | 0.071 | 0.112 | 0.112 | 0.125 |
| 28d | 0.040 | 0.127 | 0.007 | 0.012 | 0.056 | 0.103 | 0.108 | 0.122 |
| 50d | 0.011 | 0.091 | 0.003 | 0.009 | 0.026 | 0.081 | 0.100 | 0.114 |
| 100d | 0.001 | 0.050 | 0.001 | 0.006 | 0.005 | 0.049 | 0.092 | 0.105 |
| Plateau concentration (20 cm)  after year 10 | | -d | - | -d | - | -d | - | 0.034 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -d | - | -d | - | -d | - | 0.180 | - |

a Risk envelope has been used to cover lower application rate 2 × 240 ametoctradin/ha (5-d intervals) at BBCH 21-89.

b Calculated as parent and two parallel metabolites.

c Calculated as parent.

d Not required as DT90 is less than 1 year.

Table ‑: PECsoil for ametoctradin metabolites on onion, BBCH 14, 1×240 g/ha

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Onion (FOCUS crop: onions),  BBCH 14, 1×240 g/ha, 10% interception** | | | | | | | |
| **M650F01a** | | **M650F02a** | | **M650F03b** | | **M650F04b** | |
| **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 0.144 | - | 0.011 | - | 0.132 | - | 0.121 | - |
| Short term | 24h | 0.143 | 0.144 | 0.011 | 0.011 | 0.127 | 0.130 | 0.118 | 0.119 |
| 2d | 0.140 | 0.144 | 0.011 | 0.011 | 0.123 | 0.127 | 0.115 | 0.118 |
| 4d | 0.131 | 0.143 | 0.011 | 0.011 | 0.115 | 0.123 | 0.110 | 0.115 |
| Long term | 7d | 0.114 | 0.140 | 0.010 | 0.011 | 0.103 | 0.117 | 0.104 | 0.112 |
| 14d | 0.078 | 0.129 | 0.008 | 0.010 | 0.081 | 0.104 | 0.094 | 0.105 |
| 21d | 0.051 | 0.116 | 0.007 | 0.010 | 0.063 | 0.093 | 0.087 | 0.100 |
| 28d | 0.033 | 0.102 | 0.005 | 0.009 | 0.050 | 0.084 | 0.083 | 0.096 |
| 50d | 0.009 | 0.070 | 0.003 | 0.007 | 0.023 | 0.062 | 0.076 | 0.089 |
| 100d | 0.001 | 0.037 | 0.001 | 0.005 | 0.004 | 0.037 | 0.069 | 0.080 |
| Plateau concentration (20 cm)  after year 10 | | -c | - | -c | - | -c | - | 0.026 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -c | - | -c | - | -c | - | 0.146 | - |

a Calculated as parent and two parallel metabolites.

b Calculated as parent.

c Not required as DT90 is less than 1 year.

Table ‑: PECsoil for ametoctradin metabolites on onion, BBCH 14, 2×240 g/ha   
(5-d intervals) :ESCAPE

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Onion (FOCUS crop: onions),  BBCH 14, 2×240 g/ha (5-d intervals), 10% interception** | | | | | | | |
| **M650F01a** | | **M650F02a** | | **M650F03b** | | **M650F04b** | |
| **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 0.277 | - | 0.022 | - | 0.243 | - | 0.229 | - |
| Short term | 24h | 0.275 | 0.276 | 0.022 | 0.022 | 0.234 | 0.238 | 0.224 | 0.226 |
| 2d | 0.270 | 0.276 | 0.021 | 0.022 | 0.226 | 0.234 | 0.219 | 0.224 |
| 4d | 0.254 | 0.273 | 0.021 | 0.021 | 0.211 | 0.226 | 0.211 | 0.219 |
| Long term | 7d | 0.223 | 0.268 | 0.019 | 0.021 | 0.190 | 0.215 | 0.200 | 0.213 |
| 14d | 0.152 | 0.247 | 0.016 | 0.020 | 0.149 | 0.194 | 0.182 | 0.202 |
| 21d | 0.099 | 0.222 | 0.013 | 0.019 | 0.116 | 0.175 | 0.171 | 0.193 |
| 28d | 0.065 | 0.197 | 0.010 | 0.018 | 0.091 | 0.161 | 0.163 | 0.187 |
| 50d | 0.017 | 0.138 | 0.005 | 0.014 | 0.042 | 0.123 | 0.151 | 0.174 |
| 100d | 0.002 | 0.074 | 0.001 | 0.009 | 0.007 | 0.074 | 0.138 | 0.159 |
| Plateau concentration (20 cm)  after year 10 | | -c | - | -c | - | -c | - | 0.052 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -c | - | -c | - | -c | - | 0.280 | - |

a Calculated as parent and two parallel metabolites.

b Calculated as parent.

c Not required as DT90 is less than 1 year.

Table 8.7‑14: PECsoil for ametoctradin metabolites on onion, BBCH 14, 2×240 g/ha   
(5-d intervals): Excel PECsoil

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Onion (FOCUS crop: onions),  BBCH 14, 2×240 g/ha (5-d intervals), 10% interception** | | | | | | | |
| **M650F01a** | | **M650F02a** | | **M650F03a** | | **M650F04a** | |
| **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 0.242 | - | 0.059 | - | 0.243 | - | 0.239 | - |
| Short term | 24h | 0.227 | 0.235 | 0.057 | 0.058 | 0.234 | 0.238 | 0.238 | 0.239 |
| 2d | 0.213 | 0.228 | 0.056 | 0.057 | 0.226 | 0.234 | 0.237 | 0.238 |
| 4d | 0.188 | 0.214 | 0.052 | 0.056 | 0.211 | 0.226 | 0.236 | 0.237 |
| Long term | 7d | 0.155 | 0.195 | 0.047 | 0.053 | 0.190 | 0.215 | 0.233 | 0.236 |
| 14d | 0.099 | 0.160 | 0.038 | 0.048 | 0.149 | 0.192 | 0.227 | 0.233 |
| 21d | 0.063 | 0.133 | 0.030 | 0.043 | 0.116 | 0.172 | 0.221 | 0.230 |
| 28d | 0.040 | 0.113 | 0.024 | 0.039 | 0.091 | 0.155 | 0.216 | 0.227 |
| 50d | 0.010 | 0.073 | 0.012 | 0.029 | 0.042 | 0.115 | 0.199 | 0.218 |
| 100d | <0.001 | 0.038 | 0.002 | 0.018 | 0.007 | 0.067 | 0.165 | 0.200 |
| Plateau concentration (20 cm)  after year 4 | | -b | - | -b | - | -b | - | 0.021 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -b | - | -b | - | -b | - | 0.260 | - |

a Calculated as parent.

b Not required as DT90 is less than 1 year.

The initial PECsoil value of ametoctadin and metabolites M650F01, M650F03, M650F04 from PECsoil Excel sheet are in line or slightly lower than the submitted values calculated using ESCAPE. Only PECsoil of metabolite M650F02 is slightly higher.

Table ‑: PECsoil for ametoctradin metabolites on tomato and aubergine, BBCH 21,   
2×240 g/ha (7-d intervals)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Tomato and aubergine (FOCUS crop: tomatoes),  BBCH 21, 2×240 g/ha (7-d intervals), 70% interception** | | | | | | | |
| **M650F01a** | | **M650F02a** | | **M650F03b** | | **M650F04b** | |
| **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 0.089 | - | 0.007 | - | 0.078 | - | 0.075 | - |
| Short term | 24h | 0.088 | 0.089 | 0.007 | 0.007 | 0.076 | 0.077 | 0.073 | 0.074 |
| 2d | 0.086 | 0.089 | 0.007 | 0.007 | 0.073 | 0.076 | 0.072 | 0.073 |
| 4d | 0.081 | 0.088 | 0.007 | 0.007 | 0.068 | 0.073 | 0.069 | 0.072 |
| Long term | 7d | 0.071 | 0.086 | 0.006 | 0.007 | 0.061 | 0.070 | 0.066 | 0.070 |
| 14d | 0.048 | 0.080 | 0.005 | 0.007 | 0.048 | 0.063 | 0.060 | 0.067 |
| 21d | 0.032 | 0.071 | 0.004 | 0.006 | 0.038 | 0.056 | 0.057 | 0.064 |
| 28d | 0.020 | 0.064 | 0.003 | 0.006 | 0.029 | 0.052 | 0.054 | 0.062 |
| 50d | 0.006 | 0.046 | 0.002 | 0.005 | 0.014 | 0.041 | 0.050 | 0.058 |
| 100d | 0.001 | 0.025 | 0.000 | 0.003 | 0.002 | 0.025 | 0.046 | 0.053 |
| Plateau concentration (20 cm)  after year 10 | | -c | - | -c | - | -c | - | 0.017 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | -c | - | -c | - | -c | - | 0.092 | - |

a Calculated as parent and two parallel metabolites.

b Calculated as parent.

c Not required as DT90 is less than 1 year.

~~Table 8.7‑16: PEC~~~~soil~~ ~~for ametoctradin metabolites on tree nursery crops and floriculture crops, BBCH 12, 2×240 g/ha (7-d. intervals)~~

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Tree nursery crops~~~~a~~ ~~and floriculture crops (FOCUS crop: cabbage),  BBCH 12, 2×240 g/ha (7-d. intervals), 25% interception~~~~b~~** | | | | | | | |
| **~~M650F01~~~~c~~** | | **~~M650F02~~~~c~~** | | **~~M650F03~~~~d~~** | | **~~M650F04~~~~d~~** | |
| **~~Actual~~** | **~~TWA~~** | **~~Actual~~** | **~~TWA~~** | **~~Actual~~** | **~~TWA~~** | **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~0.222~~ | ~~-~~ | ~~0.018~~ | ~~-~~ | ~~0.196~~ | ~~-~~ | ~~0.187~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~0.220~~ | ~~0.222~~ | ~~0.018~~ | ~~0.018~~ | ~~0.189~~ | ~~0.193~~ | ~~0.183~~ | ~~0.185~~ |
| ~~2d~~ | ~~0.215~~ | ~~0.221~~ | ~~0.017~~ | ~~0.018~~ | ~~0.183~~ | ~~0.189~~ | ~~0.180~~ | ~~0.183~~ |
| ~~4d~~ | ~~0.202~~ | ~~0.220~~ | ~~0.017~~ | ~~0.018~~ | ~~0.170~~ | ~~0.183~~ | ~~0.173~~ | ~~0.180~~ |
| ~~Long term~~ | ~~7d~~ | ~~0.177~~ | ~~0.215~~ | ~~0.016~~ | ~~0.017~~ | ~~0.153~~ | ~~0.174~~ | ~~0.165~~ | ~~0.175~~ |
| ~~14d~~ | ~~0.120~~ | ~~0.199~~ | ~~0.013~~ | ~~0.017~~ | ~~0.120~~ | ~~0.156~~ | ~~0.151~~ | ~~0.166~~ |
| ~~21d~~ | ~~0.079~~ | ~~0.178~~ | ~~0.010~~ | ~~0.016~~ | ~~0.094~~ | ~~0.141~~ | ~~0.141~~ | ~~0.159~~ |
| ~~28d~~ | ~~0.051~~ | ~~0.160~~ | ~~0.008~~ | ~~0.015~~ | ~~0.074~~ | ~~0.130~~ | ~~0.135~~ | ~~0.154~~ |
| ~~50d~~ | ~~0.014~~ | ~~0.114~~ | ~~0.004~~ | ~~0.012~~ | ~~0.034~~ | ~~0.102~~ | ~~0.126~~ | ~~0.144~~ |
| ~~100d~~ | ~~0.002~~ | ~~0.062~~ | ~~0.001~~ | ~~0.008~~ | ~~0.006~~ | ~~0.061~~ | ~~0.115~~ | ~~0.132~~ |
| ~~Plateau concentration (20 cm)~~  ~~after year 10~~ | | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~0.043~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~0.230~~ | ~~-~~ |

~~a~~ ~~Tree nursery crops are including climbing plants and conifers (incl. Christmas trees), ornamental shrubs and heather forest trees and hedging plants, fruit trees and shrubs.~~

~~b~~ ~~Crop interception is based on FOCUS crop “cabbage” for floriculture crops (DTG code 7.2) and tree nursery crops (DTG code 7.3) following recommendation in Ctgb (2020).~~

~~c~~ ~~Calculated as parent and two parallel metabolites.~~

~~d~~ ~~Calculated as parent.~~

~~e~~ ~~Not required as DT~~~~90~~ ~~is less than 1 year.~~

~~Table 8.7‑17: PEC~~~~soil~~ ~~for ametoctradin metabolites on perennial crops (FOCUS crop: Potatoes), BBCH 12, 2×240 g/ha (7-d. intervals)~~

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Perennial crops (FOCUS crop: potatoes),  BBCH 12, 2×240 g/ha (7-d. intervals), 15% interception~~~~a,b~~** | | | | | | | |
| **~~M650F01~~~~c~~** | | **~~M650F02~~~~c~~** | | **~~M650F03~~~~d~~** | | **~~M650F04~~~~d~~** | |
| **~~Actual~~** | **~~TWA~~** | **~~Actual~~** | **~~TWA~~** | **~~Actual~~** | **~~TWA~~** | **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~0.252~~ | ~~-~~ | ~~0.020~~ | ~~-~~ | ~~0.222~~ | ~~-~~ | ~~0.212~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~0.249~~ | ~~0.251~~ | ~~0.020~~ | ~~0.020~~ | ~~0.214~~ | ~~0.218~~ | ~~0.208~~ | ~~0.210~~ |
| ~~2d~~ | ~~0.244~~ | ~~0.251~~ | ~~0.020~~ | ~~0.020~~ | ~~0.207~~ | ~~0.214~~ | ~~0.204~~ | ~~0.208~~ |
| ~~4d~~ | ~~0.229~~ | ~~0.249~~ | ~~0.019~~ | ~~0.020~~ | ~~0.193~~ | ~~0.207~~ | ~~0.196~~ | ~~0.204~~ |
| ~~Long term~~ | ~~7d~~ | ~~0.201~~ | ~~0.244~~ | ~~0.018~~ | ~~0.020~~ | ~~0.174~~ | ~~0.197~~ | ~~0.187~~ | ~~0.198~~ |
| ~~14d~~ | ~~0.136~~ | ~~0.225~~ | ~~0.015~~ | ~~0.019~~ | ~~0.136~~ | ~~0.177~~ | ~~0.171~~ | ~~0.188~~ |
| ~~21d~~ | ~~0.089~~ | ~~0.202~~ | ~~0.012~~ | ~~0.018~~ | ~~0.106~~ | ~~0.160~~ | ~~0.160~~ | ~~0.181~~ |
| ~~28d~~ | ~~0.058~~ | ~~0.182~~ | ~~0.010~~ | ~~0.017~~ | ~~0.083~~ | ~~0.148~~ | ~~0.154~~ | ~~0.175~~ |
| ~~50d~~ | ~~0.016~~ | ~~0.129~~ | ~~0.005~~ | ~~0.013~~ | ~~0.039~~ | ~~0.115~~ | ~~0.142~~ | ~~0.163~~ |
| ~~100d~~ | ~~0.002~~ | ~~0.070~~ | ~~0.001~~ | ~~0.009~~ | ~~0.007~~ | ~~0.069~~ | ~~0.130~~ | ~~0.149~~ |
| ~~Plateau concentration (5 cm)~~  ~~after year 10~~ | | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~0.194~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~-~~~~e~~ | ~~-~~ | ~~0.407~~ | ~~-~~ |

~~a~~ ~~As a risk envelope to cover application uses on avenue trees at BBCH 12-59.~~

~~b~~ ~~Crop interception is based on FOCUS crop “potatoes” for perennial crops (DTG code 7.4) following recommendation in Ctgb (2020).~~

~~c~~ ~~Calculated as parent and two parallel metabolites.~~

~~d~~ ~~Calculated as parent.~~

~~e~~ ~~Not required as DT~~~~90~~ ~~is less than 1 year.~~

#### Propamocarb HCl

Input parameters for propamocarb HCl for PECsoil calculation are summarized in Table 8.7‑18.

**Table 8.7‑18: Input parameter for propamocarb HCl for PECsoil calculation**

| Compound | Molecular weight  [g/mol] | Max. occurrence [%] | DT50  [d] | Value in accordance to EU endpoint |
| --- | --- | --- | --- | --- |
| Propamocarb HCl | 224.7 | - | 137 (SFO, worst-case, non-normalised laboratory studies, n = 16) | Y (EFSA, 2006) |

PECsoil of propamocarb HCl

Table ‑: PECsoil for propamocarb HCl on potato, BBCH 21, 3×902 g/ha (5-d. intervals)

|  |  |  |  |
| --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Potato (FOCUS crop: potatoes),  BBCH 21, 3×902 g/ha (5-d. intervals), 60% interceptiona** | |
| **Actual** | **TWA** |
| Initial | | 1.407 | - |
| Short term | 24h | 1.400 | 1.404 |
| 2d | 1.393 | 1.400 |
| 4d | 1.379 | 1.393 |
| Long term | 7d | 1.358 | 1.383 |
| 14d | 1.311 | 1.359 |
| 21d | 1.266 | 1.335 |
| 28d | 1.222 | 1.312 |
| 48d | 1.093 | 1.244 |
| 100d | 0.849 | 1.105 |
| Plateau concentration (20 cm)  after year 4 | | 0.069 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | 1.476 | - |

a Risk envelope also covers application use on potato, BBCH 21, 2×902 g/ha (5-d. intervals).

Table ‑: PECsoil for propamocarb HCl on onion, BBCH 14, 1×902 g/ha and 2×902 g/ha (5-d intervals)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Onion (FOCUS crop: onions),  BBCH 14, 1×902 g/ha and 2×902 g/ha (5-d intervals),  10% interception** | | | |
| **Single application** | | **Multiple applications** | |
| **Actual** | **TWA** | **Actual** | **TWA** |
| Initial | | 1.082 |  | 2.138 |  |
| Short term | 24h | 1.077 | 1.080 | 2.127 | 2.132 |
| 2d | 1.072 | 1.077 | 2.116 | 2.127 |
| 4d | 1.061 | 1.072 | 2.095 | 2.116 |
| Long term | 7d | 1.045 | 1.063 | 2.063 | 2.100 |
| 14d | 1.008 | 1.045 | 1.992 | 2.064 |
| 21d | 0.973 | 1.027 | 1.922 | 2.028 |
| 28d | 0.939 | 1.009 | 1.855 | 1.993 |
| 48d | 0.840 | 0.956 | 1.660 | 1.889 |
| 100d | 0.653 | 0.849 | 1.289 | 1.678 |
| Plateau concentration (20 cm)  after year 5 (single and multiple) | | 0.051 | - | 0.103 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | 1.133 | - | 2.241 | - |

Table ‑: PECsoil for propamocarb HCl on tomato and aubergine, BBCH 21, 2×902 g/ha (7-d intervals)

|  |  |  |  |
| --- | --- | --- | --- |
| **PECsoil**  **(mg/kg)** | | **Tomato and aubergine (FOCUS crop: tomatoes),  BBCH 21, 2×902 g/ha (7-d intervals), 70% interception** | |
| **Actual** | **TWA** |
| Initial | | 0.709 | - |
| Short term | 24h | 0.705 | 0.707 |
| 2d | 0.702 | 0.705 |
| 4d | 0.695 | 0.702 |
| Long term | 7d | 0.684 | 0.697 |
| 14d | 0.661 | 0.685 |
| 21d | 0.638 | 0.673 |
| 28d | 0.615 | 0.661 |
| 48d | 0.551 | 0.626 |
| 100d | 0.428 | 0.556 |
| Plateau concentration (20 cm)  after year 3 | | 0.034 | - |
| PECaccumulation  (PECact +PECsoil plateau) | | 0.743 | - |

~~Table 8.7‑22: PEC~~~~soil~~ ~~for propamocarb HCl on tree nursery crops and floriculture crops, BBCH 12, 2×902 g/ha (7-d. intervals)~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Tree nursery crops~~~~a~~ ~~and floriculture crops (FOCUS crop: cabbage),  BBCH 12, 2×902 g/ha (7-d. intervals), 25% interception~~~~b~~** | |
| **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~1.773~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~1.764~~ | ~~1.768~~ |
| ~~2d~~ | ~~1.755~~ | ~~1.764~~ |
| ~~4d~~ | ~~1.737~~ | ~~1.755~~ |
| ~~Long term~~ | ~~7d~~ | ~~1.711~~ | ~~1.742~~ |
| ~~14d~~ | ~~1.651~~ | ~~1.711~~ |
| ~~21d~~ | ~~1.594~~ | ~~1.682~~ |
| ~~28d~~ | ~~1.538~~ | ~~1.653~~ |
| ~~48d~~ | ~~1.390~~ | ~~1.574~~ |
| ~~100d~~ | ~~1.069~~ | ~~1.391~~ |
| ~~Plateau concentration (20 cm) after year 4~~ | | ~~0.086~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~1.859~~ | ~~-~~ |

~~a~~ ~~Tree nursery crops are including climbing plants and conifers (incl. Christmas trees), ornamental shrubs and heather forest trees and hedging plants, fruit trees and shrubs.~~

~~b~~ ~~Crop interception is based on FOCUS crop “cabbage” for floriculture crops (DTG code 7.2) and tree nursery crops (DTG code 7.3) following recommendation in Ctgb (2020).~~

~~Table 8.7‑23: PEC~~~~soil~~ ~~for propamocarb HCl on perennial crops, BBCH 12, 2×902 g/ha (7-d. intervals)~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~PEC~~~~soil~~**  **~~(mg/kg)~~** | | **~~Parennial crops (FOCUS crop: potatoes),  BBCH 12, 2×902 g/ha (7-d. intervals), 15% interception~~~~a, b~~** | |
| **~~Actual~~** | **~~TWA~~** |
| ~~Initial~~ | | ~~2.009~~ | ~~-~~ |
| ~~Short term~~ | ~~24h~~ | ~~1.999~~ | ~~2.004~~ |
| ~~2d~~ | ~~1.989~~ | ~~1.999~~ |
| ~~4d~~ | ~~1.969~~ | ~~1.989~~ |
| ~~Long term~~ | ~~7d~~ | ~~1.939~~ | ~~1.974~~ |
| ~~14d~~ | ~~1.872~~ | ~~1.939~~ |
| ~~21d~~ | ~~1.806~~ | ~~1.906~~ |
| ~~28d~~ | ~~1.744~~ | ~~1.873~~ |
| ~~48d~~ | ~~1.560~~ | ~~1.775~~ |
| ~~100d~~ | ~~1.211~~ | ~~1.577~~ |
| ~~Plateau concentration (5 cm) after year 5~~ | | ~~0.390~~ | ~~-~~ |
| ~~PEC~~~~accumulation~~  ~~(PEC~~~~act~~ ~~+PEC~~~~soil plateau~~~~)~~ | | ~~2.399~~ | ~~-~~ |

~~a~~ ~~As a risk envelope to cover application uses on avenue trees at BBCH 12-59.~~

~~b~~ ~~Crop interception is based on FOCUS crop “potatoes” for perennial crops (DTG code 7.4) following recommendation in Ctgb (2020).~~

### PECsoil of formulation BAS 743 03 F

Calculation of the PECsoil value for the formulation BAS 743 03 F was performed by the applicant using Excel spreadsheet, for application rates of 2.0 L product/ha (equivalent to 2.142 kg product/ha, respectively assuming a density of 1.071 g/mL) on field crops to cover application uses on potato, ~~floriculture crops, climbing plants and conifers (incl. Christmas trees), ornamental shrubs, heather, perennial crops, avenue trees, forest trees and hedging plants, fruit trees and shrubs~~ tomato and aubergine).

Table ‑: PECsoil for the formulation BAS 743 03 F following applications to field crops

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Application rate [L/ha]a** | **Crop** | **Application rate [kg/ha] b** | **Interception [%]c** | **PECsoil actual [mg/kg]: 5 cm** |
| 1 × 2.0 | Onion | 1 × 2.142 | 10 | 2.570 |
| 6.0 (3x2.0) | Onion | 1 x 6.426 | 10 | 7.711 |

a It is considered appropriate to assume a single application for BAS 743 03 F, since the formulation will break down to component parts after application and will not persist as formulated product.

b Based on a product density of 1.071 g/mL.

c Crop interception is based on FOCUS crop “onion” at BBCH stage 14, taken from FOCUSgw (2021) as a risk envelope use for other field crops.

## Predicted Environmental Concentrations in groundwater (PECGW) (KCP 9.2.4)

|  |
| --- |
| **Review Comments:**  The PECGW calculations for ametoctradin, its metabolites and for propamocarb HCl were provided by the Applicant and are considered acceptable. To cover all proposed uses, for propamocarb HCl, additional calculations with PUF of 0 were performed by zRMS for the worst case exposure scenario: use on onion, BBCH 14, 2 × 902 g/ha, every year. The results obtained do not affect the conclusions of the evaluation (PECGW < 0.001 µg/L).  For active substances and relevant metabolites PECGW calculations were performed with FOCUS MACRO 5.5.4 (ametoctradin) and FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4. The EU agreed endpoints were used. Geometric mean Kfoc and Kfom (instead of an arithmetic mean Kfoc and Kfom) for all compounds were derived from the datasets presented in the EFSA Journal 2012;10(11):2921 and EFSA Scientific Report (2006) 78, 1-80 for consistency with current FOCUS groundwater recommendation.  The leaching simulation run with FOCUS PELMO, FOCUS PEARL and FOCUS MACRO resulted in PECGW values below 0.1 µg/L for ametoctradin, metabolites M650F01, M650F02 and for M650F03, M650F04 for applications to acidic soil, for all FOCUS scenarios. Under alkaline soil condition, metabolites M650F03 and M650F04 exceed the threshold of 0.1 µg/L, but below 10 µg/L for all application uses and all simulated models. However, these metabolites were subjected to a non-relevance assessment including a consumer exposure assessment according to the Guidance Document1 on the assessment of the relevance of metabolites in groundwater (see section Part B section 10). Based on this assessment metabolites M650F03 and M650F04 are considered non-relevant with regard to groundwater for the proposed uses.  It should be noted that for two applications in an onions and three applications in potatoes, the simulations were performed for the application every 2nd year.  It should be noted that for the two applications in onions and three applications in potatoes, simulations were carried out for the application every 2 years.  All leaching simulation run with FOCUS PELMO, FOCUS PEARL resulted in PECGW values below 0.1 µg/L for propamocarb HCl for all FOCUS scenarios.  In conclusion, the results demonstrate that BAS 743 03 F can be used safely without risk of ametoctradin, its metabolites and for propamocarb HCl exceeding acceptable levels in groundwater. |

### Justification for new endpoints

In accordance with the state-of-the-art guidelines regarding Kf,oc values to be used for PECGW calculations (FOCUS, 2021), a geometric mean Kf,oc value (3462 and 30.6 mL/g) for substances was selected instead of arithmetic mean (3779 and 36.1 mL/g) for the active substance ametoctradin and metabolite M650F02, respectively. Please note that to account for pH dependent sorption in case of metabolites M650F01, M650F03 and M650F04 are in line with the FOCUS GW guidance (2021), PECGW calculations are performed separately for two contrasting pH values resulting in best and worst-case adsorption following recommendation from RMS (EFSA, 2012 and DAR, 2011).

In addition, according to the FOCUS groundwater guidance (2021) a plant uptake factor (PUF) of 0 is recommended for all substances. Thus, the PUF values for ametoctradin and its two metabolites M650F01 and M650F02 were changed from 0.5 to 0 for current PECGW calculations. For M650F03 and M650F04 additional information was available from an uptake study conducted with hops and tomatoes (Gourlay, V. and Möndel, M., 2012)[[7]](#footnote-7). In this study it was concluded that the metabolites are taken up by the plants via the root systems concurrently with the water. The plants seem to neither prefer nor exclude the uptake of dissolved metabolites, but simply take them up as a by-product during water consumption. Based on these experimental findings and in accordance with the EFSA Conclusion (2012), a TSCF value of 0.5 was used as input parameter for the two metabolites M650F03 and M650F04.

A geometric mean Kf,oc value (263.6 mL/g) for propamocarb HCl was selected instead of arithmetic mean (535.6 mL/g). The value was derived from the peer reviewed data in EFSA conclusions on propamocarb HCl (EFSA Journal 2006).

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

Predicted environmental concentrations in leachate/groundwater (PECGW) were conducted for application uses of ametoctradin and its metabolites and propamocarb HCl in BAS 743 03 F on various crops in the Central Zone of the European Union (CEU).

The intended GAPs in CEU countries except the Netherlands have been calculated for PECGW following to recommendations in FOCUS Generic Guidance GW (FOCUS, 2021). ~~For application uses in the Netherlands, PEC~~~~GW~~ ~~are determined with specific national requirements following the NL framework (Ctgb, 2022)~~~~[[8]](#footnote-8)~~~~. The calculations are presented in the national addendum for the Netherlands.~~

The PECGW simulations were determined using FOCUS PEARL 5.5.5, FOCUS PELMO 6.6.4 and FOCUS MACRO 5.5.4 (if applicable) with the FOCUS groundwater scenarios.

PECGW calculations for application uses of BAS 743 03 F on various crops are summarized in reports by Halle and Jarvis (2023a and 2023b).

Additional PECGW calculations for propamocarb HCl using PUF = 0 (national requirements and FOCUS groundwater guidance (2021)) have been performed following to zRMS PL request. The calculations are demonstrated for the worst-case application use on onion, BBCH 14, 2 × 902 g/ha, every 2nd year. Example input and output files are directly presented in this dossier (Appendix A 3.2).

The GAPs and application parameters related to application uses of BAS 743 03 F for PECGW calculations are presented in Table 8.8‑1.

Application dates used for the groundwater risk assessment for various crops for ametoctradin and propamocarb HCl are presented in Table 8.8‑2 to Table 8.8‑4.

Input parameters for ametoctradin and its metabolites and propamocarb HCl used in PECGW calculation are summarized in Table 8.8‑5 and Table 8.8‑17, respectively.

**Table 8.8‑1: Input parameters related to application for PECGW calculations**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Use No. | 2 | 1 | ~~6~~ 4 | ~~5~~ 3 | ~~7~~ 5 |
| Crop | Potato | Potato | Onion | Onion | Tomato, aubergine |
| FOCUS crops | Potatoes | Potatoes | Onions | Onions | Tomatoes |
| Application rate (g a.s./ha) | Ametoctradin: 240 Propamocarb HCl: 902 | | | | |
| Number of applications/interval | 2 / 5 | 3 / 5 | 1 | 2/ 5 | 2 / 7 |
| BBCH growth stagea | 21-89 | 21-89 | 14-49 | 14-49 | 21-89 |
| Crop interception (%)b,c | Early: 60 Late: 85 | Early: 60 Late: 85 | Early: 10 Late: 40 | Early: 10 Late: 40 | Early: 70  Late: 80 |
| Effective application rate after interception (g a.s./ha)d | Early:  96 / 361  Late:  36 / 135 | Early:  96 / 361  Late:  36 / 135 | Early:  216 / 812  Late:  144 / 541 | Early:  216 / 812  Late:  144 / 541 | Early:  72 / 271 Late:  48 / 180 |
| Frequency of application | Every year | Every 2nd year | Every year | Every 2nd year | Every year |
| Application method | Ground spray | | | | |
| Application date | Absolute date (see Table 8.8‑2 to Table 8.8‑4) | | | | |
| Method of calculation | Ametoctradin: PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4  Propamocarb HCl: PEARL 5.5.5 and PELMO 6.6.4e | | | | |
| Reference report no. | Ametoctradin: 2023/2017534 Propamocarb HCl: 2023/2017535 | | | | |

a Due to wide range of BBCH growth stage, simulations were conducted for early and late applications.

b PECGW simulation were conducted for the earliest BBCH growth stage.

c Interception according to FOCUS (2021).

d Effective application rate after interception for ametoctradin and propamocarb HCl, respectively.

e MACRO simulation was calculated only for ametoctradin and its metabolites. For propamocarb HCl, PECGW values calculated with FOCUS PEARL and FOCUS PELMO were below 0.001 μg/L for all substances, therefore MACRO simulation is not required (CEU guidance, 2018)[[9]](#footnote-9).

Application dates (absolute date) used for PEARL, PELMO and MACRO calculation for various crops are presented in the tables below.

**Table 8.8‑2: Application dates used in the simulations for potato (FOCUS crop: potatoes)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **Application date (Julian date)a** | | |
| **1st application** | **2nd application** | **3rd application** |
| Potato (early),  BBCH 21, multiple applications  (5-d intervals) | Châteaudun | 13-May (133) | 18-May (138) | - |
| Hamburg | 30-May | 4-Jun | - |
| Jokioinen | 29-Jun | 4-Jul | - |
| Kremsmünster | 30-May | 4-Jun | - |
| Okehampton | 22-May | 27-May | - |
| Piacenza | 2-May | 7-May | - |
| Porto | 6-Apr | 11-Apr | - |
| Sevilla | 17-Feb | 22-Feb | - |
| Thiva | 18-Mar | 23-Mar | - |
| Potato (late),  BBCH 89, multiple applications (5-d intervals, PHI 7) | Châteaudun | 20-Aug (232) | 25-Aug (237) | - |
| Hamburg | 3-Sep | 8-Sep | - |
| Jokioinen | 13-Sep | 18-Sep | - |
| Kremsmünster | 3-Sep | 8-Sep | - |
| Okehampton | 20-Aug | 25-Aug | - |
| Piacenza | 29-Aug | 3-Sep | - |
| Porto | 3-Jun | 8-Jun | - |
| Sevilla | 19-May | 24-May | - |
| Thiva | 18-Jul | 23-Jul | - |
| Potato (early),  BBCH 21,  multiple applications (5-d intervals) | Châteaudun | 13-May (133) | 18-May (138) | 23-May (143) |
| Hamburg | 30-May | 4-Jun | 9-Jun |
| Jokioinen | 29-Jun | 4-Jul | 9-Jul |
| Kremsmünster | 30-May | 4-Jun | 9-Jun |
| Okehampton | 22-May | 27-May | 1-Jun |
| Piacenza | 2-May | 7-May | 12-May |
| Porto | 6-Apr | 11-Apr | 16-Apr |
| Sevilla | 17-Feb | 22-Feb | 27-Feb |
| Thiva | 18-Mar | 23-Mar | 28-Mar |
| Potato (late),  BBCH 89,  multiple applications (5-d intervals, PHI 7) | Châteaudun | 15-Aug (227) | 20-Aug (232) | 25-Aug (237) |
| Hamburg | 29-Aug | 3-Sep | 8-Sep |
| Jokioinen | 8-Sep | 13-Sep | 18-Sep |
| Kremsmünster | 29-Aug | 3-Sep | 8-Sep |
| Okehampton | 15-Aug | 20-Aug | 25-Aug |
| Piacenza | 24-Aug | 29-Aug | 3-Sep |
| Porto | 29-May | 3-Jun | 8-Jun |
| Sevilla | 14-May | 19-May | 24-May |
| Thiva | 13-Jul | 18-Jul | 23-Jul |

a For early applications, first application date was selected at the earliest BBCH growth stage using AppDate 3.06. For late application, last application date was set at harvest date minus PHI.

**Table 8.8‑3: Application dates used in the simulations for onion (FOCUS crop: onions)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cropa** | **Scenario** | **Application date (Julian date)** | |
| **1st application** | **2nd application** |
| Onion (early)b,  BBCH 14,  single and multiple applications (5-d intervals) | Châteaudun | 22-May (142) | 27-May (147) |
| Hamburg | 22-May | 27-May |
| Jokioinen | 4-Jun | 9-Jun |
| Kremsmünster | 22-May | 27-May |
| Porto | 31-Mar | 5-Apr |
| Thiva | 7 -May | 12-May |
| Onion (late)b,  BBCH 49,  single and multiple applications (5-d intervals, PHI 7) | Châteaudun | 20-Aug (232) | 25-Aug (237) |
| Hamburg | 20-Aug | 25-Aug |
| Jokioinen | 3-Aug | 8-Aug |
| Kremsmünster | 20-Aug | 25-Aug |
| Porto | 19-May | 24-May |
| Thiva | 18-Jun | 23-Jun |

a Simulated with FOCUS crop “vegetable, bulb” for MACRO.

b For early applications, first application date was selected at the earliest BBCH growth stage using AppDate 3.06. For late application, last application date was set at harvest date minus PHI.

**Table 8.8‑4: Application dates used in the simulations for tomato and aubergine (FOCUS crop: tomatoes)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cropa** | **Scenario** | **Application date (Julian date)b** | |
| **1st application** | **2nd application** |
| Tomato and aubergine (early),  BBCH 21,  multiple applications (7-d intervals) | Châteaudun | 29-May (149) | 5-Jun (156) |
| Piacenza | 29-May | 5-Jun |
| Porto | 18-Apr | 25-Apr |
| Sevilla | 2-May | 9-May |
| Thiva | 29-Apr | 6-May |
| Tomato and aubergine (late),  BBCH 89,  multiple applications (7-d intervals, PHI 1) | Châteaudun | 17-Aug (229) | 24-Aug (236) |
| Piacenza | 17-Aug | 24-Aug |
| Porto | 23-Aug | 30-Aug |
| Sevilla | 23-Jun | 30-Jun |
| Thiva | 2-Sep | 9-Sep |

a Simulated with FOCUS crop “vegetable, fruiting” for MACRO.

b For early applications, first application date was selected at the earliest BBCH growth stage using AppDate 3.06. For late application, last application date was set at harvest date minus PHI.

#### Ametoctradin and its metabolites

**Table 8.8‑5: Input parameters related to active substance ametoctradin and its metabolites for PECGW calculations**

| **Parameter** | **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** | **Value in accordance with EU endpoint** |
| --- | --- | --- | --- | --- | --- | --- |
| Molecular weight [g/mol] | 275.4 | 249.3 | 235.3 | 221.2 | 207.2 | Y (EFSA, 2012) |
| Water solubility [mg/L], at 20°C | 0.14 0.15 (25°C)a 0.28 (30°C) | 3800 | 79000 | 2900 | 350 | Y (EFSA, 2012) |
| Vapor pressure [Pa], at 20°C | 2.1×10-10 (20°C)  8.4×10-10 (30°C) | 1×10-9 | 1×10-9 | 1×10-9 | 1×10-9 | Y (EFSA, 2012) |
| DT50 (soil) [d] | 1.79 (geometric mean, normalised lab, n=4) | 2.4 (geometric mean, normalised lab, n=4) | 7.5 (geometric mean, normalised lab, n=4) | 43.8 (geometric mean, normalised lab, n=8) | 49 (geometric mean, normalised field, n=5) | Y (EFSA, 2012) |
| Transformation rate [1/d] | to M650F01: 0.33805 to M650F02: 0.04918 | to M650F03: 0.18946,  to sink: 0.09935 | to M650F04: 0.09242 | to M650F04: 0.01583 | to sink: 0.01415 | Calculated |
| Kf,oc [mL/g] | 3462 (geometric mean, n=7)b | 42.1 at pH 9.7 787.2 at pH 0.1 (sigmoidal function, n=6, pka 4, pH correction 0)c | 30.6  (geometric mean, n=7)b | 23.4 at pH 8.6 502.4 at pH 0.1 (sigmoidal function, n=12, pka 3.8, pH correction 0.1)c | 16.3 at pH 8.5 219.9 at pH 0.2 (sigmoidal function, n=12, pka 4, pH correction 0.1)c | N (calculated from EFSA, 2012) |
| Kf,om [mL/g] | 2008.1 (geometric mean, n=7) | 24.41 at pH 9.7 456.6 at pH 0.1 (sigmoidal function, n=6, pka 4, pH correction 0)c | 17.7  (geometric mean, n=7)b | 13.56 at pH 8.6 291.44 at pH 0.1 (sigmoidal function, n=12, pka 3.8, pH correction 0.1)c | 9.48 at pH 8.5 127.6 at pH 0.2 (sigmoidal function, n=12, pka 4, pH correction 0.1)c | N (calculated from EFSA, 2012) |
| 1/n [-] | 0.767 (arithmetic mean, n=7) | 0.900 (arithmetic mean, n=6) | 0.977 (arithmetic mean, n=7) | 0.909 (arithmetic mean, n=12) | 0.852 (arithmetic mean, n=12) | Y (EFSA, 2012) |
| Plant uptake factor (PUF/TSCF) [-] | 0 | 0 | 0 | 0.5d | 0.5d | Y (EFSA, 2012) |
| Formation fraction  [-] | - | 0.873  (from parent) | 0.127  (from parent) | 0.656  (from M650F01) | 1  (from M650F02), 1  (from M650F03) | Y (EFSA, 2012) |
| Conversion fraction [-] | - | 0.79026  (from parent) | 0.10851  (from parent) | 0.58206 (from M650F01) | 0.88058 (from M650F02),  0.93671 (from M650F03) | Calculated |

a Water solubility 0.15 mg/L at 25oC was reported in EFSA (2012), the value 0.14 mg/L at 20oC was calculated using EVA 3 tool.

b As conservative worst-case PECGW calculations, geometric mean Kf,oc values for ametoctradin and M650F02 were selected instead of arithmetic mean (LOEP-EFSA, 2012).

c For metabolites M650F01, M650F03 and M650F04, a pH dependence sorption is observed. PECGW calculations were performed with pH in-dependent option in PEARL and PELMO using two sets of Kf,oc values at two contrasting pH values (acidic and alkaline).

d As discussed in Gourlay, V., Möndel, M. (2012).

**Table 8.8‑6: Application scheme and applied dose for MACRO simulation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Effective application rate**  **[g/ha]** | **MACRO application scheme and applied dose [g/ha]** | | | | |
| **Ametoctradin to M650F01** | **Ametoctradin to M650F02** | **M650F01 to M650F03** | **M650F02 to M650F04 (a)a** | **M650F03 to M650F04 (b)a** |
| Potato (early),  BBCH 21, 240 g/ha (60% interception) | 96 | 96 | 96 | 75.87 | 10.42 | 44.16 |
| Potato (late),  BBCH 89, 240 g/ha (85% interception) | 36 | 36 | 36 | 28.45 | 3.91 | 16.56 |
| Onion (early),  BBCH 14, 240 g/ha (10% interception) | 216 | 216 | 216 | 170.7 | 23.44 | 99.36 |
| Onion (late),  BBCH 49, 240 g/ha (40% interception) | 144 | 144 | 144 | 113.8 | 15.63 | 66.24 |
| Tomato and aubergine (early), BBCH 21,  240 g/ha (70% interception) | 72 | 72 | 72 | 56.90 | 7.81 | 33.12 |
| Tomato and aubergine (late), BBCH 89,  240 g/ha (80% interception) | 48 | 48 | 48 | 37.93 | 5.21 | 22.08 |

a PECGW of M650F04 = PECGW M650F04 (a) + PECGW M650F04 (b).

**PECGW for ametoctradin and its metabolites**

**Application to potato**

**Table 8.8‑7: PECGW for ametoctradin and its metabolites following twofold application to potato (FOCUS crop: potatoes), BBCH 21-89 at 240 g a.s./ha (5-d intervals), every year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH<7 (acid)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Potato  (early), BBCH 21, 2×240 g a.s./ha  (5-d intervals),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.003 | <0.001 | 0.002 |
| Jokioinen | <0.001 | <0.001 | 0.003 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | 0.002 | <0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.002 | <0.001 | 0.001 |
| Jokioinen | <0.001 | <0.001 | 0.004 | <0.001 | 0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | 0.003 | <0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | 0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Potato (late), BBCH 89, 2×240 g a.s./ha  (5-d intervals),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.008 | <0.001 | 0.007 |
| Jokioinen | <0.001 | <0.001 | 0.004 | <0.001 | 0.003 |
| Kremsmünster | <0.001 | <0.001 | 0.002 | <0.001 | 0.002 |
| Okehampton | <0.001 | <0.001 | 0.006 | <0.001 | 0.002 |
| Piacenza | <0.001 | <0.001 | 0.006 | <0.001 | 0.003 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.010 | <0.001 | 0.006 |
| Jokioinen | <0.001 | <0.001 | 0.009 | <0.001 | 0.003 |
| Kremsmünster | <0.001 | <0.001 | 0.004 | <0.001 | 0.002 |
| Okehampton | <0.001 | <0.001 | 0.007 | <0.001 | 0.002 |
| Piacenza | <0.001 | <0.001 | 0.011 | <0.001 | 0.003 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

**Table 8.8‑8: PECGW for ametoctradin and its metabolites following twofold application to potato (FOCUS crop: potatoes), BBCH 21-89 at 240 g a.s./ha (5-d intervals), every year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH>7 (alkaline)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Potato  (early), BBCH 21, 2×240 g a.s./ha  (5-d intervals),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.957 | 5.392 |
| Hamburg | <0.001 | <0.001 | 0.003 | 3.349 | 7.406 |
| Jokioinen | <0.001 | <0.001 | 0.003 | 3.296 | 6.908 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 2.378 | 5.422 |
| Okehampton | <0.001 | <0.001 | 0.002 | 2.649 | 5.241 |
| Piacenza | <0.001 | <0.001 | <0.001 | 1.119 | 2.867 |
| Porto | <0.001 | <0.001 | <0.001 | 0.742 | 2.363 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.234 | 1.122 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.634 | 2.495 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.508 | 4.187 |
| Hamburg | <0.001 | <0.001 | 0.002 | 2.510 | 5.459 |
| Jokioinen | <0.001 | <0.001 | 0.004 | 2.887 | 5.968 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 2.082 | 4.564 |
| Okehampton | <0.001 | <0.001 | 0.003 | 2.252 | 4.478 |
| Piacenza | <0.001 | <0.001 | <0.001 | 0.994 | 2.438 |
| Porto | <0.001 | <0.001 | <0.001 | 1.028 | 2.722 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.266 | 1.217 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.466 | 1.840 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.913 | 2.743 |
| Potato (late), BBCH 89, 2×240 g a.s./ha  (5-d intervals),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.797 | 2.003 |
| Hamburg | <0.001 | <0.001 | 0.008 | 1.847 | 3.140 |
| Jokioinen | <0.001 | <0.001 | 0.004 | 1.318 | 2.410 |
| Kremsmünster | <0.001 | <0.001 | 0.002 | 1.058 | 1.956 |
| Okehampton | <0.001 | <0.001 | 0.006 | 1.587 | 2.402 |
| Piacenza | <0.001 | <0.001 | 0.006 | 1.537 | 2.230 |
| Porto | <0.001 | <0.001 | <0.001 | 0.299 | 0.947 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.085 | 0.477 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.312 | 1.153 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.683 | 1.905 |
| Hamburg | <0.001 | <0.001 | 0.010 | 1.992 | 3.223 |
| Jokioinen | <0.001 | <0.001 | 0.009 | 1.377 | 2.481 |
| Kremsmünster | <0.001 | <0.001 | 0.004 | 1.133 | 2.085 |
| Okehampton | <0.001 | <0.001 | 0.007 | 1.727 | 2.569 |
| Piacenza | <0.001 | <0.001 | 0.011 | 1.568 | 2.104 |
| Porto | <0.001 | <0.001 | <0.001 | 0.570 | 1.403 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.107 | 0.565 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.237 | 1.020 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.685 | 1.646 |

**Table 8.8‑9: PECGW for ametoctradin and its metabolites following threefold application to potato (FOCUS crop: potatoes), BBCH 21-89 at 240 g a.s./ha (5-d intervals), every 2nd year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH<7 (acid)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Potato  (early), BBCH 21, 3×240 g a.s./ha  (5-d intervals),  every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.001 | <0.001 | 0.002 |
| Jokioinen | <0.001 | <0.001 | 0.003 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| Jokioinen | <0.001 | <0.001 | 0.003 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | 0.002 | <0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | 0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Potato (late), BBCH 89, 3×240 g a.s./ha  (5-d intervals),  every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.006 | <0.001 | 0.005 |
| Jokioinen | <0.001 | <0.001 | 0.004 | <0.001 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.002 | <0.001 | 0.001 |
| Okehampton | <0.001 | <0.001 | 0.004 | <0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | 0.003 | <0.001 | 0.002 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.007 | <0.001 | 0.003 |
| Jokioinen | <0.001 | <0.001 | 0.007 | <0.001 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.003 | <0.001 | 0.001 |
| Okehampton | <0.001 | <0.001 | 0.006 | <0.001 | 0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

**Table 8.8‑10: PECGW for ametoctradin and its metabolites following threefold application to potato (FOCUS crop: potatoes), BBCH 21-89 at 240 g a.s./ha (5-d intervals), every 2nd year – simulated with pH independent option using KFOC of M650F01, M650F03 and M650F04 under pH>7 (alkaline)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Potato  (early), BBCH 21, 3×240 g a.s./ha  (5-d intervals),  every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.551 | 4.160 |
| Hamburg | <0.001 | <0.001 | 0.001 | 2.803 | 5.871 |
| Jokioinen | <0.001 | <0.001 | 0.003 | 2.371 | 5.422 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 1.881 | 4.279 |
| Okehampton | <0.001 | <0.001 | 0.001 | 2.021 | 4.187 |
| Piacenza | <0.001 | <0.001 | <0.001 | 0.875 | 2.264 |
| Porto | <0.001 | <0.001 | <0.001 | 0.566 | 1.817 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.199 | 0.903 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.469 | 1.795 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.116 | 3.225 |
| Hamburg | <0.001 | <0.001 | 0.001 | 1.897 | 4.509 |
| Jokioinen | <0.001 | <0.001 | 0.003 | 2.083 | 4.583 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 1.618 | 3.755 |
| Okehampton | <0.001 | <0.001 | 0.002 | 1.827 | 3.369 |
| Piacenza | <0.001 | <0.001 | <0.001 | 0.825 | 2.033 |
| Porto | <0.001 | <0.001 | <0.001 | 0.815 | 2.049 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.217 | 0.954 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.321 | 1.262 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.735 | 2.081 |
| Potatoes (late), BBCH 89, 3×240 g a.s./ha  (5-d intervals),  every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.589 | 1.596 |
| Hamburg | <0.001 | <0.001 | 0.006 | 1.598 | 2.496 |
| Jokioinen | <0.001 | <0.001 | 0.004 | 0.988 | 1.813 |
| Kremsmünster | <0.001 | <0.001 | 0.002 | 0.831 | 1.694 |
| Okehampton | <0.001 | <0.001 | 0.004 | 1.327 | 1.997 |
| Piacenza | <0.001 | <0.001 | 0.003 | 1.010 | 1.677 |
| Porto | <0.001 | <0.001 | <0.001 | 0.232 | 0.805 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.066 | 0.332 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.255 | 1.003 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.490 | 1.468 |
| Hamburg | <0.001 | <0.001 | 0.007 | 1.554 | 2.526 |
| Jokioinen | <0.001 | <0.001 | 0.007 | 0.863 | 1.819 |
| Kremsmünster | <0.001 | <0.001 | 0.003 | 0.819 | 1.729 |
| Okehampton | <0.001 | <0.001 | 0.006 | 1.348 | 1.993 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | 0.469 | 1.190 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.069 | 0.388 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.171 | 0.766 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.526 | 1.315 |

**Application to onion**

**Table 8.8‑11: PECGW for ametoctradin and its metabolites following single application to onion (FOCUS crop: onions), BBCH 14-49 at 240 g a.s./ha, every year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH<7 (acid)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Onion (early), BBCH 14, 1×240 g a.s./ha  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.002 | <0.001 | 0.002 |
| Jokioinen | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.002 | <0.001 | 0.002 |
| Jokioinen | <0.001 | <0.001 | 0.002 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Onion (late), BBCH 49, 1×240 g a.s./ha, every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.010 | <0.001 | 0.007 |
| Jokioinen | <0.001 | <0.001 | 0.004 | <0.001 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.003 | <0.001 | 0.002 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.012 | <0.001 | 0.006 |
| Jokioinen | <0.001 | <0.001 | 0.005 | <0.001 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.004 | <0.001 | 0.003 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |

**Table 8.8‑12: PECGW for ametoctradin and its metabolites following single application to onion (FOCUS crop: onions), BBCH 14-49 at 240 g a.s./ha, every year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH>7 (alkaline)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Onion (early), BBCH 14, 1×240 g a.s./ha,  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.701 | 5.292 |
| Hamburg | <0.001 | <0.001 | 0.002 | 3.567 | 7.998 |
| Jokioinen | <0.001 | <0.001 | 0.001 | 3.049 | 7.232 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 2.512 | 5.827 |
| Porto | <0.001 | <0.001 | <0.001 | 0.845 | 2.605 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.388 | 1.935 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.284 | 4.205 |
| Hamburg | <0.001 | <0.001 | 0.002 | 2.714 | 6.338 |
| Jokioinen | <0.001 | <0.001 | 0.002 | 2.778 | 6.373 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 2.254 | 5.111 |
| Porto | <0.001 | <0.001 | <0.001 | 1.124 | 3.162 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.325 | 1.638 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.170 | 3.538 |
| Onion (late), BBCH 49, 1×240 g a.s./ha,  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.799 | 4.543 |
| Hamburg | <0.001 | <0.001 | 0.010 | 3.706 | 6.344 |
| Jokioinen | <0.001 | <0.001 | 0.004 | 2.721 | 5.318 |
| Kremsmünster | <0.001 | <0.001 | 0.003 | 2.149 | 4.137 |
| Porto | <0.001 | <0.001 | <0.001 | 0.544 | 1.841 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.280 | 1.464 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.487 | 4.203 |
| Hamburg | <0.001 | <0.001 | 0.012 | 3.824 | 6.632 |
| Jokioinen | <0.001 | <0.001 | 0.005 | 2.639 | 5.184 |
| Kremsmünster | <0.001 | <0.001 | 0.004 | 2.248 | 4.477 |
| Porto | <0.001 | <0.001 | <0.001 | 1.141 | 2.894 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.262 | 1.327 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.530 | 3.787 |

**Table 8.8‑13: PECGW for ametoctradin and its metabolites following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 240 g a.s./ha (5-d intervals), every 2nd year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH<7 (acid)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Onion (early),  BBCH 14, 2×240 g a.s./ha  (5-d intervals), every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.002 | <0.001 | 0.002 |
| Jokioinen | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| Jokioinen | <0.001 | <0.001 | 0.002 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Onion (late),  BBCH 49, 2×240 g a.s./ha  (5-d intervals),  every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.013 | <0.001 | 0.010 |
| Jokioinen | <0.001 | <0.001 | 0.005 | <0.001 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.003 | <0.001 | 0.002 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | 0.011 | <0.001 | 0.007 |
| Jokioinen | <0.001 | <0.001 | 0.007 | <0.001 | 0.002 |
| Kremsmünster | <0.001 | <0.001 | 0.005 | <0.001 | 0.002 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | 0.007 | <0.001 | <0.001 |

**Table 8.8‑14: PECGW for ametoctradin and its metabolites following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 240 g a.s./ha (5-d intervals), every 2nd year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH>7 (alkaline)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Onion (early),  BBCH 14, 2×240 g a.s./ha  (5-d intervals), every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.957 | 5.861 |
| Hamburg | <0.001 | <0.001 | 0.002 | 4.051 | 8.650 |
| Jokioinen | <0.001 | <0.001 | 0.001 | 3.235 | 7.768 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 2.789 | 6.377 |
| Porto | <0.001 | <0.001 | <0.001 | 0.792 | 2.595 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.446 | 2.146 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.402 | 4.480 |
| Hamburg | <0.001 | <0.001 | 0.001 | 2.895 | 7.267 |
| Jokioinen | <0.001 | <0.001 | 0.002 | 2.837 | 6.818 |
| Kremsmünster | <0.001 | <0.001 | 0.001 | 2.493 | 5.632 |
| Porto | <0.001 | <0.001 | <0.001 | 1.290 | 3.242 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.307 | 1.602 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.310 | 3.631 |
| Onion (late),  BBCH 49, 2×240 g a.s./ha  (5-d intervals), every 2nd year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.896 | 5.041 |
| Hamburg | <0.001 | <0.001 | 0.013 | 4.307 | 6.971 |
| Jokioinen | <0.001 | <0.001 | 0.005 | 2.627 | 5.669 |
| Kremsmünster | <0.001 | <0.001 | 0.003 | 2.524 | 5.008 |
| Porto | <0.001 | <0.001 | <0.001 | 0.616 | 2.303 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.355 | 1.853 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.581 | 4.673 |
| Hamburg | <0.001 | <0.001 | 0.011 | 4.303 | 7.307 |
| Jokioinen | <0.001 | <0.001 | 0.007 | 2.657 | 5.610 |
| Kremsmünster | <0.001 | <0.001 | 0.005 | 2.641 | 5.192 |
| Porto | <0.001 | <0.001 | <0.001 | 1.283 | 3.295 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.282 | 1.515 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | 0.007 | 1.610 | 4.141 |

**Application to tomato and aubergine**

**Table 8.8‑15: PECGW for ametoctradin and its metabolites following twofold application to tomato and aubergine (FOCUS crop: tomatoes), BBCH 21-89 at 240 g a.s./ha (7-d intervals), every year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH<7 (acid)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Tomato and aubergine (early),  BBCH 21 2 × 240 g a.s./ha  (7-d interval),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | 0.002 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 | 0.003 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Tomato and aubergine (late),  BBCH 89, 2 × 240 g a.s./ha  (7-d intervals),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | 0.005 | <0.001 | 0.003 |
| Porto | <0.001 | <0.001 | 0.008 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | 0.006 | <0.001 | 0.003 |
| Porto | <0.001 | <0.001 | 0.006 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | 0.001 | <0.001 | <0.001 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |

**Table 8.8‑16: PECGW for ametoctradin and its metabolites following twofold application to tomato and aubergine (FOCUS crop: tomatoes), BBCH 21-89 at 240 g a.s./ha (7-d intervals), every year – simulated with pH independent option using Kf,oc of M650F01, M650F03 and M650F04 under pH>7 (alkaline)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | | | | |
| **Ametoctradin** | **M650F01** | **M650F02** | **M650F03** | **M650F04** |
| Tomato and aubergine (early),  BBCH 21, 2 × 240 g a.s./ha  (7-d interval),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.786 | 4.486 |
| Piacenza | <0.001 | <0.001 | <0.001 | 1.111 | 3.278 |
| Porto | <0.001 | <0.001 | <0.001 | 0.487 | 1.460 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.260 | 1.269 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.543 | 2.002 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.255 | 3.558 |
| Piacenza | <0.001 | <0.001 | <0.001 | 1.317 | 3.151 |
| Porto | <0.001 | <0.001 | <0.001 | 0.432 | 1.211 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.259 | 1.221 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.308 | 1.228 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.897 | 2.404 |
| Tomato and aubergine (late),  BBCH 89, 2 × 240 g a.s./ha  (7-d intervals),  every year | **PEARL 5.5.5** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 1.120 | 2.840 |
| Piacenza | <0.001 | <0.001 | 0.005 | 1.861 | 3.159 |
| Porto | <0.001 | <0.001 | 0.008 | 1.777 | 2.625 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.304 | 1.324 |
| Thiva | <0.001 | <0.001 | <0.001 | 0.742 | 2.186 |
| **PELMO 6.6.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.976 | 2.742 |
| Piacenza | <0.001 | <0.001 | 0.006 | 2.050 | 3.039 |
| Porto | <0.001 | <0.001 | 0.006 | 1.879 | 2.620 |
| Sevilla | <0.001 | <0.001 | <0.001 | 0.230 | 1.087 |
| Thiva | <0.001 | <0.001 | 0.001 | 0.754 | 2.214 |
| **MACRO 5.5.4** | | | | | |
| Châteaudun | <0.001 | <0.001 | <0.001 | 0.973 | 2.343 |

*Conclusion*

The PECGW for ametoctradin was < 0.001 µg/L in all application uses and all simulated models.

The PECGW values of metabolites M650F01 and M650F02 were below 0.1 µg/L for all application uses and all simulation models. The PECGW values for M650F03 and M650F04 were below 0.1 µg/L for all application uses under acidic soil condition. Under alkaline soil condition, the PECGW values of metabolites M650F03 and M650F04 may exceed 0.1 µg/L, but below 10 µg/L for all application uses and all simulated models.

The metabolites M650F03 and M650F04 can be regarded as toxicologically non-relevant metabolites based on the testing principles laid down in the EC guidance document on testing the relevance of groundwater metabolites SANCO/221/2000 –rev.11 (EC, 2021)[[10]](#footnote-10).

#### Propamocarb HCl

Additional PECGW calculations for propamocarb HCl using PUF = 0 (national requirements and FOCUS groundwater guidance (2021)) have been provided following to zRMS PL request. The calculations are demonstrated for the worst-case application use on onion, BBCH 14, 2 × 902 g/ha, every 2nd year.

**Table 8.8‑17: Input parameters related to active substance propamocarb HCl for PECGW calculations**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Propamocarb HCl** | **Value in accordance with EU endpoint** |
| Molecular weight [g/mol] | 224.7 | Y EFSA (2006) |
| Water solubility [mg/L], at 20°C | 1005000a 2010000 (30oC) | Y EFSA (2006) |
| Vapor pressure [Pa], at 25°C | 8.10×10-5 Pa  (4.21×10-5 Pa at 20°C and 1.68×10-4 Pa at 30°C, PELMO) | Y EFSA (2006) |
| DT50 (soil) [d] | 13.9  (geometric mean, n = 16, normalisation to pF2, 20oC)b | Y EFSA (2006) |
| Transformation rate [1/d] | 0.04987 (to sink) | Calculated |
| Kf,oc [mL/g] | 263.6c (geometric mean, n=12) | N calculated from EFSA (2006) |
| Kf,om [mL/g] | 152.9 | Calculated |
| 1/n [-] | 0.867 (arithmetic mean, n=12) | Y EFSA (2006) |
| Plant uptake factor (PUF/TSCF) [-] | ~~0.5~~ | ~~Y EFSA (2006)~~ |
| 0d | FOCUS (2021) |

a Water solubility at 20oC of the active substance is higher than the maximum value in PEARL, therefore, the maximum default value 1000000 mg/L was used in PEARL calculation.

b Q10 value 2.58 has been used for PELMO calculations.

c As conservative worst-case PECGW calculations, geometric mean Kf,oc values for propamocarb HCl was selected instead of arithmetic mean (LOEP-EFSA, 2006).

s PUF = 0 (national requirements and FOCUS groundwater guidance (2021)) have been provided following to zRMS PL request.

**PECGW for propamocarb HCl**

**Application to potato**

**Table 8.8‑18: PECGW for propamocarb HCl following twofold application to potato (FOCUS crop: potatoes), BBCH 21-89 at 902 g a.s./ha (5-d intervals), every year**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | |
| **PEARL 5.5.5** | **PELMO 6.6.4** |
| Potato (early), BBCH 21,  2×902 g a.s./ha  (5-d intervals), every year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |
| Potato (late), BBCH 89, 2×902 g a.s./ha  (5-d intervals), every year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |

**Table 8.8‑19: PECGW for propamocarb HCl following threefold application to potato (FOCUS crop: potatoes), BBCH 21-89 at 902 g a.s./ha (5-d intervals), every 2nd year**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | |
| **PEARL 5.5.5** | **PELMO 6.6.4** |
| Potato (early), BBCH 21,  3×902 g a.s./ha  (5-d intervals), every 2nd year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |
| Potato (late) BBCH 89, 3×902 g a.s./ha  (5-d intervals), every 2nd year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |

**Application to onion**

**Table 8.8‑20: PECGW for propamocarb HCl following single application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha, every year**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | |
| **PEARL 5.5.5** | **PELMO 6.6.4** |
| Onion (early), BBCH 14,  1×902 g a.s./ha  every year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |
| Onion (late), BBCH 49,  1×902 g a.s./ha,  every year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |

**Table 8.8‑21: PECGW for propamocarb HCl following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha (5-d intervals), every 2nd year (PUF = 0.5)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | |
| **PEARL 5.5.5** | **PELMO 6.6.4** |
| Onion (early),  BBCH 14,  2×902 g a.s./ha  (5-d intervals), every 2nd year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |
| Onion (late),  BBCH 49,  2×902 g a.s./ha  (5-d intervals),  every 2nd year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |

**Table 8.8‑22: PECGW for propamocarb HCl following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha (5-d intervals), every 2nd year (PUF = 0)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | |
| **PEARL 5.5.5** | **PELMO 6.6.4** |
| Onion (early),  BBCH 14,  2×902 g a.s./ha  (5-d intervals), every 2nd year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |
| Onion (late),  BBCH 49,  2×902 g a.s./ha  (5-d intervals),  every 2nd year | Châteaudun | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |

**Application to tomato and aubergine**

**Table 8.8‑23: PECGW for propamocarb HCl following twofold application to tomato and aubergine (FOCUS crop: tomatoes), BBCH 21-89 at 902 g a.s./ha (7-d intervals), every year**

|  |  |  |  |
| --- | --- | --- | --- |
| **Crop** | **Scenario** | **80th Percentile PECGW at 1 m Soil Depth [µg/L]** | |
| **PEARL 5.5.5** | **PELMO 6.6.4** |
| Tomato and aubergine (early),  BBCH 21,  2 × 902 g a.s./ha  (7-d interval),  every year | Châteaudun | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |
| Tomato and aubergine (late),  BBCH 89, 2 × 902 g a.s./ha  (7-d intervals),  every year | Châteaudun | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 |

*Conclusion*

PECGW of active substance propamocarb HCl was calculated using simulation models PEARL 5.5.5 and PELMO 6.6.4. The PECGW for propamocarb HCl was < 0.001 µg/L in all application uses and all simulated models.

## Predicted Environmental Concentrations in surface water (PECsw) (KCP 9.2.5)

|  |
| --- |
| **Review Comments:**  The PECSSW/SED calculations for ametoctradin, its metabolites and for propamocarb HCl were provided by the Applicant and are considered acceptable.  For propamocarb HCl, ametoctradin and its relevant metabolites PECSW calculations were performed with FOCUS STEPS 1-2 (active substances and relevant metabolites) and FOCUS STEP 3 (ametoctradin).  The EU agreed endpoints were used. Geometric mean Kfoc and Kfom (instead of an arithmetic mean Kfoc and Kfom) for all compounds were derived from the datasets presented in the EFSA Journal 2012;10(11):2921 and EFSA Scientific Report (2006) 78, 1-80 for consistency with current FOCUS groundwater recommendation.  The formulation PECsw calculations were accepted.  The PECsw reported below can be used for the risk assessment for aquatic organisms. Please refer to section 9. |

### Justification for new endpoints

No deviation from formerly established endpoints.

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

Predicted environmental concentrations in surface water and sediment (PECSW/SED) were conducted for application uses of ametoctradin and its metabolites and propamocarb HCl in BAS 743 03 F on various crops in CEU.

The intended GAPs in CEU countries ~~except the Netherlands~~ have been calculated for PECSW/SED following to recommendations in FOCUS (2015)[[11]](#footnote-11). ~~For application uses in the Netherlands, PEC~~~~SW/SED~~ ~~are determined with specific national requirements following the NL framework (Ctgb, 2021)~~~~[[12]](#footnote-12)~~~~. The calculations are presented in the national addendum for the Netherlands.~~

PECSW/SED calculations were determined at Step 1-3 for the active substance ametoctradin and Step 1-2 for metabolites of ametoctradin (M650F01, M650F02, M650F03 and M650F04). For the active substance propamocarb HCl, PECSW/SED calculations at Step 1-2 are provided.

PECSW/SED calculations for ametoctradin and its metabolites and propamocarb HCl are summarised in reports by Halle and Jarvis, (2023c and 2023d).

The GAPs with relevant application parameters for which PECSW and PECSED modelling were performed are presented in Table 8.9‑1.

Application dates used for the surface water risk assessment at Step 3 for ametoctradin are presented in Table 8.9‑2 to Table 8.9‑4.

Input parameters for ametoctradin and its metabolites and propamocarb HCl for PECSW/SED calculations are summarized in Table 8.9‑5 and Table 8.9‑32, respectively.

**Table 8.9‑1: Input parameters related to application for PECSW/SED calculations**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Use No. | 2 | 1 | ~~6~~ 4 | ~~5~~ 3 | | ~~7~~ 5 |
| Crop | Potato | Potato | Onion | Onion | | Tomato, aubergine |
| FOCUS crops | Potatoes | Potatoes | Vegetable, bulb | Vegetable, bulb | | Vegetable, fruiting |
| Application rate (g a.s./ha) | Ametoctradin: 240  Propamocarb HCl: 902 | | | | | |
| Number of applications/interval | 2 / 5 | 3 / 5 | 1 | 2/ 5 | | 2 / 7 |
| BBCH growth stagea | 21-89 | 21-89 | 14-49 | 14-49 | | 21-89 |
| Interceptionb  (Step 2) | Early: average crop cover, Late: full canopy | | Early: minimal crop~~c~~, Late: full canopy | | Early: average crop cover, Late: full canopy | |
| Application window | Step 1-2: Mar-May /  Jun-Sep / Oct-Feb Step 3: see Table 8.9‑2 | | Step 1-2: Mar-May / Jun-Sep Step 3: see Table 8.9‑3 to Table 8.9‑4 | | | |
| Application method | Foliar spray | | | | | |
| CAM (Chemical application method) | CAM 2, DEPI 4 cm | | | | | |
| Method used for calculation | Ametoctradin: Step 1-2, v3.2 and Step 3: FOCUS SWASH v5.3, FOCUS PRZM v4.3.1,  FOCUS MACRO v5.5.4 and TOXSWA v5.5.3 Propamocarb HCl: Step 1-2, v3.2 | | | | | |
| Reference report no. | Ametoctradin: 2023/2017536 Propamocarb HCl: 2023/2017538 | | | | | |

a Due to wide range of BBCH growth stage, simulations were conducted for early and late applications.

b Interception according to FOCUS (2015).

**Table 8.9‑2:** **FOCUS Step 3 Scenario related application dates used in the PECSW/SED simulations for potato (FOCUS crop: potatoes)**

| **Crop** | **Scenario** | **Application windowa** | | **Application date found by PAT** | |
| --- | --- | --- | --- | --- | --- |
| **Single application** | **Multiple application** | **Single application** | **Multiple application** |
| Potato (early),  BBCH 21,  twofold application,  (5 d-intervals) | D3 | 30-May (150) - 29-Jun (180) | 30-May (150) - 4-Jul (185) | 14-Jun | 14-Jun / 26-Jun |
| D4 | 17-Jun (168) -17-Jul (198) | 17-Jun (168) - 22-Jul (203) | 21-Jun | 21-Jun / 28-Jun |
| D6 1st | 24-Apr (114) - 24-May (144) | 24-Apr (114) - 29-May (149) | 24-Apr | 24-Apr / 3-May |
| D6 2nd | 21-Aug (233) - 20-Sep (263) | 21-Aug (233) - 25-Sep (268) | 23-Aug | 23-Aug / 29-Aug |
| R1 | 20-May (140) - 19-Jun (170) | 20-May (140) -24-Jun (175) | 13-Jun | 31-May / 12-Jun |
| R2 | 6-Apr (96) - 6-May (126) | 6-Apr (96) - 11-May (131) | 22-Apr | 22-Apr / 27-Apr |
| R3 | 24-Apr (114) - 24-May (144) | 24-Apr (114) -29-May (149) | 24-Apr | 24-Apr / 18-May |
| Potato (late),  BBCH 89,  twofold application,  (5 d-intervals, PHI 7) | D3 | 9-Aug (221) - 8-Sep (251) | 4-Aug (216) - 8-Sep (251) | 18-Aug | 3-Aug / 18-Aug |
| D4 | 17-Aug (229) - 16-Sep (259) | 12-Aug (224) - 16-Sep (259) | 27-Aug | 27-Aug / 10- Sep |
| D6 1st | 8-Jun (159) – 8-Jul (189) | 3-Jun (154) - 8-Jul (189) | 23-Jun | 4-Jun / 23-Jun |
| D6 2nd | 19-Oct (292) - 18-Nov (322) | 14-Oct (287) - 18-Nov (322) | 22-Oct | 14-Oct / 22-Oct |
| R1 | 2-Aug (214) - 1-Sep (244) | 28-Jul (209) - 1-Sep (244) | 20-Aug | 28-Jul / 20-Aug |
| R2 | 9-May (129) - 8-Jun (159) | 4-May (124) - 8-Jun (159) | 9-May | 7-May / 20-May |
| R3 | 26-Jul (207) - 25-Aug (237) | 21-Jul (202) - 25-Aug (237) | 27-Jul | 21-Jul / 27-Jul |

a Length of application windows 30 and 35 days were used for single and multiple applications, respectively. For early application, the first day of the application window was selected based on earliest BBCH growth stage using AppDate tool version 3.06. For late application, the last day of the application window was set at harvest date minus PHI.

**Table 8.9‑2: FOCUS Step 3 Scenario related application dates used in the PECSW/SED simulations for potato (FOCUS crop: potatoes) (continued)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **Application windowa** | | **Application date found by PAT** | |
| **Single application** | **Multiple application** | **Single application** | **Multiple application** |
| Potato (early),  BBCH 21,  threefold application,  (5 d-intervals) | D3 | 30-May (150) - 29-Jun (180) | 30-May (150) - 9-Jul (190) | 14-Jun | 14-Jun / 26-Jun / 8-Jul |
| D4 | 17-Jun (168) -17-Jul (198) | 17-Jun (168) - 27-Jul (208) | 21-Jun | 21-Jun / 28-Jun /4-Jul |
| D6 1st | 24-Apr (114) - 24-May (144) | 24-Apr (114) - 3-Jun (154) | 24-Apr | 24-Apr / 3-May / 17-May |
| D6 2nd | 21-Aug (233) - 20-Sep (263) | 21-Aug (233) - 30-Sep (273) | 23-Aug | 23-Aug / 29-Aug / 4-Sep |
| R1 | 20-May (140) - 19-Jun (170) | 20-May (140) -29-Jun (180) | 13-Jun | 31-May / 12 Jun / 17-Jun |
| R2 | 6-Apr (96) - 6-May (126) | 6-Apr (96) - 16-May (136) | 22-Apr | 22-Apr / 27-Apr / 7-May |
| R3 | 24-Apr (114) - 24-May (144) | 24-Apr (114) – 3-Jun (154) | 24-Apr | 24-Apr / 18 May /1-Jun |
| Potato (late),  BBCH 89,  threefold application,  (5 d-intervals, PHI 7) | D3 | 9-Aug (221) - 8-Sep (251) | 30-Jul (211) - 8-Sep (251) | 18-Aug | 3-Aug / 18 Aug / 23-Aug |
| D4 | 17-Aug (229) - 16-Sep (259) | 7-Aug (219) - 16-Sep (259) | 27-Aug | 27-Aug / 10-Sep / 15-Sep |
| D6 1st | 8-Jun (159) – 8-Jul (189) | 29-May (149) - 8-Jul (189) | 23-Jun | 4-Jun / 23-Jun / 29-Jun |
| D6 2nd | 19-Oct (292) - 18-Nov (322) | 9-Oct (282) - 18-Nov (322) | 22-Oct | 9-Oct / 14-Oct / 22-Oct |
| R1 | 2-Aug (214) - 1-Sep (244) | 23-Jul (204) - 1-Sep (244) | 20-Aug | 28-Jul / 20-Aug / 25-Aug |
| R2 | 9-May (129) - 8-Jun (159) | 29-Apr (119) - 8-Jun (159) | 9-May | 29-Apr / 7-May / 20-May |
| R3 | 26-Jul (207) - 25-Aug (237) | 16-Jul (197) - 25-Aug (237) | 27-Jul | 20-Jul / 27-Jul /  4-Aug |

a Length of application windows 30 and 40 days were used for single and multiple applications, respectively. For early application, the first day of the application window was selected based on earliest BBCH growth stage using AppDate tool version 3.06. For late application, the last day of the application window was set at harvest date minus PHI.

**Table 8.9‑3: FOCUS Step 3 Scenario related application dates used in the PECSW/SED simulations onion (FOCUS crop: vegetable, bulb)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **Application windowa** | | **Application date found by PAT** | |
| **Single application** | **Multiple application** | **Single  application** | **Multiple application** |
| Onion (early),  BBCH 14,  single and twofold application,  (5 d-intervals) | D3 | 22-May (142) – 21-Jun (172) | 22-May (142) - 26-Jun (177) | 24-May | 24-May / 14-Jun |
| D4 | 25-May (145) - 24-Jun (175) | 25-May (145) - 29-Jun (180) | 25-May | 25-May / 1-Jun |
| D6 1st | 31-May (151 - 30-Jun (181) | 31-May (151) - 5-Jul (186) | 31-May | 31-May / 5-Jun |
| D6 2nd | 16-Dec (350) – 15-Jan (15) | 16-Dec (350) - 20-Jan (20) | 30-Dec | 30-Dec / 14-Jan |
| R1 | 17-May (137) – 16-Jun (167) | 17-May (137) - 21-Jun (172) | 13-Jun | 31-May / 12-Jun |
| R2 | 31-Mar (90) – 30-Apr (120) | 31-Mar (137) - 5-May (125) | 22-Apr | 22-Apr / 27-Apr |
| R3 | 1-Apr (91) – 1-May (121) | 1-Apr (91) - 6-May (126) | 4-Apr | 4-Apr / 11-Apr |
| R4 | 1-Apr (91) – 1-May (121) | 1-Apr (91) - 6-May (126) | 3-Apr | 3-Apr / 13-Apr |
| Onion (late),  BBCH 49,  single and twofold application,  (5 d-intervals, PHI 7) | D3 | 26-Jul (207) – 25-Aug (237) | 21-Jul (202) – 25-Aug (237) | 25-Jul | 24-Jul / 29-Jul |
| D4 | 7-Aug (219) – 6-Sep (249) | 2-Aug (214) – 6-Sep (249) | 27-Aug | 27-Aug / 2-Sep |
| D6 1st | 24-Jun (175) – 24-Jul (205) | 19-Jun (170) – 24-Jul (205) | 24-Jun | 19-Jun / 24-Jun |
| D6 2nd | 4-Mar (63) – 3-Apr (93) | 27-Feb (58) – 3-Apr (93) | 5-Mar | 27-Feb / 5-Mar |
| R1 | 19-Jul (200) – 18-Aug (230) | 14-Jul (195) – 18-Aug (230) | 28-Jul | 14-Jul / 22-Jul |
| R2 | 24-Apr (114) – 24-May (144) | 19-Apr (109) – 24-May (144) | 24-Apr | 22-Apr / 27-Apr |
| R3 | 24-Apr (114) – 24-May (144) | 19-Apr (109) – 24-May (144) | 24-Apr | 22-Apr / 18-May |
| R4 | 24-Apr (114) – 24-May (144) | 19-Apr (109) – 24-May (144) | 27-Apr | 20-Apr / 27-Apr |

a Length of application windows 30 and 35 days were used for single and multiple applications, respectively. For early application, the first day of the application window was selected based on earliest BBCH growth stage using AppDate tool version 3.06. For late application, the last day of the application window was set at harvest date minus PHI.

**Table 8.9‑4: FOCUS Step 3 Scenario related application dates used in the PECSW/SED simulations tomato and aubergine (FOCUS crop: vegetable, fruiting)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Crop** | **Scenario** | **Application windowa** | | **Application date found by PAT** | |
| **Single application** | **Multiple application** | **Single  application** | **Multiple application** |
| Tomato and aubergine (early),  BBCH 21,  twofold application, (7 d-intervals) | D6 | 29-Apr (119) -29-May (149) | 29-Apr (119) -5-Jun (156) | 7-May | 7-May / 19-May |
| R2 | 18-Apr (108) – 18-May (138) | 18-Apr (108) – 25-May (145) | 22-Apr | 22-Apr / 29-Apr |
| R3 | 29-May (149) – 28-Jun (179) | 29-May (149) – 5-Jul (186) | 1-Jun | 1-Jun / 11-Jun |
| R4 | 9-May (129) – 8-Jun (159) | 9-May (129) – 15-Jun (166) | 11-May | 11-May / 27-May |
| Tomato and aubergine (late),  BBCH 89,  twofold application, (7 d-intervals, PHI 1) | D6 | 10-Jul (191) - 9-Aug (221) | 3-Jul (184) - 9-Aug (221) | 17-Jul | 6-Jul / 17-Jul |
| R2 | 31-Jul (212) - 30-Aug (242) | 24-Jul (205)-30-Aug (242) | 5-Aug | 5-Aug / 12-Aug |
| R3 | 25-Jul (206) - 24-Aug (236) | 18-Jul (199) - 24-Aug (236) | 30-Jul | 18-Jul / 30-Jul |
| R4 | 14-Jun (165) - 14-Jul (195) | 7-Jun (158) - 14-Jul (195) | 23-Jun | 12-Jun / 23-Jun |

a Length of application windows 30 and 37 days were used for single and multiple applications, respectively. For early application, the first day of the application window was selected based on earliest BBCH growth stage using AppDate tool version 3.06. For late application, the last day of the application window was set at harvest date minus PHI.

#### Ametoctradin and its metabolites

**Table 8.9‑5: Input parameters related to active substance ametoctradin and its metabolites for PECSW/SED calculations STEP 1-2 and 3**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Ametoctradina** | **M650F01a** | **M650F02a** | **M650F03a** | **M650F04a** | **Value in accordance to EU endpoint** |
| Molecular weight [g/mol] | 275.4 | 249.3 | 235.3 | 221.2 | 207.2 | Y (EFSA, 2012) |
| Water solubility [mg/L], at 20°C | 0.14 | 3800 | 79000 | 2900 | 350 | Y (EFSA, 2012) |
| Vapor pressure [Pa], at 20°C | 2.1×10-10 | n.r. | n.r. | n.r. | n.r. | Y (EFSA, 2012) |
| DT50 (soil) [d] (Lab, 20oC, pF2) | 1.79 (geometric mean, n=4) | 2.4 (geometric mean, n=4) | 7.5 (geometric mean, n=4) | 43.8 (geometric mean, n=8) | 99.8 (geometric mean, n=5) | Y (EFSA, 2012) |
| DT50 water [d] | Step 1-3  1.5 (geometric mean, n=2, total system) | Step 1-2:  3.9 (geometric mean, n=2, total system) | Step 1-2:  19.4 (geometric mean, n=2, total system) | Step 1-2:  409 (geometric mean, n=2, total system) | Step 1-2:  1000 (worst-case default) | Y (EFSA, 2012) |
| DT50 sediment [d] | Step 1-2: 1.5 (geometric mean, n=2, total system)  Step 3: 1000 (default) | Step 1-2:  3.9 (geometric mean, n=2, total system) | Step 1-2:  19.4 (geometric mean, n=2, total system) | Step 1-2:  409 (geometric mean, n=2, total system) | Step 1-2:  1000 (worst-case default) | Y (EFSA, 2012) |
| Kf,oc [mL/g] | 3462 (geometric mean, n=7) | 58.2  (geometric mean, n=6) | 30.6  (geometric mean, n=7) | 28.3  (geometric mean, n=12) | 18.9  (geometric mean, n=12) | N  (calculated from LoEP EFSA, 2012) |
| 1/n [-] | 0.767 (arithmetic mean, n=7) | n.r. | n.r. | n.r. | n.r. | Y (EFSA, 2012) |
| Plant uptake factor (PUF/TSCF) [-] | 0 | n.r. | n.r. | n.r. | n.r. | Y (EFSA, 2012) |
| Maximum occurrence in  Soil [%]  Water/sediment [%] | n.r. | 92.8b 22.9 | 6.4b 11.3 | 57 67.7 | 55.7 18.6 | Y (EFSA, 2012), except M650F01 and M650F02 (DAR, 2011) |

n.r. = not relevant

a EFSA (2012): Conclusion on the peer review of the pesticide risk assessment of the active substance Ametoctradin (BAS 650 F). EFSA Journal 2012;10(11):2921.

b For PECSW/SED calculation of metabolites M650F01 and M650F02, formation fraction in soil of 92.8% and 6.4%, respectively, were taken from the worst-case DT50 in soil performed with DFOP-SFO approach of laboratory studies with the parent (DAR, 2011).

**PECSW/SED for ametoctradin**

**Potato**

**Table 8.9‑6: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following twofold application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 21 (5-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Potato (early), BBCH 21 2×240 g a.s./ha (5-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.998 | - | 31.877 |
| Mar-May | 1.998 | - | 13.892 |
| Jun-Sep | 1.998 | - | 13.892 |
| Southern Europe | Oct-Feb | 1.998 | - | 25.882 |
| Mar-May | 1.998 | - | 25.882 |
| Jun-Sep | 1.998 | - | 19.887 |
| Step 3 | | | | |
| D3 | Ditch | 1.077 | Drift | 0.467 |
| D4 | Pond | 0.045 | Drift | 0.055 |
| D4 | Stream | 0.863 | Drift | 0.035 |
| D6 1st | Ditch | 1.065 | Drift | 0.286 |
| D6 2nd | Ditch | 1.060 | Drift | 0.180 |
| R1 | Pond | 0.041 | Drift | 0.040 |
| R1 | Stream | 0.740 | Drift | 0.743 |
| R2 | Stream | 0.979 | Drift | 0.135 |
| R3 | Stream | 1.044 | Drift | 0.241 |
| Potato (early), BBCH 21 repspective 1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Oct-Feb | 2.207 | - | 28.153 |
| Mar-May | 2.207 | - | 12.435 |
| Jun-Sep | 2.207 | - | 12.435 |
| Southern Europe | Oct-Feb | 2.207 | - | 22.914 |
| Mar-May | 2.207 | - | 22.914 |
| Jun-Sep | 2.207 | - | 17.674 |
| Step 3 | | | | |
| D3 | Ditch | 1.242 | Drift | 0.529 |
| D4 | Pond | 0.049 | Drift | 0.047 |
| D4 | Stream | 0.970 | Drift | 0.029 |
| D6 1st | Ditch | 1.228 | Drift | 0.329 |
| D6 2nd | Ditch | 1.219 | Drift | 0.191 |
| R1 | Pond | 0.049 | Drift | 0.047 |
| R1 | Stream | 0.860 | Drift | 0.756 |
| R2 | Stream | 1.137 | Drift | 0.071 |
| R3 | Stream | 1.213 | Drift | 0.280 |

**Table 8.9‑7: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following twofold application to potato (late) at 240 g a.s./ha, BBCH 89 (5-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Potato (late), BBCH 89,  2×240 g a.s./ha  (5-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.998 | - | 19.887 |
| Mar-May | 1.998 | - | 9.096 |
| Jun-Sep | 1.998 | - | 9.096 |
| Southern Europe | Oct-Feb | 1.998 | - | 16.290 |
| Mar-May | 1.998 | - | 16.290 |
| Jun-Sep | 1.998 | - | 12.693 |
| Step 3 | | | | |
| D3 | Ditch | 1.079 | Drift | 0.475 |
| D4 | Pond | 0.041 | Drift | 0.049 |
| D4 | Stream | 0.888 | Drift | 0.042 |
| D6 1st | Ditch | 1.071 | Drift | 0.280 |
| D6 2nd | Ditch | 1.082 | Drift | 0.587 |
| R1 | Pond | 0.040 | Drift | 0.032 |
| R1 | Stream | 0.741 | Drift | 0.106 |
| R2 | Stream | 0.994 | Drift | 0.383 |
| R3 | Stream | 1.046 | Drift | 0.731 |
| Potato (late), BBCH 89, respective  1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Oct-Feb | 2.207 | - | 17.674 |
| Mar-May | 2.207 | - | 8.244 |
| Jun-Sep | 2.207 | - | 8.244 |
| Southern Europe | Oct-Feb | 2.207 | - | 14.531 |
| Mar-May | 2.207 | - | 14.531 |
| Jun-Sep | 2.207 | - | 11.387 |
| Step 3 | | | | |
| D3 | Ditch | 1.245 | Drift | 0.547 |
| D4 | Pond | 0.049 | Drift | 0.040 |
| D4 | Stream | 0.933 | Drift | 0.023 |
| D6 1st | Ditch | 1.235 | Drift | 0.322 |
| D6 2nd | Ditch | 1.237 | Drift | 0.421 |
| R1 | Pond | 0.049 | Drift | 0.039 |
| R1 | Stream | 0.861 | Drift | 0.123 |
| R2 | Stream | 1.155 | Drift | 0.181 |
| R3 | Stream | 1.215 | Drift | 0.444 |

**Table 8.9‑8: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following threefold application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 21 (5-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Potato (early),  BBCH 21, 3×240 g a.s./ha  (5-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.663 | - | 32.113 |
| Mar-May | 1.663 | - | 13.801 |
| Jun-Sep | 1.663 | - | 13.801 |
| Southern Europe | Oct-Feb | 1.663 | - | 26.009 |
| Mar-May | 1.663 | - | 26.009 |
| Jun-Sep | 1.663 | - | 19.905 |
| Step 3 | | | | |
| D3 | Ditch | 0.902 | Drift | 0.391 |
| D4 | Pond | 0.040 | Drift | 0.048 |
| D4 | Stream | 0.724 | Drift | 0.030 |
| D6 1st | Ditch | 0.899 | Drift | 0.298 |
| D6 2nd | Ditch | 0.887 | Drift | 0.164 |
| R1 | Pond | 0.041 | Drift | 0.106 |
| R1 | Stream | 0.622 | Drift | 1.874 |
| R2 | Stream | 0.835 | Drift | 0.180 |
| R3 | Stream | 0.878 | Drift | 0.238 |
| Potato (early),  BBCH 21, respective  1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Oct-Feb | 2.207 | - | 28.153 |
| Mar-May | 2.207 | - | 12.435 |
| Jun-Sep | 2.207 | - | 12.435 |
| Southern Europe | Oct-Feb | 2.207 | - | 22.914 |
| Mar-May | 2.207 | - | 22.914 |
| Jun-Sep | 2.207 | - | 17.674 |
| Step 3 | | | | |
| D3 | Ditch | 1.242 | Drift | 0.529 |
| D4 | Pond | 0.049 | Drift | 0.047 |
| D4 | Stream | 0.970 | Drift | 0.029 |
| D6 1st | Ditch | 1.228 | Drift | 0.329 |
| D6 2nd | Ditch | 1.219 | Drift | 0.191 |
| R1 | Pond | 0.049 | Drift | 0.047 |
| R1 | Stream | 0.860 | Drift | 0.756 |
| R2 | Stream | 1.137 | Drift | 0.071 |
| R3 | Stream | 1.213 | Drift | 0.280 |

**Table 8.9‑9: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following threefold application to potatoes (late) at 240 g a.s./ha, BBCH 89 (5-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Potato (late),  BBCH 89, 3×240 g a.s./ha  (5-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.663 | - | 19.905 |
| Mar-May | 1.663 | - | 8.918 |
| Jun-Sep | 1.663 | - | 8.918 |
| Southern Europe | Oct-Feb | 1.663 | - | 16.243 |
| Mar-May | 1.663 | - | 16.243 |
| Jun-Sep | 1.663 | - | 12.580 |
| Step 3 | | | | |
| D3 | Ditch | 0.903 | Drift | 0.454 |
| D4 | Pond | 0.044 | Drift | 0.067 |
| D4 | Stream | 0.758 | Drift | 0.053 |
| D6 1st | Ditch | 0.897 | Drift | 0.253 |
| D6 2nd | Ditch | 0.906 | Drift | 0.555 |
| R1 | Pond | 0.040 | Drift | 0.042 |
| R1 | Stream | 0.622 | Drift | 0.105 |
| R2 | Stream | 0.835 | Drift | 0.384 |
| R3 | Stream | 0.878 | Drift | 0.823 |
| Potato (late),  BBCH 89, respective  1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Oct-Feb | 2.207 | - | 17.674 |
| Mar-May | 2.207 | - | 8.244 |
| Jun-Sep | 2.207 | - | 8.244 |
| Southern Europe | Oct-Feb | 2.207 | - | 14.531 |
| Mar-May | 2.207 | - | 14.531 |
| Jun-Sep | 2.207 | - | 11.387 |
| Step 3 | | | | |
| D3 | Ditch | 1.245 | Drift | 0.547 |
| D4 | Pond | 0.049 | Drift | 0.040 |
| D4 | Stream | 0.933 | Drift | 0.023 |
| D6 1st | Ditch | 1.235 | Drift | 0.322 |
| D6 2nd | Ditch | 1.237 | Drift | 0.421 |
| R1 | Pond | 0.049 | Drift | 0.039 |
| R1 | Stream | 0.861 | Drift | 0.123 |
| R2 | Stream | 1.155 | Drift | 0.181 |
| R3 | Stream | 1.215 | Drift | 0.444 |

**Onion**

**Table 8.9‑10: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following single application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 14-49**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Onion (early),  BBCH 14, 1×240 g a.s./ha | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.207 | - | 20.818 |
| Jun-Sep | 2.207 | - | 20.818 |
| Southern Europe | Mar-May | 2.207 | - | 39.679 |
| Jun-Sep | 2.207 | - | 30.248 |
| Step 3 | | | | |
| D3 | Ditch | 1.504 | Drift | 0.732 |
| D4 | Pond | 0.051 | Drift | 0.068 |
| D4 | Stream | 1.147 | Drift | 0.040 |
| D6 1st | Ditch | 1.514 | Drift | 0.720 |
| D6 2nd | Ditch | 1.476 | Drift | 0.320 |
| R1 | Pond | 0.051 | Drift | 0.045 |
| R1 | Stream | 0.992 | Drift | 0.583 |
| R2 | Stream | 1.311 | Drift | 0.082 |
| R3 | Stream | 1.399 | Drift | 0.325 |
| R4 | Stream | 0.984 | Drift | 0.557 |
| Onion (late),  BBCH 49, 1×240 g a.s./ha | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.207 | - | 14.531 |
| Jun-Sep | 2.207 | - | 14.531 |
| Southern Europe | Mar-May | 2.207 | - | 27.105 |
| Jun-Sep | 2.207 | - | 20.818 |
| Step 3 | | | | |
| D3 | Ditch | 1.503 | Drift | 0.610 |
| D4 | Pond | 0.051 | Drift | 0.041 |
| D4 | Stream | 1.063 | Drift | 0.024 |
| D6 1st | Ditch | 1.516 | Drift | 0.661 |
| D6 2nd | Ditch | 1.501 | Drift | 0.769 |
| R1 | Pond | 0.051 | Drift | 0.039 |
| R1 | Stream | 0.974 | Drift | 0.090 |
| R2 | Stream | 1.311 | Drift | 0.082 |
| R3 | Stream | 1.399 | Drift | 0.325 |
| R4 | Stream | 0.984 | Drift | 0.463 |

**Table 8.9‑11: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following twofold application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 14-49 (5-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Onion (early),  BBCH 14, 2×240 g a.s./ha  (5-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.998 | - | 23.484 |
| Jun-Sep | 1.998 | - | 23.484 |
| Southern Europe | Mar-May | 1.998 | - | 45.066 |
| Jun-Sep | 1.998 | - | 34.275 |
| Step 3 | | | | |
| D3 | Ditch | 1.314 | Drift | 0.640 |
| D4 | Pond | 0.050 | Drift | 0.071 |
| D4 | Stream | 0.992 | Drift | 0.037 |
| D6 1st | Ditch | 1.349 | Drift | 0.664 |
| D6 2nd | Ditch | 1.292 | Drift | 0.309 |
| R1 | Pond | 0.043 | Drift | 0.041 |
| R1 | Stream | 0.857 | Drift | 0.573 |
| R2 | Stream | 1.134 | Drift | 0.134 |
| R3 | Stream | 1.209 | Drift | 0.924 |
| R4 | Stream | 0.850 | Drift | 1.022 |
| Onion (early),  BBCH 14, respective 1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Mar-May | 2.207 | - | 20.818 |
| Jun-Sep | 2.207 | - | 20.818 |
| Southern Europe | Mar-May | 2.207 | - | 39.679 |
| Jun-Sep | 2.207 | - | 30.248 |
| Step 3 | | | | |
| D3 | Ditch | 1.504 | Drift | 0.732 |
| D4 | Pond | 0.051 | Drift | 0.068 |
| D4 | Stream | 1.147 | Drift | 0.040 |
| D6 1st | Ditch | 1.514 | Drift | 0.720 |
| D6 2nd | Ditch | 1.476 | Drift | 0.320 |
| R1 | Pond | 0.051 | Drift | 0.045 |
| R1 | Stream | 0.992 | Drift | 0.583 |
| R2 | Stream | 1.311 | Drift | 0.082 |
| R3 | Stream | 1.399 | Drift | 0.325 |
| R4 | Stream | 0.984 | Drift | 0.557 |

**Table 8.9‑11: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following twofold application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 14-49 (continued)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Onion (late),  BBCH 49, 2×240 g a.s./ha,   (5-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.998 | - | 16.290 |
| Jun-Sep | 1.998 | - | 16.290 |
| Southern Europe | Mar-May | 1.998 | - | 30.678 |
| Jun-Sep | 1.998 | - | 23.484 |
| Step 3 | | | | |
| D3 | Ditch | 1.313 | Drift | 0.612 |
| D4 | Pond | 0.047 | Drift | 0.064 |
| D4 | Stream | 0.985 | Drift | 0.036 |
| D6 1st | Ditch | 1.359 | Drift | 0.671 |
| D6 2nd | Ditch | 1.311 | Drift | 0.756 |
| R1 | Pond | 0.044 | Drift | 0.044 |
| R1 | Stream | 0.842 | Drift | 0.464 |
| R2 | Stream | 1.134 | Drift | 0.134 |
| R3 | Stream | 1.209 | Drift | 0.281 |
| R4 | Stream | 0.850 | Drift | 0.620 |
| Onion (late),  BBCH 49, respective  1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Mar-May | 2.207 | - | 14.531 |
| Jun-Sep | 2.207 | - | 14.531 |
| Southern Europe | Mar-May | 2.207 | - | 27.105 |
| Jun-Sep | 2.207 | - | 20.818 |
| Step 3 | | | | |
| D3 | Ditch | 1.503 | Drift | 0.610 |
| D4 | Pond | 0.051 | Drift | 0.041 |
| D4 | Stream | 1.063 | Drift | 0.024 |
| D6 1st | Ditch | 1.516 | Drift | 0.661 |
| D6 2nd | Ditch | 1.501 | Drift | 0.769 |
| R1 | Pond | 0.051 | Drift | 0.039 |
| R1 | Stream | 0.974 | Drift | 0.090 |
| R2 | Stream | 1.311 | Drift | 0.082 |
| R3 | Stream | 1.399 | Drift | 0.325 |
| R4 | Stream | 0.984 | Drift | 0.463 |

**Tomato and aubergine**

**Table 8.9‑12: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following twofold application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 240 g a.s./ha, BBCH 21 (7-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Tomato and aubergine (early),  BBCH 21, 2×240 g a.s./ha  (7-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.969 | - | 12.973 |
| Jun-Sep | 1.969 | - | 12.973 |
| Southern Europe | Mar-May | 1.969 | - | 24.148 |
| Jun-Sep | 1.969 | - | 18.560 |
| Step 3 | | | | |
| D6 | Ditch | 1.303 | Drift | 0.365 |
| R2 | Stream | 1.134 | Drift | 0.157 |
| R3 | Stream | 1.211 | Drift | 0.497 |
| R4 | Stream | 0.835 | Drift | 2.789 |
| Tomato and aubergine (early),  BBCH 21, respective  1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Mar-May | 2.207 | - | 12.435 |
| Jun-Sep | 2.207 | - | 12.435 |
| Southern Europe | Mar-May | 2.207 | - | 22.914 |
| Jun-Sep | 2.207 | - | 17.674 |
| Step 3 | | | | |
| D6 | Ditch | 1.484 | Drift | 0.337 |
| R2 | Stream | 1.312 | Drift | 0.082 |
| R3 | Stream | 1.401 | Drift | 0.306 |
| R4 | Stream | 0.966 | Drift | 2.790 |

**Table 8.9‑13: FOCUS Step 1-3 PECSW and PECSED for ametoctradin following twofold application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 240 g a.s./ha, BBCH 89 (7-d intervals)**

| **Crop** | **Scenario FOCUS** | **Waterbody** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- | --- |
| Tomato and aubergine (late),  BBCH 89, 2×240 g a.s./ha (7-d intervals) | Step 1 | - | 16.452 | - | 493.162 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.969 | - | 8.503 |
| Jun-Sep | 1.969 | - | 8.503 |
| Southern Europe | Mar-May | 1.969 | - | 15.208 |
| Jun-Sep | 1.969 | - | 11.855 |
| Step 3 | | | | |
| D6 | Ditch | 1.303 | Drift | 0.310 |
| R2 | Stream | 1.152 | Drift | 0.087 |
| R3 | Stream | 1.211 | Drift | 0.755 |
| R4 | Stream | 0.858 | Drift | 0.531 |
| Tomato and aubergine (late),  BBCH 89,  respective 1×240 g a.s./ha | Step 2 | | | | |
| Northern Europe | Mar-May | 2.207 | - | 8.244 |
| Jun-Sep | 2.207 | - | 8.244 |
| Southern Europe | Mar-May | 2.207 | - | 14.531 |
| Jun-Sep | 2.207 | - | 11.387 |
| Step 3 | | | | |
| D6 | Ditch | 1.486 | Drift | 0.309 |
| R2 | Stream | 1.332 | Drift | 0.098 |
| R3 | Stream | 1.401 | Drift | 0.741 |
| R4 | Stream | 0.993 | Drift | 0.489 |

**PECSW/SED for ametoctradin metabolites**

**Potato**

**Table 8.9‑14: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following twofold application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 21 (5-d intervals) – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 156.424 | - | 90.506 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 7.272 | - | 4.180 |
| Mar-May | 3.069 | - | 1.734 |
| Jun-Sep | 3.069 | - | 1.734 |
| Southern Europe | Oct-Feb | 5.871 | - | 3.365 |
| Mar-May | 5.871 | - | 3.365 |
| Jun-Sep | 4.470 | - | 2.550 |
| **M650F02** | | | | |
| Step 1 | - | 23.674 | - | 7.114 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.926 | - | 0.568 |
| Mar-May | 0.946 | - | 0.278 |
| Jun-Sep | 0.946 | - | 0.278 |
| Southern Europe | Oct-Feb | 1.599 | - | 0.471 |
| Mar-May | 1.599 | - | 0.471 |
| Jun-Sep | 1.273 | - | 0.375 |
| **M650F03** | | | | |
| Step 1 | - | 156.827 | - | 44.282 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 20.529 | - | 5.793 |
| Mar-May | 9.439 | - | 2.660 |
| Jun-Sep | 9.439 | - | 2.660 |
| Southern Europe | Oct-Feb | 16.832 | - | 4.749 |
| Mar-May | 16.832 | - | 4.749 |
| Jun-Sep | 13.136 | - | 3.704 |
| **M650F04** | | | | |
| Step 1 | - | 87.860 | - | 16.591 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 16.829 | - | 3.178 |
| Mar-May | 7.052 | - | 1.331 |
| Jun-Sep | 7.052 | - | 1.331 |
| Southern Europe | Oct-Feb | 13.570 | - | 2.562 |
| Mar-May | 13.570 | - | 2.562 |
| Jun-Sep | 10.311 | - | 1.947 |

**Table 8.9‑15: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 21 – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 5.942 | - | 3.417 |
| Mar-May | 2.505 | - | 1.417 |
| Jun-Sep | 2.505 | - | 1.417 |
| Southern Europe | Oct-Feb | 4.796 | - | 2.750 |
| Mar-May | 4.796 | - | 2.750 |
| Jun-Sep | 3.651 | - | 2.083 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.300 | - | 0.383 |
| Mar-May | 0.628 | - | 0.185 |
| Jun-Sep | 0.628 | - | 0.185 |
| Southern Europe | Oct-Feb | 1.076 | - | 0.317 |
| Mar-May | 1.076 | - | 0.317 |
| Jun-Sep | 0.852 | - | 0.251 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 11.672 | - | 3.294 |
| Mar-May | 5.366 | - | 1.512 |
| Jun-Sep | 5.366 | - | 1.512 |
| Southern Europe | Oct-Feb | 9.570 | - | 2.700 |
| Mar-May | 9.570 | - | 2.700 |
| Jun-Sep | 7.468 | - | 2.106 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 8.834 | - | 1.668 |
| Mar-May | 3.716 | - | 0.701 |
| Jun-Sep | 3.716 | - | 0.701 |
| Southern Europe | Oct-Feb | 7.128 | - | 1.346 |
| Mar-May | 7.128 | - | 1.346 |
| Jun-Sep | 5.422 | - | 1.024 |

**Table 8.9‑16: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following twofold application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 89 (5-d intervals) - late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 156.424 | - | 90.506 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 4.470 | - | 2.550 |
| Mar-May | 1.948 | - | 1.082 |
| Jun-Sep | 1.948 | - | 1.082 |
| Southern Europe | Oct-Feb | 3.629 | - | 2.060 |
| Mar-May | 3.629 | - | 2.060 |
| Jun-Sep | 2.788 | - | 1.571 |
| **M650F02** | | | | |
| Step 1 | - | 23.674 | - | 7.114 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.273 | - | 0.375 |
| Mar-May | 0.684 | - | 0.201 |
| Jun-Sep | 0.684 | - | 0.201 |
| Southern Europe | Oct-Feb | 1.076 | - | 0.317 |
| Mar-May | 1.076 | - | 0.317 |
| Jun-Sep | 0.880 | - | 0.259 |
| **M650F03** | | | | |
| Step 1 | - | 156.827 | - | 44.282 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 13.136 | - | 3.704 |
| Mar-May | 6.482 | - | 1.824 |
| Jun-Sep | 6.482 | - | 1.824 |
| Southern Europe | Oct-Feb | 10.918 | - | 3.078 |
| Mar-May | 10.918 | - | 3.078 |
| Jun-Sep | 8.700 | - | 2.451 |
| **M650F04** | | | | |
| Step 1 | - | 87.860 | - | 16.591 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 10.311 | - | 1.947 |
| Mar-May | 4.445 | - | 0.839 |
| Jun-Sep | 4.445 | - | 0.839 |
| Southern Europe | Oct-Feb | 8.356 | - | 1.577 |
| Mar-May | 8.356 | - | 1.577 |
| Jun-Sep | 6.401 | - | 1.208 |

**Table 8.9‑17: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 89 – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 3.651 | - | 2.083 |
| Mar-May | 1.589 | - | 0.883 |
| Jun-Sep | 1.589 | - | 0.883 |
| Southern Europe | Oct-Feb | 2.963 | - | 1.683 |
| Mar-May | 2.963 | - | 1.683 |
| Jun-Sep | 2.276 | - | 1.283 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 0.852 | - | 0.251 |
| Mar-May | 0.449 | - | 0.132 |
| Jun-Sep | 0.449 | - | 0.132 |
| Southern Europe | Oct-Feb | 0.718 | - | 0.211 |
| Mar-May | 0.718 | - | 0.211 |
| Jun-Sep | 0.583 | - | 0.172 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 7.468 | - | 2.106 |
| Mar-May | 3.685 | - | 1.037 |
| Jun-Sep | 3.685 | - | 1.037 |
| Southern Europe | Oct-Feb | 6.207 | - | 1.750 |
| Mar-May | 6.207 | - | 1.750 |
| Jun-Sep | 4.946 | - | 1.393 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 5.422 | - | 1.024 |
| Mar-May | 2.350 | - | 0.444 |
| Jun-Sep | 2.350 | - | 0.444 |
| Southern Europe | Oct-Feb | 4.398 | - | 0.830 |
| Mar-May | 4.398 | - | 0.830 |
| Jun-Sep | 3.374 | - | 0.637 |

**Table 8.9‑18: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following threefold application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 21 (5-d intervals) – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 234.635 | - | 135.759 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 7.543 | - | 4.342 |
| Mar-May | 3.166 | - | 1.795 |
| Jun-Sep | 3.166 | - | 1.795 |
| Southern Europe | Oct-Feb | 6.084 | - | 3.493 |
| Mar-May | 6.084 | - | 3.493 |
| Jun-Sep | 4.625 | - | 2.644 |
| **M650F02** | | | | |
| Step 1 | - | 35.511 | - | 10.671 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 2.265 | - | 0.668 |
| Mar-May | 1.107 | - | 0.326 |
| Jun-Sep | 1.107 | - | 0.326 |
| Southern Europe | Oct-Feb | 1.879 | - | 0.554 |
| Mar-May | 1.879 | - | 0.554 |
| Jun-Sep | 1.493 | - | 0.440 |
| **M650F03** | | | | |
| Step 1 | - | 235.240 | - | 66.423 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 28.136 | - | 7.940 |
| Mar-May | 12.777 | - | 3.601 |
| Jun-Sep | 12.777 | - | 3.601 |
| Southern Europe | Oct-Feb | 23.017 | - | 6.494 |
| Mar-May | 23.017 | - | 6.494 |
| Jun-Sep | 17.897 | - | 5.048 |
| **M650F04** | | | | |
| Step 1 | - | 131.790 | - | 24.887 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 24.389 | - | 4.605 |
| Mar-May | 10.154 | - | 1.917 |
| Jun-Sep | 10.154 | - | 1.917 |
| Southern Europe | Oct-Feb | 19.644 | - | 3.709 |
| Mar-May | 19.644 | - | 3.709 |
| Jun-Sep | 14.899 | - | 2.813 |

**Table 8.9‑19: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 21 – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 5.942 | - | 3.417 |
| Mar-May | 2.505 | - | 1.417 |
| Jun-Sep | 2.505 | - | 1.417 |
| Southern Europe | Oct-Feb | 4.796 | - | 2.750 |
| Mar-May | 4.796 | - | 2.750 |
| Jun-Sep | 3.651 | - | 2.083 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.300 | - | 0.383 |
| Mar-May | 0.628 | - | 0.185 |
| Jun-Sep | 0.628 | - | 0.185 |
| Southern Europe | Oct-Feb | 1.076 | - | 0.317 |
| Mar-May | 1.076 | - | 0.317 |
| Jun-Sep | 0.852 | - | 0.251 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 11.672 | - | 3.294 |
| Mar-May | 5.366 | - | 1.512 |
| Jun-Sep | 5.366 | - | 1.512 |
| Southern Europe | Oct-Feb | 9.570 | - | 2.700 |
| Mar-May | 9.570 | - | 2.700 |
| Jun-Sep | 7.468 | - | 2.106 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 8.834 | - | 1.668 |
| Mar-May | 3.716 | - | 0.701 |
| Jun-Sep | 3.716 | - | 0.701 |
| Southern Europe | Oct-Feb | 7.128 | - | 1.346 |
| Mar-May | 7.128 | - | 1.346 |
| Jun-Sep | 5.422 | - | 1.024 |

**Table 8.9‑20: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following threefold application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 89 (5-d intervals) - late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 234.635 | - | 135.759 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 4.625 | - | 2.648 |
| Mar-May | 1.999 | - | 1.115 |
| Jun-Sep | 1.999 | - | 1.115 |
| Southern Europe | Oct-Feb | 3.750 | - | 2.134 |
| Mar-May | 3.750 | - | 2.134 |
| Jun-Sep | 2.874 | - | 1.625 |
| **M650F02** | | | | |
| Step 1 | - | 35.511 | - | 10.671 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 1.493 | - | 0.440 |
| Mar-May | 0.798 | - | 0.234 |
| Jun-Sep | 0.798 | - | 0.234 |
| Southern Europe | Oct-Feb | 1.261 | - | 0.371 |
| Mar-May | 1.261 | - | 0.371 |
| Jun-Sep | 1.030 | - | 0.303 |
| **M650F03** | | | | |
| Step 1 | - | 235.240 | - | 66.423 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 17.897 | - | 5.048 |
| Mar-May | 8.681 | - | 2.444 |
| Jun-Sep | 8.681 | - | 2.444 |
| Southern Europe | Oct-Feb | 14.825 | - | 4.180 |
| Mar-May | 14.825 | - | 4.180 |
| Jun-Sep | 11.753 | - | 3.312 |
| **M650F04** | | | | |
| Step 1 | - | 131.790 | - | 24.733 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 14.899 | - | 2.813 |
| Mar-May | 6.358 | - | 1.200 |
| Jun-Sep | 6.358 | - | 1.200 |
| Southern Europe | Oct-Feb | 12.052 | - | 2.275 |
| Mar-May | 12.052 | - | 2.275 |
| Jun-Sep | 9.205 | - | 1.738 |

**Table 8.9‑21: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to potato (FOCUS crop: potatoes) at 240 g a.s./ha, BBCH 89 – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 3.651 | - | 2.083 |
| Mar-May | 1.589 | - | 0.883 |
| Jun-Sep | 1.589 | - | 0.883 |
| Southern Europe | Oct-Feb | 2.963 | - | 1.683 |
| Mar-May | 2.963 | - | 1.683 |
| Jun-Sep | 2.276 | - | 1.283 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 0.852 | - | 0.251 |
| Mar-May | 0.449 | - | 0.132 |
| Jun-Sep | 0.449 | - | 0.132 |
| Southern Europe | Oct-Feb | 0.718 | - | 0.211 |
| Mar-May | 0.718 | - | 0.211 |
| Jun-Sep | 0.583 | - | 0.172 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 7.468 | - | 2.106 |
| Mar-May | 3.685 | - | 1.037 |
| Jun-Sep | 3.685 | - | 1.037 |
| Southern Europe | Oct-Feb | 6.207 | - | 1.750 |
| Mar-May | 6.207 | - | 1.750 |
| Jun-Sep | 4.946 | - | 1.393 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 5.422 | - | 1.024 |
| Mar-May | 2.350 | - | 0.444 |
| Jun-Sep | 2.350 | - | 0.444 |
| Southern Europe | Oct-Feb | 4.398 | - | 0.830 |
| Mar-May | 4.398 | - | 0.830 |
| Jun-Sep | 3.374 | - | 0.637 |

**Onion**

**Table 8.9‑22: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following single application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 14 – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 78.212 | - | 45.253 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 4.338 | - | 2.483 |
| Jun-Sep | 4.338 | - | 2.483 |
| Southern Europe | Mar-May | 8.463 | - | 4.884 |
| Jun-Sep | 6.400 | - | 3.684 |
| **M650F02** | | | | |
| Step 1 | - | 11.837 | - | 3.557 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.986 | - | 0.291 |
| Jun-Sep | 0.986 | - | 0.291 |
| Southern Europe | Mar-May | 1.793 | - | 0.530 |
| Jun-Sep | 1.390 | - | 0.410 |
| **M650F03** | | | | |
| Step 1 | - | 78.413 | - | 21.851 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 8.729 | - | 2.462 |
| Jun-Sep | 8.729 | - | 2.462 |
| Southern Europe | Mar-May | 16.296 | - | 4.600 |
| Jun-Sep | 12.513 | - | 3.531 |
| **M650F04** | | | | |
| Step 1 | - | 43.930 | - | 8.244 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 6.446 | - | 1.217 |
| Jun-Sep | 6.446 | - | 1.217 |
| Southern Europe | Mar-May | 12.588 | - | 2.377 |
| Jun-Sep | 9.517 | - | 1.797 |

**Table 8.9‑23: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following single application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 49 – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 78.212 | - | 45.253 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.963 | - | 1.683 |
| Jun-Sep | 2.963 | - | 1.683 |
| Southern Europe | Mar-May | 5.713 | - | 3.284 |
| Jun-Sep | 4.338 | - | 2.483 |
| **M650F02** | | | | |
| Step 1 | - | 11.837 | - | 3.557 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.718 | - | 0.211 |
| Jun-Sep | 0.718 | - | 0.211 |
| Southern Europe | Mar-May | 1.255 | - | 0.370 |
| Jun-Sep | 0.986 | - | 0.291 |
| **M650F03** | | | | |
| Step 1 | - | 78.413 | - | 21.851 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 6.207 | - | 1.750 |
| Jun-Sep | 6.207 | - | 1.750 |
| Southern Europe | Mar-May | 11.251 | - | 3.175 |
| Jun-Sep | 8.729 | - | 2.462 |
| **M650F04** | | | | |
| Step 1 | - | 43.930 | - | 8.296 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 4.398 | - | 0.830 |
| Jun-Sep | 4.398 | - | 0.830 |
| Southern Europe | Mar-May | 8.493 | - | 1.604 |
| Jun-Sep | 6.446 | - | 1.217 |

**Table 8.9‑24: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following twofold application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 14 (5-d intervals) – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 156.424 | - | 90.506 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 5.310 |  | 3.039 |
| Jun-Sep | 5.310 |  | 3.039 |
| Southern Europe | Mar-May | 10.354 |  | 5.974 |
| Jun-Sep | 7.832 |  | 4.507 |
| **M650F02** | | | | |
| Step 1 | - | 23.674 | - | 7.114 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.469 | - | 0.433 |
| Jun-Sep | 1.469 | - | 0.433 |
| Southern Europe | Mar-May | 2.645 | - | 0.780 |
| Jun-Sep | 2.057 |  | 0.606 |
| **M650F03** | | | | |
| Step 1 | - | 156.827 | - | 44.282 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 15.354 | - | 4.331 |
| Jun-Sep | 15.354 | - | 4.331 |
| Southern Europe | Mar-May | 28.661 | - | 8.090 |
| Jun-Sep | 22.007 |  | 6.211 |
| **M650F04** | | | | |
| Step 1 | - | 87.860 | - | 16.591 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 12.267 | - | 2.316 |
| Jun-Sep | 12.267 | - | 2.316 |
| Southern Europe | Mar-May | 23.999 | - | 4.532 |
| Jun-Sep | 18.133 | - | 3.424 |

**Table 8.9‑25: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 14 – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 4.338 | - | 2.483 |
| Jun-Sep | 4.338 | - | 2.483 |
| Southern Europe | Mar-May | 8.463 | - | 4.884 |
| Jun-Sep | 6.400 | - | 3.684 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.986 | - | 0.291 |
| Jun-Sep | 0.986 | - | 0.291 |
| Southern Europe | Mar-May | 1.793 | - | 0.530 |
| Jun-Sep | 1.390 | - | 0.410 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 8.729 | - | 2.462 |
| Jun-Sep | 8.729 | - | 2.462 |
| Southern Europe | Mar-May | 16.296 | - | 4.600 |
| Jun-Sep | 12.513 | - | 3.531 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 6.446 | - | 1.217 |
| Jun-Sep | 6.446 | - | 1.217 |
| Southern Europe | Mar-May | 12.588 | - | 2.377 |
| Jun-Sep | 9.517 | - | 1.797 |

**Table 8.9‑26: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following twofold application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 49   
(5-d intervals) – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 156.424 | - | 90.506 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 3.629 | - | 2.060 |
| Jun-Sep | 3.629 | - | 2.060 |
| Southern Europe | Mar-May | 6.991 | - | 4.017 |
| Jun-Sep | 5.310 |  | 3.039 |
| **M650F02** | | | | |
| Step 1 | - | 23.674 | - | 7.114 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.076 | - | 0.317 |
| Jun-Sep | 1.076 | - | 0.317 |
| Southern Europe | Mar-May | 1.861 | - | 0.548 |
| Jun-Sep | 1.469 | - | 0.433 |
| **M650F03** | | | | |
| Step 1 | - | 156.827 | - | 44.282 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 10.918 | - | 3.078 |
| Jun-Sep | 10.918 | - | 3.078 |
| Southern Europe | Mar-May | 19.790 | - | 5.584 |
| Jun-Sep | 15.354 | - | 4.331 |
| **M650F04** | | | | |
| Step 1 | - | 87.860 | - | 16.591 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 8.356 | - | 1.577 |
| Jun-Sep | 8.356 | - | 1.577 |
| Southern Europe | Mar-May | 16.178 | - | 3.055 |
| Jun-Sep | 12.267 | - | 2.316 |

**Table 8.9‑27: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to onion (FOCUS crop: vegetable, bulb) at 240 g a.s./ha, BBCH 49 – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.963 | - | 1.683 |
| Jun-Sep | 2.963 | - | 1.683 |
| Southern Europe | Mar-May | 5.713 | - | 3.284 |
| Jun-Sep | 4.338 | - | 2.483 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.718 | - | 0.211 |
| Jun-Sep | 0.718 | - | 0.211 |
| Southern Europe | Mar-May | 1.255 | - | 0.370 |
| Jun-Sep | 0.986 | - | 0.291 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 6.207 | - | 1.750 |
| Jun-Sep | 6.207 | - | 1.750 |
| Southern Europe | Mar-May | 11.251 | - | 3.175 |
| Jun-Sep | 8.729 | - | 2.462 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 4.398 | - | 0.830 |
| Jun-Sep | 4.398 | - | 0.830 |
| Southern Europe | Mar-May | 8.493 | - | 1.604 |
| Jun-Sep | 6.446 | - | 1.217 |

**Tomato, aubergine**

**Table 8.9‑28: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following twofold application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 240 g a.s./ha, BBCH 21 (7-d intervals) – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 156.424 |  | 90.506 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.817 | - | 1.592 |
| Jun-Sep | 2.817 | - | 1.592 |
| Southern Europe | Mar-May | 5.390 | - | 3.090 |
| Jun-Sep | 4.103 | - | 2.341 |
| **M650F02** | | | | |
| Step 1 | - | 23.674 | - | 7.114 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.893 | - | 0.263 |
| Jun-Sep | 0.893 | - | 0.263 |
| Southern Europe | Mar-May | 1.504 | - | 0.443 |
| Jun-Sep | 1.199 | - | 0.353 |
| **M650F03** | | | | |
| Step 1 | - | 156.827 | - | 44.282 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 9.271 | - | 2.612 |
| Jun-Sep | 9.271 | - | 2.612 |
| Southern Europe | Mar-May | 16.500 | - | 4.655 |
| Jun-Sep | 12.885 | - | 3.633 |
| **M650F04** | | | | |
| Step 1 | - | 87.860 | - | 16.591 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 6.992 | - | 1.320 |
| Jun-Sep | 6.992 | - | 1.320 |
| Southern Europe | Mar-May | 13.449 | - | 2.539 |
| Jun-Sep | 10.220 | - | 1.930 |

**Table 8.9‑29: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 240 g a.s./ha, BBCH 21 – early application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.505 | - | 1.417 |
| Jun-Sep | 2.505 | - | 1.417 |
| Southern Europe | Mar-May | 4.796 | - | 2.750 |
| Jun-Sep | 3.651 | - | 2.083 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.628 | - | 0.185 |
| Jun-Sep | 0.628 | - | 0.185 |
| Southern Europe | Mar-May | 1.076 | - | 0.317 |
| Jun-Sep | 0.852 | - | 0.251 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 5.366 | - | 1.512 |
| Jun-Sep | 5.366 | - | 1.512 |
| Southern Europe | Mar-May | 9.570 | - | 2.700 |
| Jun-Sep | 7.468 | - | 2.106 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 3.716 | - | 0.701 |
| Jun-Sep | 3.716 | - | 0.701 |
| Southern Europe | Mar-May | 7.128 | - | 1.346 |
| Jun-Sep | 5.422 | - | 1.024 |

**Table 8.9‑30: FOCUS Step 1-2 PECSW and PECSED for ametoctradin metabolites following twofold application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 240 g a.s./ha, BBCH 89 (7-d intervals) – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 1 | - | 156.424 | - | 90.506 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.787 | - | 0.993 |
| Jun-Sep | 1.787 | - | 0.993 |
| Southern Europe | Mar-May | 3.331 | - | 1.892 |
| Jun-Sep | 2.559 | - | 1.442 |
| **M650F02** | | | | |
| Step 1 | - | 23.674 | - | 7.114 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.649 | - | 0.191 |
| Jun-Sep | 0.649 | - | 0.191 |
| Southern Europe | Mar-May | 1.015 | - | 0.299 |
| Jun-Sep | 0.832 | - | 0.245 |
| **M650F03** | | | | |
| Step 1 | - | 156.827 | - | 44.282 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 6.380 | - | 1.796 |
| Jun-Sep | 6.380 | - | 1.796 |
| Southern Europe | Mar-May | 10.717 | - | 3.021 |
| Jun-Sep | 8.549 | - | 2.408 |
| **M650F04** | | | | |
| Step 1 | - | 87.860 | - | 16.591 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 4.409 |  | 0.832 |
| Jun-Sep | 4.409 |  | 0.832 |
| Southern Europe | Mar-May | 8.283 | - | 1.564 |
| Jun-Sep | 6.346 | - | 1.198 |

**Table 8.9‑31: FOCUS Step 2 PECSW and PECSED for ametoctradin metabolites following respective single application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 240 g a.s./ha, BBCH 89 – late application**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **M650F01** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 1.589 | - | 0.883 |
| Jun-Sep | 1.589 | - | 0.883 |
| Southern Europe | Mar-May | 2.963 | - | 1.683 |
| Jun-Sep | 2.276 | - | 1.283 |
| **M650F02** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 0.449 | - | 0.132 |
| Jun-Sep | 0.449 | - | 0.132 |
| Southern Europe | Mar-May | 0.718 | - | 0.211 |
| Jun-Sep | 0.583 | - | 0.172 |
| **M650F03** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 3.685 | - | 1.037 |
| Jun-Sep | 3.685 | - | 1.037 |
| Southern Europe | Mar-May | 6.207 | - | 1.750 |
| Jun-Sep | 4.946 | - | 1.393 |
| **M650F04** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 2.350 | - | 0.444 |
| Jun-Sep | 2.350 | - | 0.444 |
| Southern Europe | Mar-May | 4.398 | - | 0.830 |
| Jun-Sep | 3.374 | - | 0.637 |

#### Propamocarb HCl

**Table 8.9‑32: Input parameters related to active substance propamocarb HCl for PECSW/SED calculations STEP 1-2**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Propamocarb HCl** | **Value in accordance to EU endpoint** |
| Molecular weight [g/mol] | 224.7 | Y (EFSA, 2006) |
| Water solubility [mg/L], at 20°C | 1005000 | Y (EFSA, 2006) |
| DT50 (soil) [d] | 13.9  (geometric mean, n = 16, normalisation to pF2, 20 °C) | Y (EFSA, 2006) |
| DT50 water [d] | 16.9 (DT50 Total system, n=4) | Y (EFSA, 2006) |
| DT50 sediment [d] | 16.9 (DT50 Total system, n=4) | Y (EFSA, 2006) |
| Kf,oc [mL/g] | 263.6a (geometric mean, n=12) | N Calculated from EFSA (2006) |

a As conservative worst-case PECSW calculations, geometric mean Kf,oc values for propamocarb HCl was selected instead of arithmetic mean (LOEP-EFSA, 2006).

**PECSW/SED of propamocarb HCl**

**Potato**

**Table 8.9‑33: FOCUS Step 1-2 PECSW and PECSED for propamocarb HCl following twofold application to potato (FOCUS crop: potatoes) at 902 g a.s./ha, BBCH 21-89 (5-d intervals)**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCL (early application)** | | | | |
| Step 1 | - | 461.540 | - | 1170.000 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 90.213 | - | 229.766 |
| Mar-May | 41.573 | - | 103.176 |
| Jun-Sep | 41.573 | - | 103.176 |
| Southern Europe | Oct-Feb | 74.000 | - | 187.027 |
| Mar-May | 74.000 | - | 187.027 |
| Jun-Sep | 57.786 | - | 144.288 |
| **Propamocarb HCL (late application)** | | | | |
| Step 1 | - | 461.540 | - | 1170.000 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 57.786 | - | 144.288 |
| Mar-May | 28.602 | - | 70.359 |
| Jun-Sep | 28.602 | - | 70.359 |
| Southern Europe | Oct-Feb | 48.058 | - | 119.585 |
| Mar-May | 48.058 | - | 119.585 |
| Jun-Sep | 38.330 | - | 94.972 |

**Table 8.9‑34: FOCUS Step 2 PECSW and PECSED for propamocarb HCl following respective single application to potato (FOCUS crop: potatoes) at 902 g a.s./ha, BBCH 21-89 (5-d intervals)**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCL (early application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 51.265 | - | 130.122 |
| Mar-May | 23.928 | - | 59.289 |
| Jun-Sep | 23.928 | - | 59.289 |
| Southern Europe | Oct-Feb | 42.153 | - | 106.102 |
| Mar-May | 42.153 | - | 106.102 |
| Jun-Sep | 33.040 | - | 82.344 |
| **Propamocarb HCL (late application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 33.040 | - | 82.344 |
| Mar-May | 16.639 | - | 40.845 |
| Jun-Sep | 16.639 | - | 40.845 |
| Southern Europe | Oct-Feb | 27.573 | - | 68.511 |
| Mar-May | 27.573 | - | 68.511 |
| Jun-Sep | 22.106 | - | 54.678 |

**Table 8.9‑35: FOCUS Step 1-2 PECSW and PECSED for propamocarb HCl following threefold application to potato (FOCUS crop: potatoes) at 902 g a.s./ha, BBCH 21-89 (5-d intervals)**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCL (early application)** | | | | |
| Step 1 | - | 692.309 | - | 1760.000 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 119.108 | - | 304.856 |
| Mar-May | 53.865 | - | 134.007 |
| Jun-Sep | 53.865 | - | 134.007 |
| Southern Europe | Oct-Feb | 97.360 | - | 247.529 |
| Mar-May | 97.360 | - | 247.529 |
| Jun-Sep | 75.612 | - | 190.203 |
| **Propamocarb HCL (late application)** | | | | |
| Step 1 | - | 692.309 | - | 1760.000 |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 75.612 | - | 190.203 |
| Mar-May | 36.467 | - | 89.989 |
| Jun-Sep | 36.467 | - | 89.989 |
| Southern Europe | Oct-Feb | 62.564 |  | 156.017 |
| Mar-May | 62.564 | - | 156.017 |
| Jun-Sep | 49.515 | - | 123.003 |

**Table 8.9‑36: FOCUS Step 2 PECSW and PECSED for propamocarb HCl following respective single application to potato (FOCUS crop: potatoes) at 902 g a.s./ha, BBCH 21-89 (5-d intervals)**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCL (early application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 51.265 | - | 130.122 |
| Mar-May | 23.928 | - | 59.289 |
| Jun-Sep | 23.928 | - | 59.289 |
| Southern Europe | Oct-Feb | 42.153 | - | 106.102 |
| Mar-May | 42.153 | - | 106.102 |
| Jun-Sep | 33.040 | - | 82.344 |
| **Propamocarb HCL (late application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Oct-Feb | 33.040 | - | 82.344 |
| Mar-May | 16.639 | - | 40.845 |
| Jun-Sep | 16.639 | - | 40.845 |
| Southern Europe | Oct-Feb | 27.573 | - | 68.511 |
| Mar-May | 27.573 | - | 68.511 |
| Jun-Sep | 22.106 | - | 54.678 |

**Onion**

**Table 8.9‑37: FOCUS Step 1-2 PECSW and PECSED for propamocarb HCl following single application to onion (FOCUS crop: vegetable, bulb) at 902 g a.s./ha, BBCH 14-49**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCl (early application)** | | | | |
| Step 1 | - | 230.770 | - | 586.442 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 38.508 | - | 96.494 |
| Jun-Sep | 38.508 | - | 96.494 |
| Southern Europe | Mar-May | 71.312 | - | 182.965 |
| Jun-Sep | 54.910 | - | 139.729 |
| **Propamocarb HCl (late application)** | | | | |
| Step 1 | - | 230.770 | - | 586.442 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 27.573 | - | 68.511 |
| Jun-Sep | 27.573 | - | 68.511 |
| Southern Europe | Mar-May | 49.442 | - | 125.318 |
| Jun-Sep | 38.508 | - | 96.494 |

**Table 8.9‑38: FOCUS Step 1-2 PECSW and PECSED for propamocarb HCl following twofold application to onion (FOCUS crop: vegetable, bulb) at 902 g a.s./ha, BBCH 14-49 (5-d intervals)**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCl (early application)** | | | | |
| Step 1 | - | 461.540 | - | 1170.000 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 67.515 | - | 169.931 |
| Jun-Sep | 67.515 | - | 169.931 |
| Southern Europe | Mar-May | 125.883 | - | 323.791 |
| Jun-Sep | 96.699 | - | 246.861 |
| **Propamocarb HCl (late application)** | | | | |
| Step 1 | - | 461.540 | - | 1170.000 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 48.058 | - | 119.585 |
| Jun-Sep | 48.058 | - | 119.585 |
| Southern Europe | Mar-May | 86.971 | - | 221.218 |
| Jun-Sep | 67.515 | - | 169.931 |

**Table 8.9‑39: FOCUS Step 2 PECSW and PECSED for propamocarb HCl following respective single application to onion (FOCUS crop: vegetable, bulb) at 902 g a.s./ha, BBCH 14-49**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCl (early application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 38.508 | - | 96.494 |
| Jun-Sep | 38.508 | - | 96.494 |
| Southern Europe | Mar-May | 71.312 | - | 182.965 |
| Jun-Sep | 54.910 | - | 139.729 |
| **Propamocarb HCl (late application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 27.573 | - | 68.511 |
| Jun-Sep | 27.573 | - | 68.511 |
| Southern Europe | Mar-May | 49.442 | - | 125.318 |
| Jun-Sep | 38.508 | - | 96.494 |

**Tomato, aubergine**

**Table 8.9‑40: FOCUS Step 1-2 PECSW and PECSED for propamocarb HCl following twofold application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 902 g a.s./ha, BBCH 21-89 (7-d intervals)**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCl (early application)** | | | | |
| Step 1 | - | 461.540 | - | 1170.000 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 39.901 | - | 99.018 |
| Jun-Sep | 39.901 | - | 99.018 |
| Southern Europe | Mar-May | 70.980 | - | 179.351 |
| Jun-Sep | 55.441 | - | 138.389 |
| **Propamocarb HCl (late application)** | | | | |
| Step 1 | - | 461.540 | - | 1170.000 |
| Step 2 | | | | |
| Northern Europe | Mar-May | 27.470 | - | 67.566 |
| Jun-Sep | 27.470 | - | 67.566 |
| Southern Europe | Mar-May | 46.117 | - | 114.745 |
| Jun-Sep | 36.794 | - | 91.155 |

**Table 8.9‑41: FOCUS Step 2 PECSW and PECSED for propamocarb HCl following respective single application to tomato and aubergine (FOCUS crop: vegetable, fruiting) at 902 g a.s./ha, BBCH 21-89**

| **Region** | **Application timing** | **Max PECSW[μg/L]** | **Dominant entry route** | **Max PECSED [μg/kg]** |
| --- | --- | --- | --- | --- |
| **Propamocarb HCl (early application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 23.928 | - | 59.289 |
| Jun-Sep | 23.928 | - | 59.289 |
| Southern Europe | Mar-May | 42.153 | - | 106.102 |
| Jun-Sep | 33.040 | - | 82.344 |
| **Propamocarb HCl (late application)** | | | | |
| Step 2 | | | | |
| Northern Europe | Mar-May | 16.639 | - | 40.845 |
| Jun-Sep | 16.639 | - | 40.845 |
| Southern Europe | Mar-May | 27.573 | - | 68.511 |
| Jun-Sep | 22.106 | - | 54.678 |

### PECSW/SED of formulation BAS 743 03 F

Calculation of the PEC values for the formulation BAS 743 03 F arising from the drift loading into surface water was performed by the applicant using the FOCUS drift calculator in SWASH, for application rates of 2.0 L product/ha (equivalent to 2.142 kg product/ha, respectively assuming a density of 1.071 g/mL) on field crops to cover application uses on potato, onion, tomato and aubergine.

**Table 8.9‑42: Drift PECSW of the formulation BAS 743 03 F**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Crop** | **Waterbody** | **PECSW [µg/L]** | | |
| **FOCUS distance** | **5 m  no-spray buffer** | **10 m  no-spray buffer** |
| Vegetable, bulba,  1 × 2.0 L product/ha | Ditch | 13.762 | 3.730 | 1.978 |
| Pond | 0.469 | 0.406 | 0.292 |
| Stream | 10.213 | 3.730 | 1.978 |

a As a representative crop for field use crops.

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

### Ametoctradin

|  |  |
| --- | --- |
| Table ‑ Summary of atmospheric degradation and behaviour for ametoctradin | |
| Compound | Ametoctradin |
| Direct photolysis in air | Not studied - no data requested |
| Quantum yield of direct phototransformation | 3.0 × 10-5 mol/Einstein |
| Photochemical oxidative degradation in air | DT50 (h): 3.3 h (0.27 d.) derived by the Atkinson model |
| Volatilization | Vapor pressure (Pa): 2.1 × 10-10 Pa at 20°C  Henry's Law Constant (Pa.m3/mol): 4.13 × 10-07 at 20°C |

The vapor pressure at 20°C of the active substance ametoctradin is < 10‑5 Pa. Hence the active substance is regarded as non-volatile.

|  |
| --- |
| **Review Comments:**  The data on atmospheric degradation and behavior in air for ametoctradin provided by the Applicant are considered acceptable. |

### Propamocarb HCl

Table ‑ Summary of atmospheric degradation and behaviour for propamocarb HCl

|  |  |
| --- | --- |
| Compound | Propamocarb HCL |
| Direct photolysis in air | Not determined – no data requested |
| Quantum yield of direct phototransformation | Not determined in air |
| Photochemical oxidative degradation in air | DT50 (h): 4.03 and 13.4 derived by the Atkinson model |
| Volatilisation | Vapour pressure (Pa): 8.1 × 10-5 Pa at 25°C (4.21 × 10-5 Pa at 20°C  Henry's Law Constant (Pa.m3/mol): 8.5 × 10-9 |

The vapour pressure at 20 °C of the active substance propamocarb HCl is 4.21 × 10-5 Pa (calculated using EVA tool) which is between 10‑5 and 10‑4 Pa. Hence the active substance propamocarb is regarded as semivolatile (volatilisation only from plant surfaces). Therefore exposure of adjacent surface waters and terrestrial ecosystems by the active substance propamocarb HCl due to volatilization with subsequent deposition should be considered.

|  |
| --- |
| **Review Comments:**  In the DAR Vol. B8 following information are given:  “*After 24 hours under standard test conditions Propamocarb HCl, as applied radioactivity, was not observed to volatilise more than 20% from soil or plant (French beans) surfaces. (…)*  *The volatilisation loss of Propamocarb HCl from the soil surface, within a 24-hour period after treatment, was calculated to be <0.001% of the applied amount. The percentage loss for Propamocarb HCl is substantially below the German BBA trigger value of 20%. Therefore, owing to the combination of low volatilisation loss and short persistence in the atmosphere, the PECa of Propamocarb HCl is likely to be low.”*  Conclusion: *“Based on its vapour pressure (3.1 – 4.7 \* 10-5 Pa at 20 ºC and <1.7 \* 10-3 Pa at 25 ºC) and its Henry’s Law constant (<1.7 \* 10-8 Pa m3 mol-1 at 20 ºC and 3.54 \* 10-7 Pa m3 mol-1 at 25 ºC), the volatility of propamocarb hydrochloride can be considered low. This suggestion was further supported following investigation of the volatility of propamocarb hydrochloride from soil (loss <0.001% of the applied amount, calculated with the Dow method) and leaf surfaces. Bimolecular rate constants for atmospheric reactions with photo-generated hydroxyl radicals were calculated to be 9.54 \* 10-11 cm3 molecule-1 s-1 and 2.878322 \* 10-11 cm3 molecule-1 s-1 in two oxidative studies, corresponding to atmospheric DT50 values estimated to be 4.03 hours and 13.4 hours, respectively. All these factors suggested that levels of propamocarb hydrochloride in air following normal agricultural use of the formulated product will be low*.”  No further evaluation is required. |

1. Lists of data considered in support of the evaluation

Tables considered not relevant can be deleted as appropriate.

MS to blacken authors of vertebrate studies in the version made available to third parties/public.

**List of data submitted by the applicant and relied on**

| Data point | Author(s) | Year | Title Company Report No.  Source (where different from company) GLP or GEP status Published or not | Vertebrate study  Y/N | Owner |
| --- | --- | --- | --- | --- | --- |
| KCP 9.2.4.1/1 | Halle, W. | 2023 | Ametoctradin - Predicted environmental concentrations in groundwater after post-emergence application of ametoctradin and its metabolites (Product: BAS 743 03 F) to various crops in the Central Zone of the European Union  2023/2017534  Exponent International Ltd., Basel, Switzerland  no  Unpublished | No | XXXX |
| KCP 9.2.4.1/2 | Halle, W. | 2023 | Propamocarb HCl - Predicted environmental concentrations in groundwater after post-emergence application of propamocarb HCl (Product BAS 743 03 F) to various crops in the Central Zone of the European Union  2023/2017535  Exponent International Ltd., Basel, Switzerland  no  Unpublished | No | XXXX |
| KCP 9.2.5/1 | Halle, W. | 2023 | Predicted environmental concentrations in surface water after post-emergence application of ametoctradin and its metabolites (Product BAS 743 03 F) to various crops in the Central Zone of the European Union - Focus step 1-3 caclulations  2023/2017536  Exponent International Ltd., Basel, Switzerland  no  Unpublished | No | XXXX |
| KCP 9.2.5/2 | Halle, W. | 2023 | Predicted environmental concentrations in surface water after post-emergence application of propamocarb HCl (Product BAS 743 03 F) to various crops in the Central Zone of the European Union - Focus step 1-2 calculations  2023/2017538  Exponent International Ltd., Basel, Switzerland  no  Unpublished | No | XXXX |

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

There were no studies already evaluated in this section.

The following tables are to be completed by MS

**List of data submitted by the applicant and not relied on**

| **Data point** | **Author(s)** | **Year** | **Title Company Report No.  Source (where different from company) GLP or GEP status Published or not** | **Vertebrate study**  **Y/N** | **Owner** |
| --- | --- | --- | --- | --- | --- |
| KCP XX | Author | YYYY | Title  Company Report N  Source  GLP/non GLP/GEP/non GEP  Published/Unpublished | Y/N | Owner |
|  |  |  |  |  |  |

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

| **Data point** | **Author(s)** | **Year** | **Title Company Report No.  Source (where different from company) GLP or GEP status Published or not** | **Vertebrate study**  **Y/N** | **Owner** |
| --- | --- | --- | --- | --- | --- |
| KCP XX | Author | YYYY | Title  Company Report N  Source  GLP/non GLP/GEP/non GEP  Published/Unpublished | Y/N | Owner |
|  |  |  |  |  |  |

1. Detailed evaluation of the new Annex II studies

Not relevant.

1. Additional information provided by the applicant (e.g. detailed modelling data)
   1. PECsoil for Ametoctradin

No separate PECsoil report has been prepared. The example files for PECsoil calculations with ESCAPE model are provided.

**Ametoctradin, M650F01, M650F02**

***E S C A P E***

**Estimation of Soil Concentrations After PEsticide Applications**

*developed by Michael Klein*

Program version: 2.0 (26 November 2019)

Date of this simulation: 3/10/2023, 3:23:59 PM

Calculation problem: Programcheck

PROGRAM SETTINGS

Calculation mode: Residues from different applications are considered separately over one year

Application mode: Single annual application pattern (calculation period 1 year)

SCENARIO DATA USED IN THE CALCULATION

Name of the scenario: Pot\_3x240g\_BB21

Name of the soil: Borstel

Soil density (kg/L): 1.5

Soil depth (cm): 5

Tillage depth (cm)\*: 20

Organic carbon content (%): 1.5

Field capacity (Vol%): 29.2

Wilting point (Vol%): 6.4

Climatic conditions: 20 °C constant

(\* for calculation of background concentrations)

APPLICATION PATTERN USED IN THE CALCULATION

Crop rotation: every 2nd year

Number of Applications : 3

1st Application date: 13 May

Application rate (g/ha): 240

Time between two applications (d): 5

Crop interception (%): 60

COMPOUNDS CONSIDERED IN THE CALCULATION

Metabolism scheme: Active compound and two parallel metabolites

Compound Molecular mass(g/mol) KOC(L/kg) Formation (%)

AMT 275.4

M01 249.3 21.8 92.8

M02 235.3 30.6 6.4

DEGRADATION KINETICS PARAMETERS CONSIDERED FOR THE CALCULATION

Soil study: soil study 1

Metabolism scheme: Active compound and two parallel metabolites

Kinetics for AMT: Double First Order in Parallel (DFOP)

DT50 1(d): 2.9358

DT50 2(d): 133.3

Rate constant 1 (1/d): 0.2361

Rate constant 2 (1/d): 0.0052

Parameter g: 0.9361

Q10-factor: 2.58

Walker-exponent: 0.7

Ref. temperature (°C): 20

Kinetics for M01: Single First order (SFO)

DT50 (d): 10.8

Rate constant (1/d): 0.0642

Q10-factor: 2.58

Walker-exponent: 0.7

Ref. temperature (°C): 20

Kinetics for M02: Single First order (SFO)

DT50 (d): 21.6

Rate constant (1/d): 0.0321

Q10-factor: 2.58

Walker-exponent: 0.7

Ref. temperature (°C): 20

**RESULTS OF THE CALCULATION**

Metabolism scheme: Active compound and two parallel metabolites

***RESULTS FOR: AMT***

Calculations over one year

Maximum annual total soil concentration for AMT over 5 cm(mg/kg): 0.1918 occurring on day 10

Calculated time dependent total soil concentrations over 5 cm for AMT after one year (mg/kg)

Time(d) PECact\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1564 0.1741 10 11

2 0.1284 0.1583 10 12

4 0.0887 0.1420 9 13

7 0.0552 0.1317 5 12

14 0.0284 0.1139 0 14

21 0.0226 0.0943 0 21

28 0.0209 0.0778 0 28

42 0.0192 0.0591 0 42

50 0.0184 0.0528 0 50

100 0.0142 0.0350 0 100

(\* PECact values are related to the time after the maximum concentration)

*Calculation of background concentrations after many years*

Final Background concentration in total soil for AMT over 20 cm(mg/kg): 0.0011\*\*

(\*\* according to the estimation 100% of the final plateau was reached after 10 years without crop rotation)

Reduction factor to account for crop rotation: 2

Final Background concentration in total soil including crop rotation(mg/kg): 0.0005

*Calculations of concentrations considering accumulation after many years of application*

Maximum total soil concentration for AMT over 5 cm considering accumulation\* (mg/kg) 0.1924

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

Calculated time dependent total soil concentrations over 5 cm for AMT(mg/kg) considering accumulation\*

Time(d) PECact\*\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1569 0.1746 10 11

2 0.1289 0.1588 10 12

4 0.0893 0.1426 9 13

7 0.0557 0.1322 5 12

14 0.0289 0.1144 0 14

21 0.0231 0.0948 0 21

28 0.0214 0.0783 0 28

42 0.0198 0.0596 0 42

50 0.0190 0.0534 0 50

100 0.0147 0.0355 0 100

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

(\*\* PECact values are related to the time after the maximum concentration)'

**RESULTS FOR: M01**

*Calculations over one year*

Maximum annual total soil concentration for M01 over 5 cm(mg/kg): 0.1727 occurring on day 15^

(^ This is 37.26 % of the theoretical maximum concentration of the metabolite)

Calculated time dependent total soil concentrations over 5 cm for M01 after one year (mg/kg)

Time(d) PECact\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1712 0.1722 14 15

2 0.1678 0.1721 14 16

4 0.1576 0.1708 13 17

7 0.1382 0.1675 12 19

14 0.0940 0.1546 10 24

21 0.0616 0.1406 7 28

28 0.0400 0.1268 5 33

42 0.0171 0.1022 2 44

50 0.0108 0.0907 1 51

100 0.0014 0.0495 0 100

(\* PECact values are related to the time after the maximum concentration)

*Calculation of background concentrations after many years*

Final Background concentration in total soil for M01 over 20 cm(mg/kg): 0.0001\*\*

(\*\* according to the estimation 100% of the final plateau was reached after 10 years without crop rotation)

Reduction factor to account for crop rotation: 2

Final Background concentration in total soil including crop rotation(mg/kg): <0.0001

*Calculations of concentrations considering accumulation after many years of application*

Maximum total soil concentration for M01 over 5 cm considering accumulation\* (mg/kg) 0.1727

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

Calculated time dependent total soil concentrations over 5 cm for M01(mg/kg) considering accumulation\*

Time(d) PECact\*\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1712 0.1723 14 15

2 0.1679 0.1721 14 16

4 0.1577 0.1709 13 17

7 0.1383 0.1675 12 19

14 0.0941 0.1546 10 24

21 0.0616 0.1407 7 28

28 0.0400 0.1268 5 33

42 0.0172 0.1022 2 44

50 0.0108 0.0907 1 51

100 0.0015 0.0496 0 100

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

(\*\* PECact values are related to the time after the maximum concentration)'

**RESULTS FOR: M02**

*Calculations over one year*

Maximum annual total soil concentration for M02 over 5 cm(mg/kg): 0.0139 occurring on day 17^

(^ This is 3.17 % of the theoretical maximum concentration of the metabolite)

Calculated time dependent total soil concentrations over 5 cm for M02 after one year (mg/kg)

Time(d) PECact\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.0138 0.0139 16 17

2 0.0137 0.0138 16 18

4 0.0132 0.0138 15 19

7 0.0124 0.0137 14 21

14 0.0102 0.0131 12 26

21 0.0082 0.0124 11 32

28 0.0066 0.0116 9 37

42 0.0043 0.0101 6 48

50 0.0033 0.0094 5 55

100 0.0008 0.0060 1 101

(\* PECact values are related to the time after the maximum concentration)

*Calculation of background concentrations after many years*

Final Background concentration in total soil for M02 over 20 cm(mg/kg): <0.0001\*\*

(\*\* according to the estimation 100% of the final plateau was reached after 10 years without crop rotation)

Reduction factor to account for crop rotation: 2

Final Background concentration in total soil including crop rotation(mg/kg): <0.0001

*Calculations of concentrations considering accumulation after many years of application*

Maximum total soil concentration for M02 over 5 cm considering accumulation\* (mg/kg) 0.0139

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

Calculated time dependent total soil concentrations over 5 cm for M02(mg/kg) considering accumulation\*

Time(d) PECact\*\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.0138 0.0139 16 17

2 0.0137 0.0139 16 18

4 0.0132 0.0138 15 19

7 0.0124 0.0137 14 21

14 0.0102 0.0131 12 26

21 0.0082 0.0124 11 32

28 0.0066 0.0116 9 37

42 0.0043 0.0101 6 48

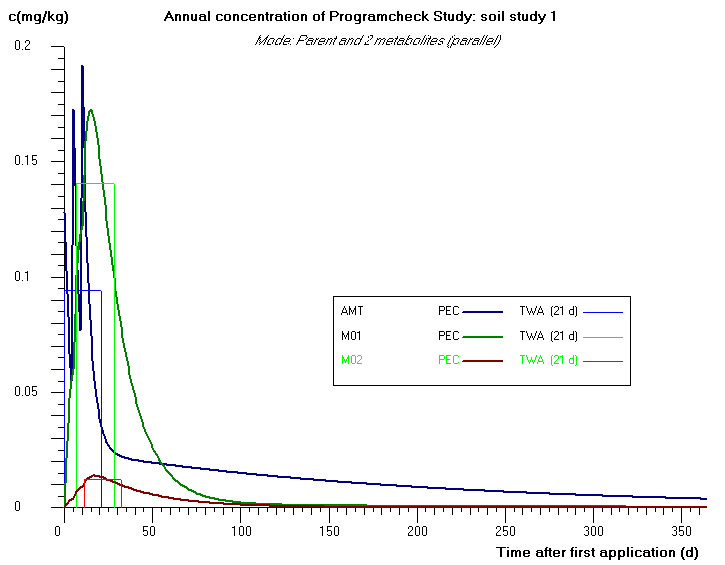
50 0.0034 0.0094 5 55

100 0.0008 0.0060 1 101

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

(\*\* PECact values are related to the time after the maximum concentration)'

GRAPHIC REPRESENTATION OF THE CALCULATION



**M650F03 as parent**

***E S C A P E***

**Estimation of Soil Concentrations After PEsticide Applications**

*developed by Michael Klein*

Program version: 2.0 (26 November 2019)

Date of this simulation: 3/10/2023, 3:24:09 PM

Calculation problem: Programcheck

PROGRAM SETTINGS

Calculation mode: Residues from different applications are considered separately over one year

Application mode: Single annual application pattern (calculation period 1 year)

SCENARIO DATA USED IN THE CALCULATION

Name of the scenario: M03\_Pot\_3x240g\_BB21

Name of the soil: Borstel

Soil density (kg/L): 1.5

Soil depth (cm): 5

Tillage depth (cm)\*: 20

Organic carbon content (%): 1.5

Field capacity (Vol%): 29.2

Wilting point (Vol%): 6.4

Climatic conditions: 20 °C constant

(\* for calculation of background concentrations)

APPLICATION PATTERN USED IN THE CALCULATION

Crop rotation: every 2nd year

Number of Applications : 3

1st Application date: 13 May

Application rate (g/ha): 43.9

Time between two applications (d): 5

Crop interception (%): 0

COMPOUNDS CONSIDERED IN THE CALCULATION

Metabolism scheme: Parent compound without metabolites

DEGRADATION KINETICS PARAMETERS CONSIDERED FOR THE CALCULATION

Soil study: soil study 1

Metabolism scheme: Parent compound without metabolites

Kinetics for Programcheck: Single First order (SFO)

DT50 (d): 19.8

Rate constant (1/d): 0.035

Q10-factor: 2.58

Walker-exponent: 0.7

Ref. temperature (°C): 20

**RESULTS OF THE CALCULATION**

Metabolism scheme: Parent compound without metabolites

RESULTS FOR: Programcheck

*Calculations over one year*

Maximum annual total soil concentration for Programcheck over 5 cm(mg/kg): 0.1489 occurring on day 10

Calculated time dependent total soil concentrations over 5 cm for Programcheck after one year (mg/kg)

Time(d) PECact\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1438 0.1464 10 11

2 0.1388 0.1438 10 12

4 0.1295 0.1390 10 14

7 0.1165 0.1325 9 16

14 0.0912 0.1198 9 23

21 0.0714 0.1118 5 26

28 0.0559 0.1031 4 32

42 0.0342 0.0878 0 42

50 0.0259 0.0805 0 50

100 0.0045 0.0489 0 100

(\* PECact values are related to the time after the maximum concentration)

*Calculation of background concentrations after many years*

Final Background concentration in total soil for Programcheck over 20 cm(mg/kg): <0.0001\*\*

(\*\* according to the estimation 99% of the final plateau was reached after 10 years without crop rotation)

Reduction factor to account for crop rotation: 2

Final Background concentration in total soil including crop rotation(mg/kg): <0.0001

*Calculations of concentrations considering accumulation after many years of application*

Maximum total soil concentration for Programcheck over 5 cm considering accumulation\* (mg/kg) 0.1489

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

Calculated time dependent total soil concentrations over 5 cm for Programcheck(mg/kg) considering accumulation\*

Time(d) PECact\*\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1438 0.1464 10 11

2 0.1388 0.1438 10 12

4 0.1295 0.1390 10 14

7 0.1165 0.1325 9 16

14 0.0912 0.1198 9 23

21 0.0714 0.1118 5 26

28 0.0559 0.1031 4 32

42 0.0342 0.0878 0 42

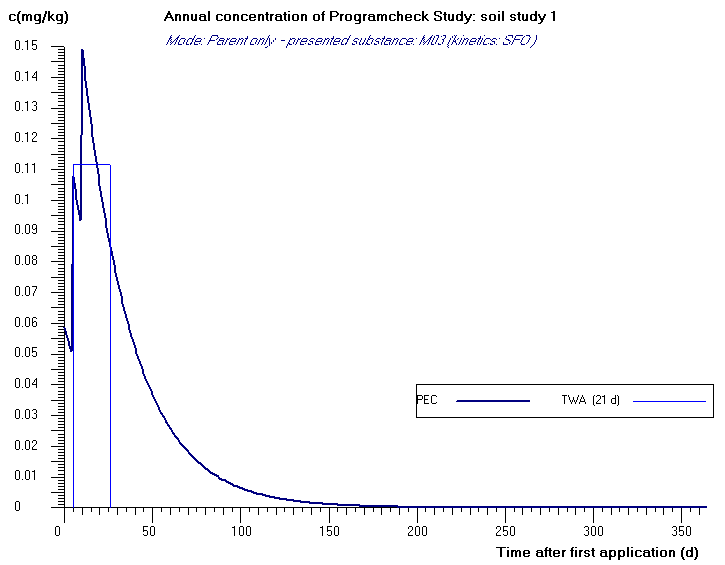
50 0.0259 0.0805 0 50

100 0.0045 0.0489 0 100

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

(\*\* PECact values are related to the time after the maximum concentration)'

GRAPHIC REPRESENTATION OF THE CALCULATION



**M650F04 as parent**

***E S C A P E***

**Estimation of Soil Concentrations After PEsticide Applications**

*developed by Michael Klein*

Program version: 2.0 (26 November 2019)

Date of this simulation: 3/10/2023, 3:24:19 PM

Calculation problem: Programcheck

PROGRAM SETTINGS

Calculation mode: Residues from different applications are considered separately over one year

Application mode: Single annual application pattern (calculation period 1 year)

SCENARIO DATA USED IN THE CALCULATION

Name of the scenario: M04\_Pot\_3x240g\_BB21

Name of the soil: Borstel

Soil density (kg/L): 1.5

Soil depth (cm): 5

Tillage depth (cm)\*: 20

Organic carbon content (%): 1.5

Field capacity (Vol%): 29.2

Wilting point (Vol%): 6.4

Climatic conditions: 20 °C constant

(\* for calculation of background concentrations)

APPLICATION PATTERN USED IN THE CALCULATION

Crop rotation: every 2nd year

Number of Applications : 3

1st Application date: 13 May

Application rate (g/ha): 40.2

Time between two applications (d): 5

Crop interception (%): 0

COMPOUNDS CONSIDERED IN THE CALCULATION

Metabolism scheme: Parent compound without metabolites

DEGRADATION KINETICS PARAMETERS CONSIDERED FOR THE CALCULATION

Soil study: soil study 1

Metabolism scheme: Parent compound without metabolites

Kinetics for Programcheck: Double First Order in Parallel (DFOP)

DT50 1(d): 437.32

DT50 2(d): 9.5193

Rate constant 1 (1/d): 0.0016

Rate constant 2 (1/d): 0.0728

Parameter g: 0.6719

Q10-factor: 2.58

Walker-exponent: 0.7

Ref. temperature (°C): 20

**RESULTS OF THE CALCULATION**

Metabolism scheme: Parent compound without metabolites

RESULTS FOR: Programcheck

*Calculations over one year*

Maximum annual total soil concentration for Programcheck over 5 cm(mg/kg): 0.1455 occurring on day 10

Calculated time dependent total soil concentrations over 5 cm for Programcheck after one year (mg/kg)

Time(d) PECact\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1426 0.1441 10 11

2 0.1400 0.1427 10 12

4 0.1351 0.1401 10 14

7 0.1290 0.1366 10 17

14 0.1187 0.1301 9 23

21 0.1120 0.1254 9 30

28 0.1075 0.1216 9 37

42 0.1021 0.1161 9 51

50 0.1000 0.1137 9 59

100 0.0915 0.1049 5 105

(\* PECact values are related to the time after the maximum concentration)

*Calculation of background concentrations after many years*

Final Background concentration in total soil for Programcheck over 20 cm(mg/kg): 0.0342\*\*

(\*\* according to the estimation 99% of the final plateau was reached after 10 years without crop rotation)

Reduction factor to account for crop rotation: 2

Final Background concentration in total soil including crop rotation(mg/kg): 0.0171

*Calculations of concentrations considering accumulation after many years of application*

Maximum total soil concentration for Programcheck over 5 cm considering accumulation\* (mg/kg) 0.1626

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

Calculated time dependent total soil concentrations over 5 cm for Programcheck(mg/kg) considering accumulation\*

Time(d) PECact\*\* PECtwa Begin TWAframe(d) End TWAframe(d)

1 0.1597 0.1612 10 11

2 0.1571 0.1598 10 12

4 0.1522 0.1572 10 14

7 0.1461 0.1537 10 17

14 0.1358 0.1472 9 23

21 0.1291 0.1425 9 30

28 0.1246 0.1387 9 37

42 0.1192 0.1332 9 51

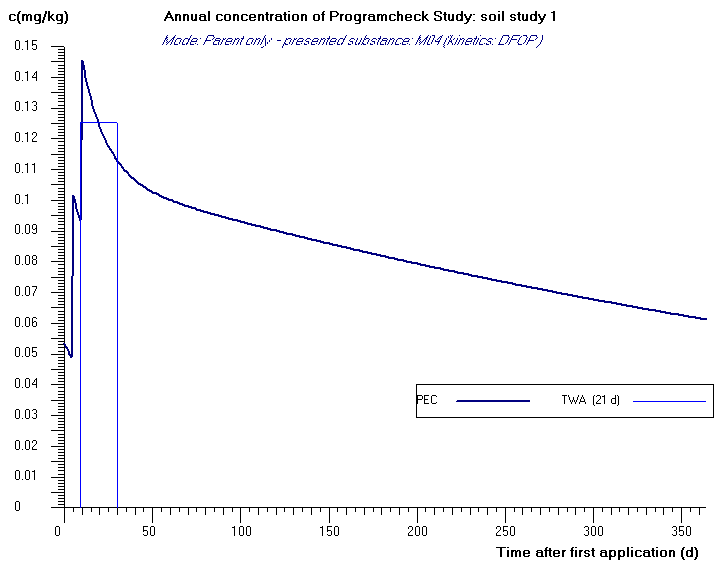
50 0.1171 0.1308 9 59

100 0.1086 0.1220 5 105

(\* a tillage depth of 20 cm was considered for calculating the background concentration)

(\*\* PECact values are related to the time after the maximum concentration)'

GRAPHIC REPRESENTATION OF THE CALCULATION



* 1. Example input and output files for PECGW calculation of propamocarb HCl with PUF = 0 following zRMS PL request

**PEARL**

**PEARL input file (\*.prl) for propamocarb HCl following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha (5-d intervals), every 2nd year, scenario Hamburg (PUF = 0)**

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| \*-------------------------------------------------------------------------------  \* INPUT FILE for PEARL  \* Generated by user interface version FOCUSPEARL 5.5.5 (build : 5.5.5) (October 2020) on 02/04/2024 14:38:19  \*-------------------------------------------------------------------------------  \* This file is intended to be used by expert users.  \*  \* Contact addresses:  \* -----------------  \* Aaldrik Tiktak Erik van den Berg  \* Environmental Assessment Agency (PBL) Wageningen Environmental Research (WENR)  \* PO BOX 30314 PO BOX 47  \* 2500 GH The Hague 6700 AA Wageningen  \* The Netherlands The Netherlands  \* e-mail: aaldrik.tiktak@pbl.nl erik.vandenberg@wur.nl  \*  \* (c) 2020 RIVM, PBL, WENR  \*-------------------------------------------------------------------------------  \* Section 1: Control section  \*-------------------------------------------------------------------------------  FOCUSPEARL CallingProgram  5.5.5 CallingProgramVersion  Groundwater ExposureType  6 InitYears (y)  0 NumRep (-)  01-Jan-1901 TimStart  31-Dec-1946 TimEnd  0.001 ThetaTol (m3.m-3)  Month OptDelTimPrn  30 DelTimPrn (d)  OnLine OptHyd  1E-5 DelTimSwaMin (d)  0.2 DelTimSwaMax (d)  Yes PrintCumulatives  1.0 GWLTol (m)  30 MaxItSwa  No OptHysteresis  0.2 PreHeaWetDryMin (cm)  All OptSys  Yes OptScreen  No OptPaddy  No OptMacropore  None OptAux    \*-------------------------------------------------------------------------------  \* Section 2: Soil section  \*-------------------------------------------------------------------------------  HAMB-S\_Soil SoilTypeID  HAMBURG Location  table SoilProfile  ThiHor NumLay  (m)  0.01 5  0.29 29  0.3 24  0.15 6  0.15 6  0.1 4  0.5 10  3 30  end\_table  table horizon SoilProperties  Nr FraSand FraSilt FraClay CntOm pH  (kg.kg-1) (kg.kg-1) (kg.kg-1) (kg.kg-1) (-)  1 0.683 0.245 0.072 0.026 6.4  2 0.683 0.245 0.072 0.026 6.4  3 0.67 0.263 0.067 0.017 5.6  4 0.962 0.029 0.009 0.0034 5.6  5 0.998 0.002 0 0 5.7  6 1 0 0 0 5.5  7 1 0 0 0 5.5  8 1 0 0 0 5.5  end\_table  table horizon VanGenuchtenPar  Nr ThetaSat ThetaRes AlphaDry AlphaWet n KSat l  (m3.m-3) (m3.m-3) (cm-1) (cm-1) (-) (m.d-1) (-)  1 0.391 0.036 0.0149 0.0298 1.468 2.016 0.5  2 0.391 0.036 0.0149 0.0298 1.468 2.016 0.5  3 0.37 0.03 0.0126 0.0252 1.565 2.736 0.5  4 0.351 0.029 0.0181 0.0362 1.598 2.448 0.5  5 0.31 0.015 0.0281 0.0562 1.606 2.448 0.5  6 0.31 0.015 0.0281 0.0562 1.606 2.448 0.5  7 0.31 0.015 0.0281 0.0562 1.606 2.448 0.5  8 0.31 0.015 0.0281 0.0562 1.606 2.448 0.5  end\_table  Input OptRho  table horizon Rho (kg.m-3)  1 1500.0  2 1500.0  3 1600.0  4 1560.0  5 1620.0  6 1600.0  7 1600.0  8 1600.0  end\_table    0.002 ZPndMax (m)    \* Soil evaporation parameters  Boesten OptSolEvp  1 FacEvpSol (-)  0.79 CofRedEvp (cm1/2)  0.01 PrcMinEvp (m.d-1)    Table horizon LenDisLiq (m)  1 0.05  2 0.05  3 0.05  4 0.05  5 0.05  6 0.05  7 0.05  8 0.05  end\_table  MillingtonQuirk OptCofDifRel  2 ExpDifLiqMilNom (-)  0.6667 ExpDifLiqMilDen (-)  2 ExpDifGasMilNom (-)  0.6667 ExpDifGasMilDen (-)  Constant OptPnd    \*-------------------------------------------------------------------------------  \* Section 3: Weather and irrigation section  \*-------------------------------------------------------------------------------  hamb-m MeteoStation  Input OptEvp  5.3 TemLboSta (C)  No OptIrr  No IrrigationScheme  1.0 FacPrc (-)  1.0 FacEvp (-)  0.0 DifTem (C)  Laminar OptTraRes  Daily OptMetInp  No OptRainfallEvents  No OptSnow    \*-------------------------------------------------------------------------------  \* Section 4a: Lower boundary flux  \*-------------------------------------------------------------------------------  -200 ZGrwLevSta (cm)  FncGrwLev OptLbo  -0.01 CofFncGrwLev (m.d-1)  -1.4 ExpFncGrwLev (m-1)  \*-------------------------------------------------------------------------------  \* Section 4b: Drainage/infiltration section  \*-------------------------------------------------------------------------------  No OptDra  No OptSurDra  0 NumDraLev  \*-------------------------------------------------------------------------------  \* Section 5: Compound section  \*-------------------------------------------------------------------------------  PPC2 SubstanceName  table compounds  PPC2  end\_table  EqlDom\_Input OptDT50\_PPC2  224.7 MolMas\_PPC2 (g.mol-1)  table FraPrtDau (mol.mol-1)  end\_table  OptimumConditions OptCntLiqTraRef\_PPC2  13.9 DT50Ref\_PPC2 (d)  20. TemRefTra\_PPC2 (C)  0.7 ExpLiqTra\_PPC2 (-)  65.4 MolEntTra\_PPC2 (kJ.mol-1)  table horizon FacZTra (-)  hor PPC2  1 1  2 1  3 0.5  4 0.3  5 0.3  6 0.3  7 0  8 0  end\_table  table horizon FacZSor (-)  hor PPC2  1 -99  2 -99  3 -99  4 -99  5 -99  6 -99  7 -99  8 -99  end\_table  0. MolEntSor\_PPC2 (kJ.mol-1)  20. TemRefSor\_PPC2 (C)  pH-independent OptCofFre\_PPC2  152.900232018561 KomEql\_PPC2 (L.kg-1)  15290.0232018561 KomEqlMax\_PPC2 (L.kg-1)  1. ConLiqRef\_PPC2 (mg.L-1)  0.867 ExpFre\_PPC2 (-)  8.1E-5 PreVapRef\_PPC2 (Pa)  25. TemRefVap\_PPC2 (C)  1000000. SlbWatRef\_PPC2 (mg.L-1)  20. TemRefSlb\_PPC2 (C)  27. MolEntSlb\_PPC2 (kJ.mol-1)  95. MolEntVap\_PPC2 (kJ.mol-1)  0. CofDesRat\_PPC2 (d-1)  0. FacSorNeqEql\_PPC2 (-)  0. FacUpt\_PPC2 (-)  0.01 ThiAirBouLay (m)  Lumped OptDspCrp\_PPC2  1000000. DT50DspCrp\_PPC2 (d)  0.0001 FacWasCrp\_PPC2 (m-1)  20. TemRefDif\_PPC2 (C)  4.3E-5 CofDifWatRef\_PPC2 (m2.d-1)  0.43 CofDifAirRef\_PPC2 (m2.d-1)  \*-------------------------------------------------------------------------------  \* Section 6: Management section  \*-------------------------------------------------------------------------------  Oni\_2x902g\_BB14\_CHK ApplicationScheme  1.0 ZTgt (m)  0.0 ZEADTop (m)  0.2 ZEADBot (m)  2 DelTimEvt (a)  table Applications  22-May-1901 AppSolSur 0.812  27-May-1901 AppSolSur 0.812  end\_table  table TillageDates  end\_table  table interpolate CntSysEql (mg.kg-1)  0.0 0.0  50.0 0.0  end\_table  table interpolate CntSysNeq (mg.kg-1)  0.0 0.0  50.0 0.0  end\_table  No DepositionScheme  table FlmDep (kg.ha-1.d-1)  end\_table  \*-------------------------------------------------------------------------------  \* Section 7: Crop section  \*-------------------------------------------------------------------------------  HAMB-ONIONS CropCalendar  Yes RepeatCrops  Fixed OptLenCrp  LAI OptCov  table Crops  25-Apr 01-Sep onions1  end\_table  table CrpPar\_onions1  0.0 0.0 0.98 0.0 0.0  0.508 3.0 0.98 0.7 0.0  0.516 3.0 0.95 0.7 0.0  0.648 3.0 0.95 0.7 0.0  0.656 3.0 0.85 0.7 0.0  1.0 3.0 0.85 0.7 0.0  end\_table  table RootDensity\_onions1  0.0 1.0  1.0 1.0  end\_table  -10.0 HLim1\_onions1 (cm)  -25.0 HLim2\_onions1 (cm)  -500.0 HLim3U\_onions1 (cm)  -600.0 HLim3L\_onions1 (cm)  -16000.0 HLim4\_onions1 (cm)  70.0 RstEvpCrp\_onions1 (s.m-1)  0.39 CofExtDif\_onions1 (-)  1.0 CofExtDir\_onions1 (-)  0.0001 CofIntCrp\_onions1 (cm)  0.0 TemSumSta\_onions1 (C)  0.0 TemSumEmgAnt\_onions1 (C)  0.0 TemSumAntMat\_onions1 (C)  0.2 ZTensiometer\_onions1 (m)  0.0 FraCovStm\_onions1 (-)  -100.0 PreHeaIrrSta\_onions1 (cm)  15.0 IrgThreshold\_onions1 (mm)  \*-------------------------------------------------------------------------------  \* Section 8: Output control  \*-------------------------------------------------------------------------------  DaysFromSta DateFormat  Yes OptDelOutFiles  Yes PrintCumulatives  Yes LeachingReport  80.0 TargetPercentile (%)  No DrainageReport  No AirReport  No SoilReport  0.2 ThiLayPer (m)  table VerticalProfiles  end\_table  G12.4 RealFormat  table OutputDepths (m)  0.05  0.1  0.2  0.3  0.4  0.5  0.75  1.0  2.0  end\_table  No print\_AmaAppCrp  Yes print\_AmaAppSol  No print\_AmaCrp  No print\_AmaDra\_1  No print\_AmaDra\_2  No print\_AmaDra\_3  No print\_AmaDra\_4  No print\_AmaDra\_5  Yes print\_AmaEqlTgt  Yes print\_AmaEqlPro  No print\_AmaEqlTil  Yes print\_AmaErrMic  Yes print\_AmaForPro  No print\_AmaHarCrp  Yes print\_AmaNeqTgt  Yes print\_AmaNeqPro  No print\_AmaNeqTil  Yes print\_AmaSysTgt  Yes print\_AmaSysPro  No print\_AmaSysTil  Yes print\_AmaTraPro  Yes print\_AmaUptPro  No print\_AmaDspCrp  No print\_AmaWasCrp  No print\_ConGas  Yes print\_ConLiq  Yes print\_ConLiqLbo  Yes print\_ConLiqSatAvg  Yes print\_ConSys  No print\_ConSysEql  No print\_ConSysNeq  No print\_DelTimPrl  Yes print\_Eps  Yes print\_FacCrpEvp  No print\_FlmDepCrp  No print\_FlmGas  Yes print\_FlmGasVol  No print\_FlmLiq  Yes print\_FlmLiqInfSys  Yes print\_FlmLiqLbo  No print\_FlmSys  No print\_FlvLiq  No print\_FlvLiqDra\_3  No print\_FlvLiqDra\_4  No print\_FlvLiqDra\_5  Yes print\_FlvLiqEvpIntIrr  Yes print\_FlvLiqEvpIntPrc  Yes print\_FlvLiqEvpSol  Yes print\_FlvLiqEvpSolPot  Yes print\_FlvLiqIrr  Yes print\_FlvLiqLbo  No print\_FlvLiqGrw  Yes print\_FlvLiqTrp  Yes print\_FlvLiqTrpPot  No print\_FraCovCrp  Yes print\_GrwLev  No print\_LAI  No print\_PreHea  Yes print\_Theta  No print\_StoCap  No print\_FlvLiqGrwSur  No print\_VvrLiqDra  No print\_VvrLiqUpt  No print\_ZRoot  No print\_FlvLiqDra\_1  No print\_FlvLiqDra\_2  Yes print\_FlvLiqPrc  Yes print\_Tem  No print\_ConLiqDra\_1  No print\_ConLiqDra\_2  No print\_ConLiqDra\_3  No print\_ConLiqDra\_4  No print\_ConLiqDra\_5  No print\_ConLiqDra  No print\_ZPnd  No print\_AvoLiqSol  No print\_ConGas\_VPrf  No print\_ConLiq\_VPrf  No print\_ConSys\_VPrf  No print\_ConSysEql\_VPrf  No print\_ConSysNeq\_VPrf  No print\_PreHea\_VPrf  No print\_Tem\_VPrf  No print\_Theta\_VPrf  No print\_AvoLiqErr  No print\_FlvLiqInf  No print\_RstAirLam  No print\_AmaRunOff  No print\_AmaSolSur  No print\_VelWnd  No print\_TemAir  No print\_FlvLiqCanDrp  No print\_ConLiqPer  No print\_CntSysPer  No print\_ConLiqTWA2D  No print\_ConLiqTWA3D  No print\_ConLiqTWA4D  No print\_CntSysTWA2D  No print\_CntSysTWA3D  No print\_CntSysTWA4D  No print\_ConLiqTWA1D  No print\_CntSysTWA1D  Yes print\_ConLiqPer  Yes print\_CntSysPer  \*-------------------------------------------------------------------------------  \* End of FOCUSPEARL 5.5.5 input file  \*------------------------------------------------------------------------------- |

**PEARL output file (\*.sum) for propamocarb HCl following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha (5-d intervals), every 2nd year, scenario Hamburg (PUF = 0)**

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| \* ------------------------------------------------------------------------------  \* PEARL REPORT: Header  \* Results from the PEARL model (c) WENR, PBL and RIVM  \* PEARL kernel version : 3.2.20  \* SWAP kernel version : swap3237  \* PEARL created on : 14-Sep-2020  \*  \* PEARL was called from : FOCUSPEARL,version 5.5.5  \* Working directory : C:\Users\whalle\Documents\PesticideModels\FOCUSPEARL\_5.5.5\PearlDB\_PPC\174  \* Run ID : 174  \* Input file generated on : 02-04-2024  \* ------------------------------------------------------------------------------  \*  \* ExposureType : Groundwater  \* Scenario data subset : FOCUS Groundwater version 5  \* Location : HAMBURG  \* Meteo station : hamb-m  \* Soil type : HAMB-S\_Soil  \* Crop calendar : HAMB-ONIONS  \* Substance : PPC2  \* Application scheme : Oni\_2x902g\_BB14\_CHK  \* Deposition scheme : No  \* Irrigation scheme : No  \*  \* End of PEARL REPORT: Header  \* --------------------------------------------------------------------------------  \* Key to the annual water balances in the soil system  \* --------------------------------------------------------------------------------  \* DelLiq Net storage change of water in profile (m.a-1)  \* Prc Precipitation (m.a-1)  \* Irr Irrigation (m.a-1)  \* LeaLbo Seepage at the lower boundary (m.a-1)  \* LeaGrw Groundwater recharge (m.a-1)  \* LeaTgt Flux at lower boundary of the target layer (m.a-1)  \* EvpInt Evaporation of intercepted water (m.a-1)  \* SolAct Actual soil evaporation (m.a-1)  \* TrpAct Actual transpiration (m.a-1)  \* Dra Total discharge to drains and channels (m.a-1)  \* Dra\_1 Lateral discharge to primary system (m.a-1)  \* Dra\_2 Lateral discharge to secondary system (m.a-1)  \* Dra\_3 Lateral discharge to tertiary system (m.a-1)  \* Dra\_4 Lateral discharge to tile drains (m.a-1)  \* Dra\_5 Lateral discharge to surface drainage system (m.a-1)  \* RunOff Run-off (m.a-1)  \* EvpPnd Evaporation of ponded water (m.a-1)  \* CanDrp Canopy drip (m.a-1)  \* SolPot Potential soil evaporation (m.a-1)  \* TrpPot Potential transpiration (m.a-1)  \* Key to the annual mass balance of substance at the crop  \* --------------------------------------------------------------------------------  \* AmaAppCrp Areic mass applied to the crop canopy (kg.ha-1.a-1)  \* DelAmaCrp Change of areic mass at the crop canopy (kg.ha-1.a-1)  \* AmaVol Areic mass volatilised from the crop canopy (kg.ha-1.a-1)  \* AmaPen Areic mass penetrated into the plant tissue (kg.ha-1.a-1)  \* AmaTra Areic mass transformed at the crop canopy (kg.ha-1.a-1)  \* AmaDep Areic mass deposited at the crop canopy (kg.ha-1.a-1)  \* AmaDsp Areic mass dissipated at the crop canopy (kg.ha-1.a-1)  \* AmaWas Areic mass washed from the cropy canopy (kg.ha-1.a-1)  \* AmaHar Areic mass removed by harvesting (kg.ha-1.a-1)  \* Key to the annual mass balance of substance in the soil system  \* --------------------------------------------------------------------------------  \* AmaAppSol Areic mass applied to the soil system (kg.ha-1.a-1)  \* DelAma Change of mass in the soil system (kg.ha-1.a-1)  \* DelAmaEql Change of mass in the equilibrium domain (kg.ha-1.a-1)  \* DelAmaNeq Change of mass in the non-equilibrium domain (kg.ha-1.a-1)  \* AmaTra Areic mass transformed in the soil system (kg.ha-1.a-1)  \* AmaFor Areic mass formed in the soil system (kg.ha-1.a-1)  \* AmaUpt Areic mass taken-up from the soil system (kg.ha-1.a-1)  \* AmaDra Areic mass drained from the soil system (kg.ha-1.a-1)  \* AmaDra\_1 Areic mass drained to the primary system (kg.ha-1.a-1)  \* AmaDra\_2 Areic mass drained to the secunary system (kg.ha-1.a-1)  \* AmaDra\_3 Areic mass drained to the tertiary system (kg.ha-1.a-1)  \* AmaDra\_4 Areic mass drained to tube drains (kg.ha-1.a-1)  \* AmaDra\_5 Areic mass drained to surface drain system (kg.ha-1.a-1)  \* AmaDep Areic mass deposited at the soil surface (kg.ha-1.a-1)  \* AmaVol Areic mass volatized from the soil surface (kg.ha-1.a-1)  \* AmaLea Areic mass leached from the soil system (kg.ha-1.a-1)  \* AmaLeaAqf Areic mass leached to the deep acquifer (kg.ha-1.a-1)  \* Key to the output per summary period  \* --------------------------------------------------------------------------------  \* AmaLeaTgt Areic mass leached from the target layer (kg.ha-1)  \* FlvLeaTgt Volume of water leached from the target layer (m3.m-2)  \* ConLeaTgt Concentration in water leached from the target layer (ug.L-1)  \* --------------------------------------------------------------------------------  \* Annual water balance of the target layer  \* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  \* yr Identifier DelLiq Prc Irr LeaLbo LeaTgt EvpInt SolAct TrpAct Dra Dra\_1 Dra\_2 Dra\_3 Dra\_4 Dra\_5 Run EvpPnd CanDrp SolPot TrpPot  1901 BalWatTgt 0.0016 0.6680 0.0000 0.1813 0.1829 0.0000 0.2633 0.2201 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1890 0.3777 0.2201  1902 BalWatTgt -0.0034 0.6084 0.0000 0.1542 0.1002 0.0000 0.3004 0.2110 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1197 0.4320 0.2111  1903 BalWatTgt 0.0212 0.8215 0.0000 0.2017 0.2942 0.0000 0.2940 0.2121 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1742 0.3983 0.2121  1904 BalWatTgt -0.0003 0.7740 0.0000 0.2607 0.2599 0.0000 0.2749 0.2396 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1411 0.4076 0.2395  1905 BalWatTgt 0.0771 0.9993 0.0000 0.3906 0.4355 0.0000 0.2934 0.1934 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2483 0.3822 0.1933  1906 BalWatTgt -0.0300 0.9973 0.0000 0.5041 0.5003 0.0000 0.2943 0.2328 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1783 0.4005 0.2327  1907 BalWatTgt -0.0569 0.6024 0.0000 0.2883 0.1586 0.0000 0.2669 0.2339 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1138 0.3909 0.2338  1908 BalWatTgt -0.0221 0.5402 0.0000 0.1513 0.0901 0.0000 0.2329 0.2395 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0853 0.3944 0.2397  1909 BalWatTgt 0.0257 0.7865 0.0000 0.1457 0.2634 0.0000 0.2939 0.2036 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1427 0.3684 0.2035  1910 BalWatTgt 0.0228 0.7775 0.0000 0.2600 0.3123 0.0000 0.2545 0.1881 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1660 0.3377 0.1879  1911 BalWatTgt -0.0025 0.7315 0.0000 0.2795 0.2758 0.0000 0.2719 0.1865 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1717 0.3330 0.1863  1912 BalWatTgt 0.0522 0.9884 0.0000 0.4822 0.5105 0.0000 0.2499 0.1759 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.3118 0.3481 0.1758  1913 BalWatTgt -0.0368 0.9408 0.0000 0.5450 0.5313 0.0000 0.2694 0.1770 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2020 0.3466 0.1770  1914 BalWatTgt -0.0299 0.7008 0.0000 0.3102 0.2749 0.0000 0.2473 0.2085 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1661 0.3513 0.2085  1915 BalWatTgt -0.0017 0.8097 0.0000 0.3327 0.3187 0.0000 0.2731 0.2196 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0584 0.3487 0.2196  1916 BalWatTgt 0.0138 0.7808 0.0000 0.3163 0.3482 0.0000 0.2462 0.1726 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1525 0.3281 0.1725  1917 BalWatTgt -0.0092 0.7504 0.0000 0.2563 0.2462 0.0000 0.3042 0.2093 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1769 0.3784 0.2092  1918 BalWatTgt 0.0111 0.7801 0.0000 0.2425 0.2408 0.0000 0.2966 0.2316 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1385 0.4066 0.2317  1919 BalWatTgt 0.0030 0.8312 0.0000 0.3036 0.3239 0.0000 0.3206 0.1837 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1921 0.3693 0.1838  1920 BalWatTgt -0.0151 0.8407 0.0000 0.3912 0.3702 0.0000 0.2890 0.1966 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1707 0.3962 0.1966  1921 BalWatTgt -0.0150 0.6680 0.0000 0.2278 0.1995 0.0000 0.2633 0.2201 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1890 0.3777 0.2201  1922 BalWatTgt -0.0067 0.6084 0.0000 0.1638 0.1036 0.0000 0.3004 0.2110 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1197 0.4320 0.2111  1923 BalWatTgt 0.0210 0.8215 0.0000 0.2055 0.2944 0.0000 0.2940 0.2121 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1742 0.3983 0.2121  1924 BalWatTgt -0.0007 0.7740 0.0000 0.2617 0.2603 0.0000 0.2749 0.2396 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1411 0.4076 0.2395  1925 BalWatTgt 0.0770 0.9993 0.0000 0.3908 0.4356 0.0000 0.2934 0.1934 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2483 0.3822 0.1933  1926 BalWatTgt -0.0300 0.9973 0.0000 0.5041 0.5003 0.0000 0.2943 0.2328 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1783 0.4005 0.2327  1927 BalWatTgt -0.0762 0.5350 0.0000 0.2969 0.1413 0.0000 0.2302 0.2400 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0853 0.3937 0.2397  1928 BalWatTgt 0.0255 0.7865 0.0000 0.1712 0.2631 0.0000 0.2944 0.2036 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1427 0.3689 0.2035  1929 BalWatTgt 0.0209 0.7775 0.0000 0.2704 0.3142 0.0000 0.2545 0.1881 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1660 0.3377 0.1879  1930 BalWatTgt -0.0032 0.7315 0.0000 0.2811 0.2765 0.0000 0.2719 0.1865 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1717 0.3330 0.1863  1931 BalWatTgt 0.0522 0.9872 0.0000 0.4817 0.5098 0.0000 0.2494 0.1759 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.3118 0.3476 0.1758  1932 BalWatTgt -0.0369 0.9408 0.0000 0.5441 0.5303 0.0000 0.2704 0.1770 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2020 0.3477 0.1770  1933 BalWatTgt -0.0299 0.7008 0.0000 0.3101 0.2748 0.0000 0.2473 0.2085 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1661 0.3513 0.2085  1934 BalWatTgt -0.0017 0.8097 0.0000 0.3327 0.3187 0.0000 0.2731 0.2196 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0584 0.3487 0.2196  1935 BalWatTgt 0.0139 0.7808 0.0000 0.3164 0.3484 0.0000 0.2459 0.1726 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1525 0.3277 0.1725  1936 BalWatTgt -0.0094 0.7504 0.0000 0.2565 0.2461 0.0000 0.3044 0.2093 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1769 0.3786 0.2092  1937 BalWatTgt 0.0112 0.7801 0.0000 0.2423 0.2407 0.0000 0.2966 0.2316 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1385 0.4066 0.2317  1938 BalWatTgt 0.0030 0.8312 0.0000 0.3035 0.3239 0.0000 0.3206 0.1837 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1921 0.3693 0.1838  1939 BalWatTgt -0.0151 0.8384 0.0000 0.3896 0.3687 0.0000 0.2882 0.1966 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1707 0.3954 0.1966  1940 BalWatTgt -0.0151 0.6685 0.0000 0.2279 0.1995 0.0000 0.2640 0.2201 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1890 0.3783 0.2201  1941 BalWatTgt -0.0066 0.6084 0.0000 0.1636 0.1035 0.0000 0.3004 0.2110 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1197 0.4320 0.2111  1942 BalWatTgt 0.0210 0.8215 0.0000 0.2055 0.2944 0.0000 0.2940 0.2121 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1742 0.3983 0.2121  1943 BalWatTgt -0.0005 0.7740 0.0000 0.2621 0.2610 0.0000 0.2740 0.2396 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1411 0.4067 0.2395  1944 BalWatTgt 0.0768 0.9994 0.0000 0.3912 0.4358 0.0000 0.2935 0.1934 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2483 0.3827 0.1933  1945 BalWatTgt -0.0299 0.9973 0.0000 0.5040 0.5002 0.0000 0.2943 0.2328 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1783 0.4005 0.2327  1946 BalWatTgt -0.0569 0.6024 0.0000 0.2883 0.1586 0.0000 0.2669 0.2339 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1138 0.3909 0.2338  \* Annual water balance of the soil profile  \* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  \* yr Identifier DelLiq Prc Irr LeaLbo LeaGrw EvpInt SolAct TrpAct Dra Dra\_1 Dra\_2 Dra\_3 Dra\_4 Dra\_5 Run EvpPnd CanDrp SolPot TrpPot  1901 BalWatSol 0.0032 0.6680 0.0000 0.1813 0.1822 0.0000 0.2633 0.2201 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1890 0.3777 0.2201  1902 BalWatSol -0.0573 0.6084 0.0000 0.1542 0.1543 0.0000 0.3004 0.2110 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1197 0.4320 0.2111  1903 BalWatSol 0.1137 0.8215 0.0000 0.2017 0.2037 0.0000 0.2940 0.2121 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1742 0.3983 0.2121  1904 BalWatSol -0.0011 0.7740 0.0000 0.2607 0.2628 0.0000 0.2749 0.2396 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1411 0.4076 0.2395  1905 BalWatSol 0.1220 0.9993 0.0000 0.3906 0.3966 0.0000 0.2934 0.1934 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2483 0.3822 0.1933  1906 BalWatSol -0.0338 0.9973 0.0000 0.5041 0.5129 0.0000 0.2943 0.2328 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1783 0.4005 0.2327  1907 BalWatSol -0.1866 0.6024 0.0000 0.2883 0.2887 0.0000 0.2669 0.2339 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1138 0.3909 0.2338  1908 BalWatSol -0.0833 0.5402 0.0000 0.1513 0.1520 0.0000 0.2329 0.2395 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0853 0.3944 0.2397  1909 BalWatSol 0.1434 0.7865 0.0000 0.1457 0.1474 0.0000 0.2939 0.2036 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1427 0.3684 0.2035  1910 BalWatSol 0.0752 0.7775 0.0000 0.2600 0.2622 0.0000 0.2545 0.1881 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1660 0.3377 0.1879  1911 BalWatSol -0.0063 0.7315 0.0000 0.2795 0.2807 0.0000 0.2719 0.1865 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1717 0.3330 0.1863  1912 BalWatSol 0.0805 0.9884 0.0000 0.4822 0.4901 0.0000 0.2499 0.1759 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.3118 0.3481 0.1758  1913 BalWatSol -0.0506 0.9408 0.0000 0.5450 0.5528 0.0000 0.2694 0.1770 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2020 0.3466 0.1770  1914 BalWatSol -0.0652 0.7008 0.0000 0.3102 0.3116 0.0000 0.2473 0.2085 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1661 0.3513 0.2085  1915 BalWatSol -0.0158 0.8097 0.0000 0.3327 0.3354 0.0000 0.2731 0.2196 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0584 0.3487 0.2196  1916 BalWatSol 0.0458 0.7808 0.0000 0.3163 0.3194 0.0000 0.2462 0.1726 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1525 0.3281 0.1725  1917 BalWatSol -0.0193 0.7504 0.0000 0.2563 0.2572 0.0000 0.3042 0.2093 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1769 0.3784 0.2092  1918 BalWatSol 0.0094 0.7801 0.0000 0.2425 0.2443 0.0000 0.2966 0.2316 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1385 0.4066 0.2317  1919 BalWatSol 0.0233 0.8312 0.0000 0.3036 0.3053 0.0000 0.3206 0.1837 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1921 0.3693 0.1838  1920 BalWatSol -0.0361 0.8407 0.0000 0.3912 0.3933 0.0000 0.2890 0.1966 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1707 0.3962 0.1966  1921 BalWatSol -0.0433 0.6680 0.0000 0.2278 0.2289 0.0000 0.2633 0.2201 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1890 0.3777 0.2201  1922 BalWatSol -0.0669 0.6084 0.0000 0.1638 0.1638 0.0000 0.3004 0.2110 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1197 0.4320 0.2111  1923 BalWatSol 0.1099 0.8215 0.0000 0.2055 0.2076 0.0000 0.2940 0.2121 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1742 0.3983 0.2121  1924 BalWatSol -0.0021 0.7740 0.0000 0.2617 0.2639 0.0000 0.2749 0.2396 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1411 0.4076 0.2395  1925 BalWatSol 0.1218 0.9993 0.0000 0.3908 0.3968 0.0000 0.2934 0.1934 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2483 0.3822 0.1933  1926 BalWatSol -0.0338 0.9973 0.0000 0.5041 0.5130 0.0000 0.2943 0.2328 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1783 0.4005 0.2327  1927 BalWatSol -0.2318 0.5350 0.0000 0.2969 0.2991 0.0000 0.2302 0.2400 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0853 0.3937 0.2397  1928 BalWatSol 0.1174 0.7865 0.0000 0.1712 0.1729 0.0000 0.2944 0.2036 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1427 0.3689 0.2035  1929 BalWatSol 0.0647 0.7775 0.0000 0.2704 0.2726 0.0000 0.2545 0.1881 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1660 0.3377 0.1879  1930 BalWatSol -0.0078 0.7315 0.0000 0.2811 0.2823 0.0000 0.2719 0.1865 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1717 0.3330 0.1863  1931 BalWatSol 0.0803 0.9872 0.0000 0.4817 0.4896 0.0000 0.2494 0.1759 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.3118 0.3476 0.1758  1932 BalWatSol -0.0507 0.9408 0.0000 0.5441 0.5516 0.0000 0.2704 0.1770 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2020 0.3477 0.1770  1933 BalWatSol -0.0652 0.7008 0.0000 0.3101 0.3115 0.0000 0.2473 0.2085 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1661 0.3513 0.2085  1934 BalWatSol -0.0158 0.8097 0.0000 0.3327 0.3354 0.0000 0.2731 0.2196 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0584 0.3487 0.2196  1935 BalWatSol 0.0460 0.7808 0.0000 0.3164 0.3195 0.0000 0.2459 0.1726 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1525 0.3277 0.1725  1936 BalWatSol -0.0198 0.7504 0.0000 0.2565 0.2575 0.0000 0.3044 0.2093 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1769 0.3786 0.2092  1937 BalWatSol 0.0096 0.7801 0.0000 0.2423 0.2441 0.0000 0.2966 0.2316 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1385 0.4066 0.2317  1938 BalWatSol 0.0233 0.8312 0.0000 0.3035 0.3053 0.0000 0.3206 0.1837 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1921 0.3693 0.1838  1939 BalWatSol -0.0360 0.8384 0.0000 0.3896 0.3918 0.0000 0.2882 0.1966 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1707 0.3954 0.1966  1940 BalWatSol -0.0436 0.6685 0.0000 0.2279 0.2291 0.0000 0.2640 0.2201 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1890 0.3783 0.2201  1941 BalWatSol -0.0667 0.6084 0.0000 0.1636 0.1636 0.0000 0.3004 0.2110 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1197 0.4320 0.2111  1942 BalWatSol 0.1099 0.8215 0.0000 0.2055 0.2076 0.0000 0.2940 0.2121 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1742 0.3983 0.2121  1943 BalWatSol -0.0016 0.7740 0.0000 0.2621 0.2644 0.0000 0.2740 0.2396 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1411 0.4067 0.2395  1944 BalWatSol 0.1213 0.9994 0.0000 0.3912 0.3972 0.0000 0.2935 0.1934 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2483 0.3827 0.1933  1945 BalWatSol -0.0337 0.9973 0.0000 0.5040 0.5129 0.0000 0.2943 0.2328 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1783 0.4005 0.2327  1946 BalWatSol -0.1866 0.6024 0.0000 0.2883 0.2887 0.0000 0.2669 0.2339 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1138 0.3909 0.2338  \* Annual mass balance of substance at the crop canopy  \* ------------------------------------------------------------------------------------  \* yr Identifier AmaApp DelAmaCrp AmaDep AmaDsp AmaWas AmaHar  1901 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1902 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1903 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1904 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1905 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1906 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1907 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1908 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1909 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1910 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1911 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1912 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1913 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1914 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1915 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1916 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1917 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1918 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1919 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1920 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1921 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1922 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1923 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1924 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1925 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1926 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1927 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1928 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1929 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1930 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1931 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1932 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1933 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1934 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1935 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1936 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1937 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1938 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1939 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1940 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1941 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1942 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1943 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1944 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1945 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  1946 BalCrp\_PPC2 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  \* Annual mass balance (kg.ha-1) of compound PPC2 in the target layer  \* -------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  \* yr Identifier AmaAppSol DelAma DelAmaEql DelAmaNeq AmaTra AmaFor AmaUpt AmaDra AmaDra\_1 AmaDra\_2 AmaDra\_3 AmaDra\_4 AmaDra\_5 AmaDep AmaVol AmaLea ConLeaTgt  1901 BalTgt\_PPC2 1.624 0.1252E-01 0.1252E-01 0.000 1.611 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2844E-07 0.000 0.000  1902 BalTgt\_PPC2 0.000 -0.1250E-01 -0.1250E-01 0.000 0.1250E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5014E-11 0.000 0.000  1903 BalTgt\_PPC2 1.624 0.1063E-01 0.1063E-01 0.000 1.613 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2788E-07 0.000 0.000  1904 BalTgt\_PPC2 0.000 -0.1063E-01 -0.1063E-01 0.000 0.1063E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2975E-11 0.000 0.000  1905 BalTgt\_PPC2 1.624 0.1740E-01 0.1740E-01 0.000 1.607 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8081E-08 0.000 0.000  1906 BalTgt\_PPC2 0.000 -0.1740E-01 -0.1740E-01 0.000 0.1740E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1969E-11 0.000 0.000  1907 BalTgt\_PPC2 1.624 0.8358E-02 0.8358E-02 0.000 1.616 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2291E-07 0.000 0.000  1908 BalTgt\_PPC2 0.000 -0.8351E-02 -0.8351E-02 0.000 0.8351E-02 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4264E-11 0.000 0.000  1909 BalTgt\_PPC2 1.624 0.1373E-01 0.1373E-01 0.000 1.610 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3440E-07 0.000 0.000  1910 BalTgt\_PPC2 0.000 -0.1372E-01 -0.1372E-01 0.000 0.1372E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4606E-11 0.000 0.000  1911 BalTgt\_PPC2 1.624 0.1608E-01 0.1608E-01 0.000 1.608 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1122E-07 0.000 0.000  1912 BalTgt\_PPC2 0.000 -0.1609E-01 -0.1609E-01 0.000 0.1609E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5574E-11 0.000 0.000  1913 BalTgt\_PPC2 1.624 0.1374E-01 0.1374E-01 0.000 1.610 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3618E-08 0.000 0.000  1914 BalTgt\_PPC2 0.000 -0.1375E-01 -0.1375E-01 0.000 0.1375E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3456E-11 0.000 0.000  1915 BalTgt\_PPC2 1.624 0.1096E-01 0.1096E-01 0.000 1.613 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1652E-07 0.000 0.000  1916 BalTgt\_PPC2 0.000 -0.1096E-01 -0.1096E-01 0.000 0.1096E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3649E-11 0.000 0.000  1917 BalTgt\_PPC2 1.624 0.1267E-01 0.1267E-01 0.000 1.611 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1285E-07 0.000 0.000  1918 BalTgt\_PPC2 0.000 -0.1266E-01 -0.1266E-01 0.000 0.1266E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4071E-11 0.000 0.000  1919 BalTgt\_PPC2 1.624 0.1279E-01 0.1279E-01 0.000 1.611 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1817E-07 0.000 0.000  1920 BalTgt\_PPC2 0.000 -0.1280E-01 -0.1280E-01 0.000 0.1280E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2123E-11 0.000 0.000  1921 BalTgt\_PPC2 1.624 0.1172E-01 0.1172E-01 0.000 1.612 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2618E-07 0.000 0.000  1922 BalTgt\_PPC2 0.000 -0.1172E-01 -0.1172E-01 0.000 0.1172E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4551E-11 0.000 0.000  1923 BalTgt\_PPC2 1.624 0.1057E-01 0.1057E-01 0.000 1.613 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2768E-07 0.000 0.000  1924 BalTgt\_PPC2 0.000 -0.1058E-01 -0.1058E-01 0.000 0.1058E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2950E-11 0.000 0.000  1925 BalTgt\_PPC2 1.624 0.1740E-01 0.1740E-01 0.000 1.607 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8080E-08 0.000 0.000  1926 BalTgt\_PPC2 0.000 -0.1740E-01 -0.1740E-01 0.000 0.1740E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1969E-11 0.000 0.000  1927 BalTgt\_PPC2 1.624 0.1313E-01 0.1313E-01 0.000 1.611 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2224E-07 0.000 0.000  1928 BalTgt\_PPC2 0.000 -0.1312E-01 -0.1312E-01 0.000 0.1312E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6649E-11 0.000 0.000  1929 BalTgt\_PPC2 1.624 0.1573E-01 0.1573E-01 0.000 1.608 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2249E-07 0.000 0.000  1930 BalTgt\_PPC2 0.000 -0.1569E-01 -0.1569E-01 0.000 0.1569E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5375E-11 0.000 0.000  1931 BalTgt\_PPC2 1.624 0.9945E-02 0.9945E-02 0.000 1.614 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2166E-07 0.000 0.000  1932 BalTgt\_PPC2 0.000 -0.9982E-02 -0.9982E-02 0.000 0.9982E-02 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1048E-11 0.000 0.000  1933 BalTgt\_PPC2 1.624 0.8136E-02 0.8136E-02 0.000 1.616 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2392E-07 0.000 0.000  1934 BalTgt\_PPC2 0.000 -0.8143E-02 -0.8143E-02 0.000 0.8143E-02 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1751E-11 0.000 0.000  1935 BalTgt\_PPC2 1.624 0.1458E-01 0.1458E-01 0.000 1.609 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4571E-08 0.000 0.000  1936 BalTgt\_PPC2 0.000 -0.1456E-01 -0.1456E-01 0.000 0.1456E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5207E-11 0.000 0.000  1937 BalTgt\_PPC2 1.624 0.1344E-01 0.1344E-01 0.000 1.611 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2124E-07 0.000 0.000  1938 BalTgt\_PPC2 0.000 -0.1343E-01 -0.1343E-01 0.000 0.1343E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4785E-11 0.000 0.000  1939 BalTgt\_PPC2 1.624 0.1045E-01 0.1045E-01 0.000 1.614 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2595E-07 0.000 0.000  1940 BalTgt\_PPC2 0.000 -0.1047E-01 -0.1047E-01 0.000 0.1047E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3612E-11 0.000 0.000  1941 BalTgt\_PPC2 1.624 0.1502E-01 0.1502E-01 0.000 1.609 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3008E-07 0.000 0.000  1942 BalTgt\_PPC2 0.000 -0.1501E-01 -0.1501E-01 0.000 0.1501E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6256E-11 0.000 0.000  1943 BalTgt\_PPC2 1.624 0.7579E-02 0.7579E-02 0.000 1.616 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4553E-07 0.000 0.000  1944 BalTgt\_PPC2 0.000 -0.7588E-02 -0.7588E-02 0.000 0.7588E-02 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2411E-11 0.000 0.000  1945 BalTgt\_PPC2 1.624 0.6645E-02 0.6645E-02 0.000 1.617 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.9927E-08 0.000 0.000  1946 BalTgt\_PPC2 0.000 -0.6652E-02 -0.6652E-02 0.000 0.6652E-02 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1390E-11 0.000 0.000  \* Annual mass balance (kg.ha-1) of compound PPC2 in the soil profile  \* -------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  \* yr Identifier AmaAppSol DelAma DelAmaEql DelAmaNeq AmaTra AmaFor AmaUpt AmaDra AmaDra\_1 AmaDra\_2 AmaDra\_3 AmaDra\_4 AmaDra\_5 AmaDep AmaVol AmaLea AmaLeaAqf  1901 BalSol\_PPC2 1.624 0.1252E-01 0.1252E-01 0.000 1.611 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2844E-07 0.000 0.000  1902 BalSol\_PPC2 0.000 -0.1250E-01 -0.1250E-01 0.000 0.1250E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5014E-11 0.000 0.000  1903 BalSol\_PPC2 1.624 0.1063E-01 0.1063E-01 0.000 1.613 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2788E-07 0.000 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0.000 0.000 0.000 0.000 0.1390E-11 0.000 0.000  \* Intermediate target output for compound PPC2  \* ----------------------------------------------------------------------------------------------------------------------------------  \* yr Identifier AmaLea FlvLea ConLea  \* (kg/ha) (m) (ug/L)  1908 Target\_PPC2 0.0000 0.24870 0.0000  1910 Target\_PPC2 0.0000 0.57572 0.0000  1912 Target\_PPC2 0.0000 0.78627 0.0000  1914 Target\_PPC2 0.0000 0.80616 0.0000  1916 Target\_PPC2 0.0000 0.66691 0.0000  1918 Target\_PPC2 0.0000 0.48696 0.0000  1920 Target\_PPC2 0.0000 0.69416 0.0000  1922 Target\_PPC2 0.0000 0.30308 0.0000  1924 Target\_PPC2 0.0000 0.55467 0.0000  1926 Target\_PPC2 0.0000 0.93583 0.0000  1928 Target\_PPC2 0.0000 0.40435 0.0000  1930 Target\_PPC2 0.0000 0.59070 0.0000  1932 Target\_PPC2 0.0000 1.04012 0.0000  1934 Target\_PPC2 0.0000 0.59351 0.0000  1936 Target\_PPC2 0.0000 0.59459 0.0000  1938 Target\_PPC2 0.0000 0.56459 0.0000  1940 Target\_PPC2 0.0000 0.56819 0.0000  1942 Target\_PPC2 0.0000 0.39786 0.0000  1944 Target\_PPC2 0.0000 0.69681 0.0000  1946 Target\_PPC2 0.0000 0.65878 0.0000  \* Leaching summary per summary period:  \* ----------------------------------------------------------------------------------------------------------------------------------  \* Rank Identifier Percent DateSta DateEnd ConLeaTgt Year  \* (-) (%) (ug/L) (a)  1 ConLea\_PPC2 2.50 01-Jan-1907 31-Dec-1908 0.00 1907  2 ConLea\_PPC2 7.50 01-Jan-1909 31-Dec-1910 0.00 1909  3 ConLea\_PPC2 12.50 01-Jan-1911 31-Dec-1912 0.00 1911  4 ConLea\_PPC2 17.50 01-Jan-1913 31-Dec-1914 0.00 1913  5 ConLea\_PPC2 22.50 01-Jan-1915 31-Dec-1916 0.00 1915  6 ConLea\_PPC2 27.50 01-Jan-1917 31-Dec-1918 0.00 1917  7 ConLea\_PPC2 32.50 01-Jan-1919 31-Dec-1920 0.00 1919  8 ConLea\_PPC2 37.50 01-Jan-1921 31-Dec-1922 0.00 1921  9 ConLea\_PPC2 42.50 01-Jan-1923 31-Dec-1924 0.00 1923  10 ConLea\_PPC2 47.50 01-Jan-1925 31-Dec-1926 0.00 1925  11 ConLea\_PPC2 52.50 01-Jan-1927 31-Dec-1928 0.00 1927  12 ConLea\_PPC2 57.50 01-Jan-1929 31-Dec-1930 0.00 1929  13 ConLea\_PPC2 62.50 01-Jan-1931 31-Dec-1932 0.00 1931  14 ConLea\_PPC2 67.50 01-Jan-1933 31-Dec-1934 0.00 1933  15 ConLea\_PPC2 72.50 01-Jan-1935 31-Dec-1936 0.00 1935  16 ConLea\_PPC2 77.50 01-Jan-1937 31-Dec-1938 0.00 1937  17 ConLea\_PPC2 82.50 01-Jan-1939 31-Dec-1940 0.00 1939  18 ConLea\_PPC2 87.50 01-Jan-1941 31-Dec-1942 0.00 1941  19 ConLea\_PPC2 92.50 01-Jan-1943 31-Dec-1944 0.00 1943  20 ConLea\_PPC2 97.50 01-Jan-1945 31-Dec-1946 0.00 1945  \* ----------------------------------------------------------------------------------------------------------------------------------  \* PEARL REPORT: Leaching  \* Start date : 01-Jan-1901  \* End date : 31-Dec-1946  \* Target depth : 1.00 m  \* Biennial application to the soil surface at 22-May; dosage = 0.8120 kg.ha-1  \* Biennial application to the soil surface at 27-May; dosage = 0.8120 kg.ha-1  \* Leaching summary for compound PPC2  \* Molar mass (g.mol-1) : 224.7  \* Saturated vapour pressure (Pa) : 0.810E-04; measured at (C) 25.0  \* Solubility in water (mg.L-1) : 0.100E+07; measured at (C) 20.0  \* Half-life (d) in soil : 13.9; measured at (C) 20.0  \* Kom (coef. for sorption on soil organic matter) (L.kg-1) : 152.9  \* KF (overall sorption coefficient of the soil target layer) (L.kg-1) : 2.05  \* Freundlich exponent (-) : 0.87  \* Plant uptake factor (-) : 0.00  \* ----------------------------------------------------------------------------------------------------------------------------------  \* Period From To Water percolated Substance leached Average substance  \* number below target depth (mm) below target depth (kg/ha) concentration in water  \* at target depth (ug/L)  \* ----------------------------------------------------------------------------------------------------------------------------------  1 01-Jan-1907 31-Dec-1908 248.700 0.0000000 0.000  2 01-Jan-1909 31-Dec-1910 575.724 0.0000000 0.000  3 01-Jan-1911 31-Dec-1912 786.272 0.0000000 0.000  4 01-Jan-1913 31-Dec-1914 806.160 0.0000000 0.000  5 01-Jan-1915 31-Dec-1916 666.908 0.0000000 0.000  6 01-Jan-1917 31-Dec-1918 486.955 0.0000000 0.000  7 01-Jan-1919 31-Dec-1920 694.156 0.0000000 0.000  8 01-Jan-1921 31-Dec-1922 303.078 0.0000000 0.000  9 01-Jan-1923 31-Dec-1924 554.673 0.0000000 0.000  10 01-Jan-1925 31-Dec-1926 935.826 0.0000000 0.000  11 01-Jan-1927 31-Dec-1928 404.355 0.0000000 0.000  12 01-Jan-1929 31-Dec-1930 590.702 0.0000000 0.000  13 01-Jan-1931 31-Dec-1932 1040.125 0.0000000 0.000  14 01-Jan-1933 31-Dec-1934 593.508 0.0000000 0.000  15 01-Jan-1935 31-Dec-1936 594.588 0.0000000 0.000  16 01-Jan-1937 31-Dec-1938 564.590 0.0000000 0.000  17 01-Jan-1939 31-Dec-1940 568.189 0.0000000 0.000  18 01-Jan-1941 31-Dec-1942 397.862 0.0000000 0.000  19 01-Jan-1943 31-Dec-1944 696.814 0.0000000 0.000  20 01-Jan-1945 31-Dec-1946 658.780 0.0000000 0.000  \* The average concentration of PPC2 closest to the 80th percentile is 0.000000 ug/L  \* End of PEARL REPORT: Leaching  \* ----------------------------------------------------------------------------------------------------------------------------------  \* ----------------------------------------------------------------------------------------------------------------------------------  \* PEARL REPORT: Project\_Summary  \* Report\_type Leaching  \* Result\_text Concentration closest to the 80th percentile (ug/L)  \* Run\_Id 174  \* ExposureType Groundwater  \* Scenario data subset FOCUS Groundwater version 5  \* Location HAMBURG  \* Meteo\_station hamb-m  \* Soil\_type HAMB-S\_Soil  \* Crop\_calendar HAMB-ONIONS  \* Substance PPC2  \* Application\_scheme Oni\_2x902g\_BB14\_CHK  \* Irrigation\_scheme No  \* Deposition\_scheme No  \* Result\_PPC2 0.000000  \* End of PEARL REPORT: Project\_Summary  \* ----------------------------------------------------------------------------------------------------------------------------------  \*  \* The run time was 1 minutes and 18 seconds |

**PELMO**

**PELMO input file (echo.plm) for propamocarb HCl following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha (5-d intervals), every 2nd year, scenario Hamburg (PUF = 0)**

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| 1  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \* \*  \* PESTICIDE LEACHING MODEL \*  \* PELMO 5.0, DEC 2020 \*  \* FOCUSPELMO 6.6.4 \*  \* \*  \* \*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  DEVELOPED BY:  U.S. ENVIRONMENTAL PROTECTION AGENCY  OFFICE OF REASEARCH AND DEVELOPMENT  ATHENS ENVIRONMENTAL RESEARCH LABORATORY  ATHENS, GA. 30613  404-546-3138  AND  ANDERSON-NICHOLS  2666 EAST BAYSHORE RD.  PALO ALTO, CA. 94303  AND  FRAUNHOFER INSTITUTE  POSTFACH 1260  D-57377 SCHMALLENBERG  Tel + 49-2972-302-317  AND  SLFA Neustadt,  DEPARTMENT ECOLOGY  D-67435 NEUSTADT/WSTR.  Tel ++ 49-6321-671-422  PELMO 5.0, DEC 2020  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*HYDROLOGY DATAS\*\*\*\*\*\*\*\*\*\*\*\*\*\*  FOCUS GW Simulation: 6 warming-up years  YEAR 1: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:01  YEAR 2: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:02  YEAR 3: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:03  YEAR 4: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:04  YEAR 5: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:05  YEAR 6: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:06  YEAR 7: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:07  YEAR 8: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:08  YEAR 9: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:09  YEAR 10: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:10  YEAR 11: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:11  YEAR 12: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:12  YEAR 13: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:13  YEAR 14: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:14  YEAR 15: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:15  YEAR 16: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:16  YEAR 17: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:17  YEAR 18: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:18  YEAR 19: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:19  YEAR 20: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:20  YEAR 21: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:21  YEAR 22: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:22  YEAR 23: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:23  YEAR 24: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:24  YEAR 25: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:25  YEAR 26: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:26  YEAR 27: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:27  YEAR 28: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:28  YEAR 29: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:29  YEAR 30: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:30  YEAR 31: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:31  YEAR 32: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:32  YEAR 33: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:33  YEAR 34: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:34  YEAR 35: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:35  YEAR 36: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:36  YEAR 37: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:37  YEAR 38: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:38  YEAR 39: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:39  YEAR 40: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:40  YEAR 41: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:41  YEAR 42: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:42  YEAR 43: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:43  YEAR 44: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:44  YEAR 45: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:45  YEAR 46: Ver 4 Hamburg scenario (53.63 N, 10.00 E) Year:46  HYDROLOGY AND SEDIMENT RELATED PARAMETERS  -----------------------------------------  Variable time step  Pan Evaporation data are used.  LATTITUDE OF THE LOCATION: 53.50  CROPNAME GENERAL Onions  PAN COEFFICIENT FOR EVAPORATION (NO CROP) 1.000 1.000  PAN COEFFICIENT FOR EVAPORATION (MID SEASON) 1.000 0.9500  PAN COEFFICIENT FOR EVAPORATION (LATE SEASON) 1.000 0.7500  FLAG FOR ET (0=EVAP,1=TEMP,2=EVAP/TEMP) 0  DEPTH TO WHICH ET IS COMPUTED YEAR-ROUND [CM] 15.00  SNOW MELT COEFFICIENT [CM/DEG-C-DAY] 0.4600  INITIAL CROP NUMBER 1  INITIAL CROP CONDITION 1  NO CALCULATION OF RUNOFF EVENTS  CROP INFORMATION  ----------------  MAXIMUM IRRIGATION PERENNIAL SURFACE  INTERCEPT.MAXIMUM MINIMUM MAXIMUM FLG(0=NO) CROP CONDITION USLE COVER MANAGEMENT  CROP POTENTIAL ROOT DEPTH LAI LAI WEIGHT (1=CANOPY) (0=NO) AFTER AMC RUNOFF CURVE NUMBERS "C" FACTOR  NUMBER [CM] [CM] [-] [-] [KG/M\*\*2] 2=DRIP) (1=YES) HARVEST FALLOW CROP RESIDUE FALLOW CROP RESIDUE EXT. COEFF. SPRING POINT  I 72 53 72  33 0.0000 70.00 0.0000 3.000 0.0000 0 0 3 II 86 72 86 1.0000 1.0000 1.0000 0.39000  III 94 86 94  CROP ROTATION INFORMATION  -------------------------  CROP EMERGENCE MATURATION SENESCENCE HARVEST  NUMBER DATE DATE DATE DATE  Onions 25 APR., 1 30 JUNE, 1 18 JULY, 1 1 SEP., 1  Onions 25 APR., 2 30 JUNE, 2 18 JULY, 2 1 SEP., 2  Onions 25 APR., 3 30 JUNE, 3 18 JULY, 3 1 SEP., 3  Onions 25 APR., 4 30 JUNE, 4 18 JULY, 4 1 SEP., 4  Onions 25 APR., 5 30 JUNE, 5 18 JULY, 5 1 SEP., 5  Onions 25 APR., 6 30 JUNE, 6 18 JULY, 6 1 SEP., 6  Onions 25 APR., 7 30 JUNE, 7 18 JULY, 7 1 SEP., 7  Onions 25 APR., 8 30 JUNE, 8 18 JULY, 8 1 SEP., 8  Onions 25 APR., 9 30 JUNE, 9 18 JULY, 9 1 SEP., 9  Onions 25 APR., 10 30 JUNE, 10 18 JULY, 10 1 SEP., 10  Onions 25 APR., 11 30 JUNE, 11 18 JULY, 11 1 SEP., 11  Onions 25 APR., 12 30 JUNE, 12 18 JULY, 12 1 SEP., 12  Onions 25 APR., 13 30 JUNE, 13 18 JULY, 13 1 SEP., 13  Onions 25 APR., 14 30 JUNE, 14 18 JULY, 14 1 SEP., 14  Onions 25 APR., 15 30 JUNE, 15 18 JULY, 15 1 SEP., 15  Onions 25 APR., 16 30 JUNE, 16 18 JULY, 16 1 SEP., 16  Onions 25 APR., 17 30 JUNE, 17 18 JULY, 17 1 SEP., 17  Onions 25 APR., 18 30 JUNE, 18 18 JULY, 18 1 SEP., 18  Onions 25 APR., 19 30 JUNE, 19 18 JULY, 19 1 SEP., 19  Onions 25 APR., 20 30 JUNE, 20 18 JULY, 20 1 SEP., 20  Onions 25 APR., 21 30 JUNE, 21 18 JULY, 21 1 SEP., 21  Onions 25 APR., 22 30 JUNE, 22 18 JULY, 22 1 SEP., 22  Onions 25 APR., 23 30 JUNE, 23 18 JULY, 23 1 SEP., 23  Onions 25 APR., 24 30 JUNE, 24 18 JULY, 24 1 SEP., 24  Onions 25 APR., 25 30 JUNE, 25 18 JULY, 25 1 SEP., 25  Onions 25 APR., 26 30 JUNE, 26 18 JULY, 26 1 SEP., 26  Onions 25 APR., 27 30 JUNE, 27 18 JULY, 27 1 SEP., 27  Onions 25 APR., 28 30 JUNE, 28 18 JULY, 28 1 SEP., 28  Onions 25 APR., 29 30 JUNE, 29 18 JULY, 29 1 SEP., 29  Onions 25 APR., 30 30 JUNE, 30 18 JULY, 30 1 SEP., 30  Onions 25 APR., 31 30 JUNE, 31 18 JULY, 31 1 SEP., 31  Onions 25 APR., 32 30 JUNE, 32 18 JULY, 32 1 SEP., 32  Onions 25 APR., 33 30 JUNE, 33 18 JULY, 33 1 SEP., 33  Onions 25 APR., 34 30 JUNE, 34 18 JULY, 34 1 SEP., 34  Onions 25 APR., 35 30 JUNE, 35 18 JULY, 35 1 SEP., 35  Onions 25 APR., 36 30 JUNE, 36 18 JULY, 36 1 SEP., 36  Onions 25 APR., 37 30 JUNE, 37 18 JULY, 37 1 SEP., 37  Onions 25 APR., 38 30 JUNE, 38 18 JULY, 38 1 SEP., 38  Onions 25 APR., 39 30 JUNE, 39 18 JULY, 39 1 SEP., 39  Onions 25 APR., 40 30 JUNE, 40 18 JULY, 40 1 SEP., 40  Onions 25 APR., 41 30 JUNE, 41 18 JULY, 41 1 SEP., 41  Onions 25 APR., 42 30 JUNE, 42 18 JULY, 42 1 SEP., 42  Onions 25 APR., 43 30 JUNE, 43 18 JULY, 43 1 SEP., 43  Onions 25 APR., 44 30 JUNE, 44 18 JULY, 44 1 SEP., 44  Onions 25 APR., 45 30 JUNE, 45 18 JULY, 45 1 SEP., 45  Onions 25 APR., 46 30 JUNE, 46 18 JULY, 46 1 SEP., 46  Onions 25 APR., 47 30 JUNE, 47 18 JULY, 47 1 SEP., 47  Onions 25 APR., 48 30 JUNE, 48 18 JULY, 48 1 SEP., 48  Onions 25 APR., 49 30 JUNE, 49 18 JULY, 49 1 SEP., 49  Onions 25 APR., 50 30 JUNE, 50 18 JULY, 50 1 SEP., 50  Onions 25 APR., 51 30 JUNE, 51 18 JULY, 51 1 SEP., 51  Onions 25 APR., 52 30 JUNE, 52 18 JULY, 52 1 SEP., 52  Onions 25 APR., 53 30 JUNE, 53 18 JULY, 53 1 SEP., 53  Onions 25 APR., 54 30 JUNE, 54 18 JULY, 54 1 SEP., 54  Onions 25 APR., 55 30 JUNE, 55 18 JULY, 55 1 SEP., 55  Onions 25 APR., 56 30 JUNE, 56 18 JULY, 56 1 SEP., 56  Onions 25 APR., 57 30 JUNE, 57 18 JULY, 57 1 SEP., 57  Onions 25 APR., 58 30 JUNE, 58 18 JULY, 58 1 SEP., 58  Onions 25 APR., 59 30 JUNE, 59 18 JULY, 59 1 SEP., 59  Onions 25 APR., 60 30 JUNE, 60 18 JULY, 60 1 SEP., 60  Onions 25 APR., 61 30 JUNE, 61 18 JULY, 61 1 SEP., 61  Onions 25 APR., 62 30 JUNE, 62 18 JULY, 62 1 SEP., 62  Onions 25 APR., 63 30 JUNE, 63 18 JULY, 63 1 SEP., 63  Onions 25 APR., 64 30 JUNE, 64 18 JULY, 64 1 SEP., 64  Onions 25 APR., 65 30 JUNE, 65 18 JULY, 65 1 SEP., 65  Onions 25 APR., 66 30 JUNE, 66 18 JULY, 66 1 SEP., 66  Onions 25 APR., 67 30 JUNE, 67 18 JULY, 67 1 SEP., 67  Onions 25 APR., 68 30 JUNE, 68 18 JULY, 68 1 SEP., 68  Onions 25 APR., 69 30 JUNE, 69 18 JULY, 69 1 SEP., 69  Onions 25 APR., 70 30 JUNE, 70 18 JULY, 70 1 SEP., 70  Onions 25 APR., 71 30 JUNE, 71 18 JULY, 71 1 SEP., 71  Onions 25 APR., 72 30 JUNE, 72 18 JULY, 72 1 SEP., 72  Onions 25 APR., 73 30 JUNE, 73 18 JULY, 73 1 SEP., 73  Onions 25 APR., 74 30 JUNE, 74 18 JULY, 74 1 SEP., 74  Onions 25 APR., 75 30 JUNE, 75 18 JULY, 75 1 SEP., 75  Onions 25 APR., 76 30 JUNE, 76 18 JULY, 76 1 SEP., 76  Onions 25 APR., 77 30 JUNE, 77 18 JULY, 77 1 SEP., 77  Onions 25 APR., 78 30 JUNE, 78 18 JULY, 78 1 SEP., 78  Onions 25 APR., 79 30 JUNE, 79 18 JULY, 79 1 SEP., 79  Onions 25 APR., 80 30 JUNE, 80 18 JULY, 80 1 SEP., 80  Onions 25 APR., 81 30 JUNE, 81 18 JULY, 81 1 SEP., 81  Onions 25 APR., 82 30 JUNE, 82 18 JULY, 82 1 SEP., 82  Onions 25 APR., 83 30 JUNE, 83 18 JULY, 83 1 SEP., 83  Onions 25 APR., 84 30 JUNE, 84 18 JULY, 84 1 SEP., 84  Onions 25 APR., 85 30 JUNE, 85 18 JULY, 85 1 SEP., 85  Onions 25 APR., 86 30 JUNE, 86 18 JULY, 86 1 SEP., 86  Onions 25 APR., 87 30 JUNE, 87 18 JULY, 87 1 SEP., 87  Onions 25 APR., 88 30 JUNE, 88 18 JULY, 88 1 SEP., 88  Onions 25 APR., 89 30 JUNE, 89 18 JULY, 89 1 SEP., 89  Onions 25 APR., 90 30 JUNE, 90 18 JULY, 90 1 SEP., 90  Onions 25 APR., 91 30 JUNE, 91 18 JULY, 91 1 SEP., 91  Onions 25 APR., 92 30 JUNE, 92 18 JULY, 92 1 SEP., 92  Onions 25 APR., 93 30 JUNE, 93 18 JULY, 93 1 SEP., 93  Onions 25 APR., 94 30 JUNE, 94 18 JULY, 94 1 SEP., 94  Onions 25 APR., 95 30 JUNE, 95 18 JULY, 95 1 SEP., 95  Onions 25 APR., 96 30 JUNE, 96 18 JULY, 96 1 SEP., 96  Onions 25 APR., 97 30 JUNE, 97 18 JULY, 97 1 SEP., 97  Onions 25 APR., 98 30 JUNE, 98 18 JULY, 98 1 SEP., 98  Onions 25 APR., 99 30 JUNE, 99 18 JULY, 99 1 SEP., 99  Onions 25 APR., 100 30 JUNE, 100 18 JULY, 100 1 SEP., 100  Onions 25 APR., 101 30 JUNE, 101 18 JULY, 101 1 SEP., 101  Onions 25 APR., 102 30 JUNE, 102 18 JULY, 102 1 SEP., 102  Onions 25 APR., 103 30 JUNE, 103 18 JULY, 103 1 SEP., 103  Onions 25 APR., 104 30 JUNE, 104 18 JULY, 104 1 SEP., 104  Onions 25 APR., 105 30 JUNE, 105 18 JULY, 105 1 SEP., 105  Onions 25 APR., 106 30 JUNE, 106 18 JULY, 106 1 SEP., 106  Onions 25 APR., 107 30 JUNE, 107 18 JULY, 107 1 SEP., 107  Onions 25 APR., 108 30 JUNE, 108 18 JULY, 108 1 SEP., 108  Onions 25 APR., 109 30 JUNE, 109 18 JULY, 109 1 SEP., 109  Onions 25 APR., 110 30 JUNE, 110 18 JULY, 110 1 SEP., 110  Onions 25 APR., 111 30 JUNE, 111 18 JULY, 111 1 SEP., 111  Onions 25 APR., 112 30 JUNE, 112 18 JULY, 112 1 SEP., 112  Onions 25 APR., 113 30 JUNE, 113 18 JULY, 113 1 SEP., 113  Onions 25 APR., 114 30 JUNE, 114 18 JULY, 114 1 SEP., 114  Onions 25 APR., 115 30 JUNE, 115 18 JULY, 115 1 SEP., 115  Onions 25 APR., 116 30 JUNE, 116 18 JULY, 116 1 SEP., 116  Onions 25 APR., 117 30 JUNE, 117 18 JULY, 117 1 SEP., 117  Onions 25 APR., 118 30 JUNE, 118 18 JULY, 118 1 SEP., 118  Onions 25 APR., 119 30 JUNE, 119 18 JULY, 119 1 SEP., 119  Onions 25 APR., 120 30 JUNE, 120 18 JULY, 120 1 SEP., 120  MECHANICAL TREATMENTS  ---------------------  NO DATE DEPTH[CM]  \*\*\* PARAMETERS OF ACTIVE SUBSTANCE (PPC)\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  PESTICIDE UPPER INCORP. LOWER INCORP.  APPLICATION APPLIED DEPTH DEPTH FFIELD  DATE [KG/HA] [CM] [CM] [-]  22 MAY , 1 0.8120 0.0000 0.0000 0.0000  27 MAY , 1 0.8120 0.0000 0.0000 0.0000  22 MAY , 3 0.8120 0.0000 0.0000 0.0000  27 MAY , 3 0.8120 0.0000 0.0000 0.0000  22 MAY , 5 0.8120 0.0000 0.0000 0.0000  27 MAY , 5 0.8120 0.0000 0.0000 0.0000  22 MAY , 7 0.8120 0.0000 0.0000 0.0000  27 MAY , 7 0.8120 0.0000 0.0000 0.0000  22 MAY , 9 0.8120 0.0000 0.0000 0.0000  27 MAY , 9 0.8120 0.0000 0.0000 0.0000  22 MAY , 11 0.8120 0.0000 0.0000 0.0000  27 MAY , 11 0.8120 0.0000 0.0000 0.0000  22 MAY , 13 0.8120 0.0000 0.0000 0.0000  27 MAY , 13 0.8120 0.0000 0.0000 0.0000  22 MAY , 15 0.8120 0.0000 0.0000 0.0000  27 MAY , 15 0.8120 0.0000 0.0000 0.0000  22 MAY , 17 0.8120 0.0000 0.0000 0.0000  27 MAY , 17 0.8120 0.0000 0.0000 0.0000  22 MAY , 19 0.8120 0.0000 0.0000 0.0000  27 MAY , 19 0.8120 0.0000 0.0000 0.0000  22 MAY , 21 0.8120 0.0000 0.0000 0.0000  27 MAY , 21 0.8120 0.0000 0.0000 0.0000  22 MAY , 23 0.8120 0.0000 0.0000 0.0000  27 MAY , 23 0.8120 0.0000 0.0000 0.0000  22 MAY , 25 0.8120 0.0000 0.0000 0.0000  27 MAY , 25 0.8120 0.0000 0.0000 0.0000  22 MAY , 27 0.8120 0.0000 0.0000 0.0000  27 MAY , 27 0.8120 0.0000 0.0000 0.0000  22 MAY , 29 0.8120 0.0000 0.0000 0.0000  27 MAY , 29 0.8120 0.0000 0.0000 0.0000  22 MAY , 31 0.8120 0.0000 0.0000 0.0000  27 MAY , 31 0.8120 0.0000 0.0000 0.0000  22 MAY , 33 0.8120 0.0000 0.0000 0.0000  27 MAY , 33 0.8120 0.0000 0.0000 0.0000  22 MAY , 35 0.8120 0.0000 0.0000 0.0000  27 MAY , 35 0.8120 0.0000 0.0000 0.0000  22 MAY , 37 0.8120 0.0000 0.0000 0.0000  27 MAY , 37 0.8120 0.0000 0.0000 0.0000  22 MAY , 39 0.8120 0.0000 0.0000 0.0000  27 MAY , 39 0.8120 0.0000 0.0000 0.0000  22 MAY , 41 0.8120 0.0000 0.0000 0.0000  27 MAY , 41 0.8120 0.0000 0.0000 0.0000  22 MAY , 43 0.8120 0.0000 0.0000 0.0000  27 MAY , 43 0.8120 0.0000 0.0000 0.0000  22 MAY , 45 0.8120 0.0000 0.0000 0.0000  27 MAY , 45 0.8120 0.0000 0.0000 0.0000  PLANT PESTICIDE PARAMETERS  --------------------------  CROP INTERCEPTION: 1  (1=SOIL(NO), 2=LINEAR, 3=EXPONENTIAL, 4=MANUAL)  VOLATILIZATION PARAMETERS ACTIVE SUBSTANCE  --------------------------------------  TEMPERATURE [deg C] 20.00  HENRY-CONSTANT [Pa\*m3/mole] or [J/mole] 0.9413E-08  CALCULATED USING  VAPOUR PRESSURE [Pa] 0.4210E-04  MOLECULAR MASS [g/mole] 224.7  WATER SOLUBILITY [mg/l] 0.1005E+07  -------------------------------------  TEMPERATURE [deg C] 30.00  HENRY-CONSTANT [Pa\*m3/mole] or [J/mole] 0.1878E-07  CALCULATED USING  VAPOUR PRESSURE [Pa] 0.1680E-03  MOLECULAR MASS [g/mole] 224.7  WATER SOLUBILITY [mg/l] 0.2010E+07  -------------------------------------  Q10-Factor for Henry's constant: 1.995  DIFFUSION COEFF.AIR [cm2/d] 4303.  DEPTH OF SURFACE LAYER FOR VOLATILIZATION [CM] 0.1000  HENRY CONSTANT AT 20.0 deg C [-] 0.3862E-11  HENRY CONSTANT AT 30.0 deg C [-] 0.7451E-11  PLANT UPTAKE OF ACTIVE SUBSTANCE  --------------------------------  PLANT UPTAKE FACTOR (-) 0.0000  TRANSFORMATION PARAMETERS  -------------------------  DegT50 of the compound (d) at 20 °C at pF 2: 13.90  TRANSFORM. TRANSFORM. TEMP. Q10 MOISTURE-DURING-STUDY MOISTURE REL. TRANSFORM FORMATION  TO in EQ.Domaine OF STUDY VALUE ABSOLUTE RELATIVE EXPONENT IN NEQ DOMAIN FACTOR  [/DAY] [C] [-] [%] [%] [-] [-] [-]  BR/CO2 0.4987E-01 20.00 2.580 0.0000 100.0 0.7000 0.0000 1.000  SORPTION PARAMETERS  -------------------  --PARAMETERS TO CALCULATE KD-VALUES WITH KOC--  KOC [CM\*\*3/G] 263.6  FREUNDLICH-SORPTION EXPONENT 1/n 0.8670  [PEARL] FACTOR DESCRIBING NON-EQ-SITES EQ-SITES (-): 0.0000  [PEARL] DESORPTION RATE [1/D]: 0.0000  MIN. CONC FOR FREUNDLICH-SORPTION [æG/L] 0.1000E-01  DEPTH DEPENDEND SORPTION AND TRANSFORMATION PARAMETERS  ------------------------------------------------------  HORIZON KOC KD FR-EXP TRANSFORMATION RATE TO  BR/CO2  [CM\*\*3/G] [CM\*\*3/G] [-] [/DAY]  1 263.6 3.954 0.8670 0.4987E-01  2 263.6 2.636 0.8670 0.2494E-01  3 263.6 0.5272 0.8670 0.1496E-01  4 0.0000 0.0000 0.8670 0.1496E-01  5 0.0000 0.0000 0.8670 0.1496E-01  6 0.0000 0.0000 0.8670 0.0000  (H  Ver 4 Hamburg  Ver 4 Hamburg, onions  GENERAL SOIL INFORMATION  ------------------------  CORE DEPTH [CM] 200.0  TOTAL HORIZONS IN CORE 6  TOTAL COMPARTMENTS IN CORE 40  DPFLAG FLAG (0=DISP.COEFF.1=DISP.LENGTH) 1  THETA FLAG (0=INPUT,1=PRZM 2=PELMO) 0  PARTITION COEFFICIENT FLAG (0=INPUT,1=CALCULATED) 1  BULK DENSITY FLAG (0=INPUT,1=CALCULATED) 0  SOIL HYDRAULICS MODULE free drainage  COMPARTMENT DEPTH FLAG (0=const,1=depth dep.) 0  SOIL HORIZON INFORMATION  ------------------------  INITIAL FIELD WILTING  SOIL CAPACITY POINT  BULK WATER DRAINAGE WATER WATER DISPERSION ORGANIC BIODEG. PH  THICKNESS DENSITY CONTENT PARAMETER CONTENT CONTENT LENGTH CARBON FACTOR  HORIZON [CM] [G/CM\*\*3] [CM/CM] [/DAY] [CM/CM] [CM/CM] [CM] [%] [-] [-]  -------------------------------------------------------------------------------------------------------------  1 30.0000 1.5000 0.2920 2.3000 0.2920 0.0640 5.0000 1.5000 1.0000 6.4000  2 30.0000 1.6000 0.2770 2.3000 0.2770 0.0470 5.0000 1.0000 0.5000 5.6000  3 15.0000 1.5600 0.2290 2.3000 0.2290 0.0400 5.0000 0.2000 0.3000 5.6000  4 15.0000 1.6200 0.1630 2.3000 0.1630 0.0220 5.0000 0.0000 0.3000 5.7000  5 10.0000 1.6000 0.1630 0.0000 0.1630 0.0220 5.0000 0.0000 0.3000 5.5000  6 100.0000 1.6000 0.1630 0.0000 0.1630 0.0220 5.0000 0.0000 0.0000 5.5000  OUTPUT FILE PARAMETERS  ----------------------  OUTPUT TIME STEP LAYER FREQ  WATR YEAR 1  PEST YEAR 1  CONC YEAR 1  Total number of layers in the top meter: 21  PLOT FILE INFORMATION  ---------------------  NUMBER OF PLOTTING VARIABLES 15  TIMSER NAME MODE DEPTH(CM) ARGUMENT CONSTANT SUBSTANCE  PRSN TSER 0. 1 1.000 PESTIC  TETD TSER 0. 1 1.000 PESTIC  INFL TSER 100. 22 1.000 PESTIC  RUNF TSER 0. 1 1.000 PESTIC  THET TSER 0. 1 1.000 PESTIC  THET TSER 30. 7 1.000 PESTIC  TEMP TSER 0. 1 1.000 PESTIC  TEMP TSER 30. 7 1.000 PESTIC  TPAP TSER 0. 1 0.1000E+06 PESTIC  TDKF TSER 0. 1 0.1000E+06 PESTIC  TUPF TSER 0. 1 0.1000E+06 PESTIC  TPST TSER 5. 2 0.1000E+07 PESTIC  PFLX TSER 100. 21 0.1000E+06 PESTIC  RFLX TSER 0. 1 0.1000E+06 PESTIC  LEAC TSER 100. 21 0.1000E+10 PESTIC |

**PELMO output file (period.plm.) for propamocarb HCl following twofold application to onion (FOCUS crop: onions), BBCH 14-49 at 902 g a.s./ha (5-d intervals), every 2nd year, scenario Hamburg (PUF = 0)**

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| \*\*\* FOCUS PELMO 6. 6. 4 \*\*\* (PELMO 5.0)  Compound: (H ) Propamocarb HCl  Soil: Ver 4 Hamburg  Crop: Ver 4 Hamburg, onions      Results for ACTIVE SUBSTANCE (PPC) in the percolate at 1 m soil depth    Period Pesticide Flux Percolate Pesticide Conc.  (g/ha) (L/m²) (µg/L)  ------------------------------------------------------------  1 3.93E-08 283.700 0.000  2 5.09E-09 608.900 0.000  3 1.31E-09 789.200 0.000  4 9.77E-09 686.000 0.000  5 5.59E-09 724.000 0.000  6 1.01E-09 496.400 0.000  7 1.32E-09 620.200 0.000  8 5.32E-10 321.500 0.000  9 1.35E-10 599.300 0.000  10 4.03E-08 1015.60 0.000  11 6.36E-08 438.700 0.000  12 9.30E-09 580.100 0.000  13 1.26E-07 1006.50 0.000  14 1.69E-07 601.100 0.000  15 2.26E-08 549.400 0.000  16 1.25E-09 564.900 0.000  17 7.95E-10 525.600 0.000  18 4.07E-11 417.500 0.000  19 2.40E-10 810.600 0.000  20 3.40E-09 644.800 0.000  ------------------------------------------------------------  Total 5.00E-07 12284.0 0.000  80 Perc.(13/15) 1.48E-07 1555.90 0.000      Results for ACTIVE SUBSTANCE (PPC) in the percolate at the bottom of the simulated soil core    Period Pesticide Flux Percolate Pesticide Conc.  (g/ha) (L/m²) (µg/L)  ------------------------------------------------------------  1 4.44E-08 283.700 0.000  2 1.97E-08 608.900 0.000  3 1.15E-09 789.200 0.000  4 8.56E-09 686.000 0.000  5 6.24E-09 724.000 0.000  6 1.95E-09 496.400 0.000  7 8.98E-10 620.200 0.000  8 8.98E-10 321.500 0.000  9 2.72E-10 599.300 0.000  10 2.02E-08 1015.60 0.000  11 7.31E-08 438.700 0.000  12 1.90E-08 580.100 0.000  13 6.91E-08 1006.50 0.000  14 2.02E-07 601.100 0.000  15 4.61E-08 549.400 0.000  16 2.83E-09 564.900 0.000  17 8.37E-10 525.600 0.000  18 1.65E-10 417.500 0.000  19 1.24E-10 810.600 0.000  20 2.58E-09 644.800 0.000  ------------------------------------------------------------  Total 5.20E-07 12284.0 0.000  80 Perc.(15/13) 1.15E-07 1555.90 0.000 |

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