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| **REGISTRATION REPORT**  Part B  Section 8  Environmental Fate  Detailed summary of the risk assessment |
| Product code: -  Product name(s): **ULTRACENT 460 EC**  Chemical active substance(s):  Prothioconazole, 160 g/L Spiroxamine, 300 g/L |
| Central Zone  Zonal Rapporteur Member State: Poland |
| CORE ASSESSMENT  (authorization) |
| Applicant: XXXX  Submission date: August 2023, update December 2023  / July 2024 / October 2024  Evaluation date: October 2024  MS Finalisation date: February 2025 |

Version history

|  |  |
| --- | --- |
| When | What |
| August 2023 | First submission – application according to Article 33 in connection with Article 34 of Regulation (EC) No. 1107/2009 with reference to unprotected data of the product INPUT 460 EC authorized in Poland |
| December 2023 | The dossier was updated to include available information on the unprotected data of the reference product INPUT 460 EC (R-61/2011). |
| June 2024 | The dossier was updated based on comments from the evaluating entity |
| October 2024 | Supplementation of additional PECsw calculations based on zRMS request |
| October 2024 | zRMS finalised dRR evalution |

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# Fate and behaviour in the environment (KCP 9)

This application is submitted by XXXX to Poland for the first authorization of ULTRACENT 460 EC. ULTRACENT 460 EC is an emulsifiable concentrate containing 160 g/L prothioconazole and 300 g/L spiroxamine and is used as a fungicide in cereals. This application is based on the comparability with the reference product INPUT 460 EC of the authorization holder Bayer AG.

The application submitted herewith also relies on Article 34, in the form of an article 33 application. In the authorization procedure applied for herewith, Poland acts as zonal rapporteur member state (zRMS). There are no other concerned member states. Reference is made to the unprotected data and dossier submitted for INPUT 460 EC (R-61/2011, authorization holder Bayer AG) in Poland. Hence, exemption from the submission of studies is requested in accordance with Article 34 of Regulation (EC) No. 1107/2009. Additionally, data demonstrating the efficacy of the product as well as new studies on its physical-chemical properties is submitted in support of the application for authorization of ULTRACENT 460 EC.

The requested uses for ULTRACENT 460 EC are covered by those of the Polish reference product INPUT 460 EC. Formulation related data requirements are met by access to data previously submitted to the ministry for the identical and similar product INPUT 460 EC, reference to published data, and citing access to both Polish and EU review data now out of protection. The formulation of ULTRACENT 460 EC is supposed to be identical to that previously approved for INPUT 460 EC. For this reason, all formulation related data submitted by the original authorization holder for INUT 460 EC and held by the Polish ministry are cited as unprotected data in support of this current application. ~~Therefore, except for the additionally submitted studies performed with ULTRACENT 460 EC, no new data nor risk assessment are required and thus are not presented in the current dossier.~~

This application refers to data and risk assessments performed in accordance with the Uniform Principles of Regulation (EC) No. 1107/2009 provided for the product INPUT 460 EC.

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| **Review Comments:**  This is the application for registration plant protection product according to Article 33 of Regulation 1107/2009 based on unprotected data for compositionally comparable formulation (acc. Art. 34 of Reg. 1107/2009). ULTRACENT 460 EC is an emulsifiable concentrate containing 160 g/L prothioconazole and 300 g/L spiroxamine and is used as a fungicide in cereals.  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 8.1‑1: Critical use pattern of the formulated product

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Use-No. \* | Member state(s) | Crop and/or situation  (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I \*\* | Pests or Group of pests controlled  (additionally: developmental stages of the pest or pest group) | Application | | | | Application rate | | | PHI  (days) | Remarks:  e.g. g saf­ener/ syner­gist per ha | Conclusion |
| Method / Kind | Timing / Growth stage of crop & season | Max. number  a) per use  b) per crop/ season | Min. interval between applications (days) | kg or L product/ha  a) max. rate per appl.  b) max. total rate per crop/season | g or kg as/ha  a) max. rate per appl.  b) max. total rate per crop/season | Water L/ha  min/max | Groundwater |
| Zonal uses (field or outdoor uses, certain types of protected crops) | | | | | | | | | | | | | | |
| 1 | PL | Wheat (winter) | F | Eyespot (PSDCHE), Fusarium sp. (FUSASP), powdery mildew (ERYSGR) | Foliar spray | BBCH 30-31 | 1. 1 2. 1 | - | 1. 0.75 2. 0.75 | 1. 0.12 kg prothioconazole/ha + 0.225 kg spiroxamine/ha 2. 0.12 kg prothioconazole/ha + 0.225 kg spiroxamine/ha | 200-400 | 35 |  | A |
| 2 | PL | Wheat (winter) | F | Eyespot (PSDCHE), Fusarium sp. (FUSASP), powdery mildew (ERYSGR) | Foliar spray | BBCH 31-37 | 1. 1 2. 1 | - | 1. 1.0 2. 1.0 | 1. 0.16 kg prothioconazole/ha + 0.3 kg spiroxamine/ha 2. 0.16 kg prothioconazole/ha + 0.3 kg spiroxamine/ha | 200-400 | 35 |  | A |
| 3 | PL | Wheat (winter and spring) | F | Rust species (PUCCSP),  Brown rust (PUCCRE)  Powdery mildew (ERYSGR)  Septoria leaf spot(SEPTTR)  Glume blotch (LEPTNO)  Tan spot(PYRNTR) | Foliar spray | BBCH 30-59 | 1. 1 2. 1 | - | 1. 1.0 2. 1.0 | 1. 0.16 kg prothioconazole/ha + 0.3 kg spiroxamine/ha 2. 0.16 kg prothioconazole/ha + 0.3 kg spiroxamine/ha | 200-400 | 35 |  | A |
| 4 | PL | Barley (winter and spring) | F | Eyespot (PSDCHE)  Brown rust (PUCCHD)  Powdery mildew (ERYSGR)  Rhynchosporium (RHYNSE)  Net blotch (PYRNTE)  Fusarium stem blight(FUSASP*)* | Foliar spray | BBCH 30-51 | 1. 1 2. 1 | - | 1. 1.0 2. 1.0 | 1. 0.16 kg prothioconazole/ha + 0.3 kg spiroxamine/ha 2. 0.16 kg prothioconazole/ha + 0.3 kg spiroxamine/ha | 200-400 | 35 |  | A |
| Interzonal uses (use as seed treatment, in greenhouses (or other closed places of plant production), as post-harvest treatment or for treatment of empty storage rooms) | | | | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Minor uses according to Article 51 (zonal uses) | | | | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Minor uses according to Article 51 (interzonal uses) | | | | | | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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

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

Explanation for column 15 “Conclusion”

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

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Use-No. \* | Member state(s) | Crop and/or situation  (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I \*\* | Pests or Group of pests controlled  (additionally: 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  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 |
|  | EU  North  South | wheat, rye, triticale | F | Rusts, Eyespot, Fusarium spp., Powd. Mildew, Rhynchospor., Septoria, | Overall spray | start 26-29 up to BBCH69 (interval 14 - 21 d)# | 1 – 3 # | ref. to growth stage |  | 0.2 | 200-400 | 35 | # timing , no. of applic. depends on national conditions |
|  | EU  North  South | barley, oat | F | Rusts, Eyespot, Pyren. teres, Powd. Mildew, Fusarium spp., Rhynchospor. | Overall spray | start 30 up to BBCH 61  (interval 14 - 21 d)# | 1 – 2 # | ref. to growth stage |  | 0.2 | 200-400 | 35 | # timing , no. of applic. depends on national conditions |
|  | EU  North  South | rape | F | Sclerotinia, Botrytis, Alternaria, Leptosphaeria | Overall spray | start BBCH 53  (interval 14 - 28 d)# | 1 – 2 # | ref. to growth stage |  | 0.175 | 200-400 | 56 | # timing , no. of applic. depends on national conditions |

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

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

Table 8.1‑3: Assessed (critical) uses during approval of spiroxamine concerning the Section Environmental Fate

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| Use-No. \* | Member state(s) | Crop and/or situation  (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I \*\* | Pests or Group of pests controlled  (additionally: 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  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 |
|  | EU - N  EU - S | Wheat &  Triticale | F | Foliar & ear diseases | Field crop sprayer | BBCH 30 to  BBCH 69 | 2 | 14 to 21 days |  | 200  +  375 | 200-400 |  | \*\* depending on  national request: either  PHI in days or growth  stage at the latest  application |
|  | EU - N  EU - S | Rye | F | Foliar & ear diseases | Field crop sprayer | BBCH 30 to  BBCH 61 –  69# | 2 | 14 to 21 days |  | 200  +  375 | 200-400 |  | # may vary according to  national conditions |
|  | EU - N  EU - S | Barley &  Oat | F | Foliar & ear diseases | Field crop sprayer | BBCH 30 to  BBCH 61 | 2 | 14 to 21 days |  | 200  +  375 | 200-400 |  |  |

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

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

## Metabolites considered in the assessment

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

A list of metabolites found in environmental compartments is provided below. The need for conducting a metabolite-specific risk assessment in the context of the evaluation of ULTRACENT 460 EC is indicated in the table.

Table 8.2‑1 Metabolites of Prothioconazole

| Metabolite | Chemical structure | Molar mass | Maximum occurrence in compartments | Risk assessment required? |
| --- | --- | --- | --- | --- |
| Prothioconazole-S-methyl  (M01) |  | 358.8 g/mol | Soil: 14.6 % | PECgw  PECsoil |
| Prothioconazole-desthio  (M04) |  | 312.2 g/mol | Soil: 57.1 %  Water: 32.2 %  Sediment: 26.9 % | PECgw  PECsoil  PECsw |
| 1, 2, 4-triazole  (M13) |  | 69.065 g/mol | Water~~/Sediment:~~ 32.7 %  Sediment (max. 6.1 % at 121d)  Water/sediment system (max. 41.8 % at 121d) | PECsw |

Table 8.2‑2 Metabolites of Spiroxamine

| Metabolite | Chemical structure | Molar mass | Maximum occurrence in compartments | Risk assessment required? |
| --- | --- | --- | --- | --- |
| M01  (KWG 4168-desethyl) |  | 269.4 | Soil: 8.8 % (field > 10 %)  W/S system: < 10 % | PECsoil  PECgw  PECsw/sed |
| M02  (KWG 4168-despropyl) |  | 255.4 | Soil: 45 %  W/S system: 5.8 % | PECsoil  PECgw  PECsw/sed |
| M03  (KWG 4168-N-oxide) |  | 313.5 | Soil: 7.9 %  Water: 11.3 %  Sediment: 1.5 % | PECsoil  PECgw  PECsw/sed |
| M06  (KWG 4168-acid) |  | 327.5 | Water: 31.3 % | PECsw/sed |

## Rate of degradation in soil (KCP 9.1.1)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

*~~The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:~~*

~~In terms of fate and behaviour in the environment, there was no need to carry out tests (detailed in sections: 9.1.1. and 9.1.2. of Annex IA) for the formulation of Input 460 EC, as the formulation is not characterised by a slow release of the active substance into the environment, which means that properties such as degradation rate and mobility will not change.~~

~~The applicant submitted a new report on the calculation of the degradation kinetics of spiroxamine in soils under field conditions - H. Schafer, J. Krohn (2000) "Dissipation of Spiroxamine in Soils - Survey of Results from Studies Conducted under Field and Laboratory Conditions", Bayer AG, Report-No.: MR-251/00, prepared for the determination of DT~~~~50~~ ~~values used for model calculations of predicted environmental concentrations of this substance in soil, groundwater and surface water. The report contains the results of calculating DT~~~~50~~ ~~values using the SFO kinetic model (simple 1st order kinetics) for aerobic degradation studies in soil under laboratory conditions and disappearance under field conditions, which have already been assessed in the process of including the active substance in Annex I of Directive 91/414/EEC. The report was assessed for compliance with the applicable guidelines and accepted, and the results contained therein used for further evaluation.~~

### Aerobic degradation in soil (KCP 9.1.1.1)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

#### Prothioconazole and its metabolites

Table 8.3‑1: Summary of aerobic degradation rates for Prothioconazole - laboratory studies

| Prothioconazole, Laboratory studies, dark aerobic conditions | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | pH | T  (oC) | MWHC % | Org. C% | DT50 (d) | DT90 (d) | Kinetic model | Evaluated on EU level y Reference |
| Laacher Hof | sandy loam | 7.2 | 20 | 48 | 2.0 | 0.07  0.2\* | 5.3 | FOMC | EFSA scientific report (2007) 106, 1-98  Final Add. to DAR Vol. 3 B.8 (2007) |
| Stanley | silty clay loam | 5.9 | 20 | 48 | 1.66 | 0.7  1.5\* | 78.2 | FOMC |
| Höfchen | silt | 7.1 | 20 | 1/3 bar of 75 % | 2.14 | 0.30  0.7\* | 0.99 | 1st SFO |
| Byromville | loamy sand | 6.8 | 20 | 1/3 bar of 75 % | 0.79 | 1.27  2.8\* | 4.22 | 1st SFO |
| Geometric mean/Median (n=x) | | | | | |  |  |  |  |

\*equivalent DT50 at 10°C using the Arrhenius equation

Table 8.3‑2: Summary of aerobic degradation rates for transformation products - laboratory studies

| **Dark aerobic conditions** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil name** | **Soil type** | **Par / met app.** | **pH** | **T**  **(°C)** | **MWHC**  **%** | **DT50 (d)** | **DT90 (d)** | **Kinetic model** | **Evaluated on EU level y Reference** |
| Höfchen | Loamy silt | Prothioconazole-S-methyl | 7.3 | 20 | 40 | 5.9  12.9\* | 19.6 | 1st SFO | EFSA scientific report (2007) 106, 1-98  Final Add. to DAR Vol. 3 B.8 (2007) |
| Laacher Hof | Loamy silt | 7.9 | 20 | 40 | 27.2  59.6\* | 90.2 | 1st SFO |
| Laacher Hof | Sandy loam | 7.2 | 20 | 40 | 8.2  18.0\* | 27.2 | 1st SFO |
| Stanley | Silt clay | 6.3 | 20 | 40 | 46.0  100.9\* | 153 | 1st SFO |
| Höfchen | Loamy silt | Prothioconazole-desthio | 7.3 | 20 | 40 | 34.0  74.5\* | 113.0 | 1st SFO |
| Laacher Hof | Loamy silt | 7.9 | 20 | 40 | 29.6  64.9\* | 98.3 | 1st SFO |
| Laacher Hof | Sandy loam | 7.2 | 20 | 40 | 7.0  15.3\* | 23.2 | 1st SFO |
| Stanley | Silt clay | 6.3 | 20 | 40 | 18.6  40.8\* | 61.9 | 1st SFO |

\* equivalent DT50 at 10°C using the Arrhenius equation

#### Spiroxamine and its metabolite

Laboratory degradation studies and a field studies with Spiroxamine have been performed and presented in the EFSA Journal 2010;8(10)1719.

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

| Spiroxamine - laboratory studies, aerobic conditions | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | pH | T  [°C] | MWHC  [%] | DT50  [d] | DT90  [d] | DT50  [d] (20°C  pF2/10kPa) | St.  (r2) | Method of calculation | Evaluated on EU level y/n/ Reference |
| Silt loam | 8.1 | 20 | 40 | \* | \* | -- | -- | -- | y / EFSA Journal 2010;8(10):1719 |
| Sandy loam | 6.5 | 20 | 40 | \* | \* | -- | -- | -- |
| Sandy loam | 7.1 | 20 | 48 | \* | \* | -- | -- | -- |
| Loamy sand | 6.3 | 20 | 40 | \* | \* | -- | -- | -- |
| Loam | 8.7 | 20 | 15 | \* | \* | -- | -- | -- |
| Silt loam | 7.0 | 20 | 55 | 22.1 | 73\*\* | -- | Chi2: 13.2 | SFO |
| Geometric mean | | | |  |  |  | | | |
| pH-dependency: n | | | |  | | | | | |

\* Data available but not fully validated because of the lacking of information on the goodness of fit (visual and statistical assessment) of the kinetic analysis.

\*\* Calculated (DT90 = DT50\*3.32)

**Table 8.3‑4: Summary of aerobic degradation rates for the metabolite M03 - laboratory studies**

| Metabolites | Aerobic conditions: no laboratory studies performed, because all metabolites were approximately 7-9 % of the applied radioactivity | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | X1 | pH | t. °C / % MWHC | DT50 / DT90 | f.f. Kdp/Kf | DT50  [d] 20°C  pF2/10kPa | St.  (r2) | Method of calculation |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Geometric mean | | | |  | | | | |

### Anaerobic degradation in soil (KCP 9.1.1.1)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

The anaerobic degradation of spiroxamine was only investigated in a water/sediment study. The degradation under anaerobic conditions showed, that no additional metabolites were formed compared with those occurring under aerobic conditions.

## Field studies (KCP 9.1.1.2)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

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

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC~~.

#### Prothioconazole and its metabolites

The rate of degradation in soil of prothioconazole in field studies was evaluated during the Annex I Inclu-

sion. No additional studies have been performed. The agreed EU endpoints are presented below.

Table 8.4‑1: Summary of aerobic degradation rates for Prothioconazole and metabolite Prothioconazole-desthio (M04) - field studies

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Cropped or bare** | **Actual temperatures** | | | | | | **Evaluated on EU level y Reference** |
| **Prothioconazole** | | | **Prothioconazole-desthio (M04)** | | |
| **DT50**  **(days)** | **DT90**  **(days)** | **r2** | **DT50**  **(days)** | **DT90**  **(days)** | **r2** | EFSA scientific report (2007) 106, 1-98  Final Add. to DAR Vol. 3 B.8 (2007) |
| Germany | Bare | 1.9 | 6.4 | 1.00 | 16.3 a) | 54.1 a) | 0.98 |
| Great Britain | Bare | 1.6 | 5.5 | 1.00 | 54.7 | 182 | 0.96 |
| France (North) | Bare | 1.3 | 4.4 | 1.00 | 47.6 | 158 | 0.94 |
| Great Britain | Cropped | 2.8 | 9.3 | 0.99 | 50.2 | 167 | 0.91 |
| France (North) | Cropped | 1.4 | 4.5 | 1.00 | 36.8 | 122 | 0.93 |
| France (South) | Cropped | 1.7 | 5.6 | 0.99 | 72.3 | 240 | 0.91 |
| Italy | Cropped | 1.6 | 5.4 | 0.99 | 30.5 | 101 | 0.98 |
| Germany | Bare | 1.5 | 5.1 | 1.00 | 27.9 a) | 92.6 a) | 0.98 |

a) without day 0 samples, because the maximum concentrations of M04 were at the later sampling dates

#### Spiroxamine and its metabolites

Field studies with Spiroxamine have been performed and presented in the EFSA Journal 2010;8(10)1719.

**Triggering endpoints**

Table 8.4‑2: Summary of aerobic degradation rates for Spiroxamine – field studies (best fit, not normalised)

| **Spiroxamine – Field studies, aerobic conditions** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **Location** | **pH** | **Depth [cm]** | DT50  **[d]** | DT90  **[d]** | **St. (chi2)** | DT50  **[d]**  **non- norm.** | **Method of calculation** | **Evaluated on EU level y/n/ Reference** |
| **Northern Europe** | | | | | | | | | |
| Silt loam (bare soil) | Höfchen, DE | 6.5 | 0-10 | 13.3 | 186.2 | 8.9 | 56.1\*\* | FOMC | y / EFSA Journal 2010;8(10):1719 |
| Loam (vegetation) | Laacher Hof, DE | 6.8 | 0-10 | 37.2 | 176.0 | 8.5 | 59.8+ | DFOP |
| Sandy loam  (vegetation) | Thurston, UK | 7.5 | 0-10 | 6.8 | 466.2 | 13.4 | 79.7+ | FOMC |
| Loamy sand  (vegetation) | Pakenham, UK | 7.3 | 0-10 | 2.9\* | 228.3\* | 16.8 | 68.8\*\* | FOMC |
| Silt loam (bare soil) | Höfchen, DE | 6.4 | 0-10 | 50.0 | 316.1 | 5.9 | 95.2++ | FOMC |
| Sandy loam (bare soil) | Laacher Hof, DE | 6.6 | 0-10 | 17.0 | 159.4 | 10.6 | 48.0\*\* | FOMC |
| Sandy loam (bare soil) | An der Scheune, DE | 5.9 | 0-10 | 10.6 | 1796 | 10.0 | 123.8+ | FOMC |
| Silt loam (bare soil) | Swisttal-Hohn, DE | 6.7 | 0-10 | 8.2 | 81.8 | 6.2 | 24.6\*\* | FOMC |
| Clay loam / silt loam (bare soil) | Albig, DE | 7.8 | 0-10 | 6.2 | 65.7 | 7.6 | 19.8\*\* | FOMC |
| Sandy loam  (spring barley) | Thurston, UK | 7.4 | 0-10 | 1.6 | 127.5 | 5.5 | 145.3+  1) | DFOP |
| Sandy loam  (spring barley) | Thurston, UK | 7.4 | 0-10 | 7.8 | 378.0 | 6.5 | DFOP |
| Sandy loam  (spring barley) | Pakenham, UK | 7.0 | 0-10 | 9.3 | 207.9 | 7.8 | 113.8+  1) | DFOP |
| Sandy loam  (spring barley) | Pakenham, UK | 7.0 | 0-10 | 11.8 | 255.5 | 9.3 | DFOP |
| Silt loam  (spring wheat) | Touffreville, FR | 7.2 | 0-10 | 5.9 | 48.3 | 4.2 | 14.5\*\* | FOMC |
| **Southern Europe** | | | | | | | | | |
| Silty loamy sand (wine) | Laudun, FR | 7.7 | 0-10 | 1.6 | 72.9 | 10.6 | 22.0\*\* | FOMC | y / EFSA Journal 2010;8(10):1719 |
| Weak loamy sand (bare soil) | Nogarole Rocca, IT | 7.7 | 0-10 | 4.0 | 42.9 | 3.6 | 22.7+ | DFOP |
| Silty loamy sand (bare soil) | Laudun, FR | 7.7 | 0-10 | 7.4 \* | 158.1 \* | 18.0 | 75.3+ | DFOP |
| Silt loam (wine) | Filetto, IT | 7.6 | 0-10 | 71.5 | 237.7 | 17.2 | 71.5 | SFO |
| Geometric mean / median | | | | 8.9 / 8.0 | 153 / 176 |  | 57 / 69.4 |  |  |

\* Not included in the geometric mean and median calculations due to poor fitting

\*\* Back-calculated from FOMC (DT90 / 3.32)

+ slow-phase DFOP; ++ = slow-phase HS

1) Calculated as replicates

**Modelling endpoints**

Table 8.4‑3: Summary of aerobic degradation rates for Spiroxamine – field studies (normalised date for use in modelling)

| **Spiroxamine – Field studies, aerobic conditions, normalised** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **Location** | **pH** | **Depth [cm]** | DT50  **[d]** | DT90  **[d]** | **St. (chi2)** | DT50  **[d]**  **norm.** | **Method of calculation** | **Evaluated on EU level y/n/ Reference** |
| **Northern Europe** | | | | | | | | | |
| Silt loam (bare soil) | Höfchen, DE | 6.5 | 0-10 | -- | -- | 11.3 | 36.5+ | SFO | y / EFSA Journal 2010;8(10):1719 |
| Loam (vegetation) | Laacher Hof, DE | 6.8 | 0-10 | -- | -- | 7.0 | 38.7+ | SFO |
| Sandy loam  (vegetation) | Thurston, UK | 7.5 | 0-10 | -- | -- | 6.8 | 54.2+ | SFO |
| Loamy sand  (vegetation) | Pakenham, UK | 7.3 | 0-10 | -- | -- | 8.9 | 51.7+ | SFO |
| Silt loam (bare soil) | Höfchen, DE | 6.4 | 0-10 | -- | -- | 5.2 | 68.6+ | SFO |
| Sandy loam (bare soil) | Laacher Hof, DE | 6.6 | 0-10 | -- | -- | 9.8 | 29.9+ | SFO |
| Sandy loam (bare soil) | An der Scheune, DE | 5.9 | 0-10 | -- | -- | 9.1 | 70.0+ | SFO |
| Silt loam (bare soil) | Swisttal-Hohn, DE | 6.7 | 0-10 | -- | -- | 8.2 | 39.4+ | SFO |
| Clay loam / silt loam (bare soil) | Albig, DE | 7.8 | 0-10 | -- | -- | 7.4 | 36.7+ | SFO |
| Sandy loam  (spring barley) | Thurston, UK | 7.4 | 0-10 | -- | -- | 5.8 | 88.0+ 1) | SFO |
| Sandy loam  (spring barley) | Thurston, UK | 7.4 | 0-10 | -- | -- | 6.5 | SFO |
| Sandy loam  (spring barley) | Pakenham, UK | 7.0 | 0-10 | -- | -- | 7.8 | 53.1+ 1) | SFO |
| Sandy loam  (spring barley) | Pakenham, UK | 7.0 | 0-10 | -- | -- | 9.2 | SFO |
| Silt loam  (spring wheat) | Touffreville, FR | 7.2 | 0-10 | -- | -- | 3.6 | 24.2+ | SFO |
| **Southern Europe** | | | | | | | | | |
| Silty loamy sand (wine) | Laudun, FR | 7.7 | 0-10 | -- | -- | 6.3 | 36.1+ | SFO | y / EFSA Journal 2010;8(10):1719 |
| Weak loamy sand (bare soil) | Nogarole Rocca, IT | 7.7 | 0-10 | -- | -- | 4.6 | 25.4+ | SFO |
| Silty loamy sand (bare soil) | Laudun, FR | 7.7 | 0-10 | -- | -- | 18.5 | 72.2+ | SFO |
| Silt loam (wine) | Filetto, IT | 7.6 | 0-10 | -- | -- | 14.3 | 46.5+ | SFO |
| Geometric mean / median | | | |  |  |  | 45.0 /  43.0 |  |  |

+ slow-phase DFOP

1) Calculated as replicates

Table 8.4‑4: Summary of aerobic degradation rates for the metabolite KWG 4557 (M01) – field studies (normalised date for use in modelling)

| **Metabolite KWG 4557 (M01) – Field studies, aerobic conditions, normalised** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **Location** | **f.f.** | **pH** | **Depth [cm]** | DT50  **[d]** | DT90  **[d]** | **St. (chi2)** | DT50  **[d]**  **norm.** | **Method of calculation** | **Evaluated on EU level y/n/ Reference** |
| **Northern Europe** | | | | | | | | | | |
| Silt loam (bare soil) | Höfchen, DE | 0.268 | 6.5 | 0-10 | 12.1\* | 40.2\* | 33.8 | 9.8\* | SFO | y / EFSA Journal 2010;8(10):1719 |
| Loam (vegetation) | Laacher Hof, DE | 0.434 | 6.8 | 0-10 | 30.5 | 101.2 | 13.6 | 19.6 | SFO |
| Sandy loam  (vegetation) | Thurston, UK | 0.338 | 7.5 | 0-10 | 51.2 | 170.2 | 5.5 | 35.3 | SFO |
| Loamy sand  (vegetation) | Pakenham, UK | 0.262 | 7.3 | 0-10 | 66.6 | 221.1 | 16.2 | 47.6\* | SFO |
| Silt loam (bare soil) | Höfchen, DE | 0.236 | 6.4 | 0-10 | 38.6 | 128.1 | 22.7 | 32.9 | SFO |
| Sandy loam (bare soil) | Laacher Hof, DE | 0.133 | 6.6 | 0-10 | 90.8 | 301.7 | 15.9 | 54.0 | SFO |
| Sandy loam (bare soil) | An der Scheune, DE | 0.105 | 5.9 | 0-10 | 385.6\* | 1280\* | 12.3 | 142.6\* | SFO |
| Silt loam (bare soil) | Swisttal-Hohn, DE | 0.263 | 6.7 | 0-10 | 35.5 | 117.9 | 21.3 | 29.6 | SFO |
| Clay loam / silt loam (bare soil) | Albig, DE | 0.175 | 7.8 | 0-10 | 56.3 | 186.9 | 20.0 | 44.8 | SFO |
| Sandy loam  (spring barley) | Thurston, UK | 0.239 | 7.4 | 0-10 | 78.6 | 261.1 | 10.5 | 47.7 | SFO |
| Sandy loam  (spring barley) | Thurston, UK | 0.261 | 7.4 | 0-10 | 77.1 | 256.2 | 7.6 | 36.0 | SFO |
| Sandy loam  (spring barley) | Pakenham, UK | 0.266 | 7.0 | 0-10 | 90.7 | 301.3 | 17.0 | 54.7 | SFO |
| Sandy loam  (spring barley) | Pakenham, UK | 0.202 | 7.0 | 0-10 | 96.7 | 321.1 | 12.2 | 45.3 | SFO |
| Silt loam  (spring wheat) | Touffreville, FR | 0.122 | 7.2 | 0-10 | 25.3 | 84.2 | 24.4 | 17.0 | SFO |
| **Southern Europe** | | | | | | | | | | |
| Silty loamy sand (wine) | Laudun, FR | 0.147 | 7.7 | 0-10 | 35.3 | 117.3 | 24.2 | 19.8 | SFO | y / EFSA Journal 2010;8(10):1719 |
| Weak loamy sand (bare soil) | Nogarole Rocca, IT | 0.152 | 7.7 | 0-10 | 65.1 | 216.2 | 11.5 | 69.9\* | SFO |
| Silty loamy sand (bare soil) | Laudun, FR | ND | 7.7 | 0-10 | ND | ND | -- | -- | -- |
| Silt loam (wine) | Filetto, IT | ND | 7.6 | 0-10 | ND | ND | -- | -- | -- |
| Arithmetic mean / median | | 0.23 / 0.24 |  | | | | | | | |
| Geometric mean / median | | | | | 54.9 / 60.7 |  |  | 33.9 / 35.7 |  |  |

ND Not determined

\* Not included in the geometric mean or median calculation due to poor fits

Table 8.4‑5: Summary of aerobic degradation rates for the metabolite KWG 4669 (M02) – field studies (normalised date for use in modelling)

| **Metabolite KWG 4669 (M02) – Field studies, aerobic conditions, normalised** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Soil type** | **Location** | **f.f.** | **pH** | **Depth [cm]** | DT50  **[d]** | DT90  **[d]** | **St. (chi2)** | DT50  **[d]**  **norm.** | **Method of calculation** | **Evaluated on EU level y/n/ Reference** |
| **Northern Europe** | | | | | | | | | | |
| Silt loam (bare soil) | Höfchen, DE | 0.450 | 6.5 | 0-10 | 14.0\* | 46.6\* | 29.8 | 11.0\* | SFO | y / EFSA Journal 2010;8(10):1719 |
| Loam (vegetation) | Laacher Hof, DE | 0.417 | 6.8 | 0-10 | 28.6 | 95.1 | 14.1 | 18.6 | SFO |
| Sandy loam  (vegetation) | Thurston, UK | 0.356 | 7.5 | 0-10 | 58.4 | 194.1 | 7.2 | 39.9 | SFO |
| Loamy sand  (vegetation) | Pakenham, UK | 0.302 | 7.3 | 0-10 | 74.7 | 248.1 | 16.3 | 53.0\* | SFO |
| Silt loam (bare soil) | Höfchen, DE | 0.261 | 6.4 | 0-10 | 32.9 | 109.2 | 20.3 | 29.5 | SFO |
| Sandy loam (bare soil) | Laacher Hof, DE | 0.134 | 6.6 | 0-10 | 76.1 | 252.7 | 17.0 | 47.6 | SFO |
| Sandy loam (bare soil) | An der Scheune, DE | 0.099 | 5.9 | 0-10 | 247.1  \* | 820.8\* | 17.4 | 96.4\* | SFO |
| Silt loam (bare soil) | Swisttal-Hohn, DE | 0.250 | 6.7 | 0-10 | 42.1 | 140.0 | 19.8 | 34.3 | SFO |
| Clay loam / silt loam (bare soil) | Albig, DE | 0.179 | 7.8 | 0-10 | 61.6 | 204.5 | 14.2 | 49.8 | SFO |
| Sandy loam  (spring barley) | Thurston, UK | 0.286 | 7.4 | 0-10 | 81.1 | 269.6 | 12.8 | 49.7 | SFO |
| Sandy loam  (spring barley) | Thurston, UK | 0.288 | 7.4 | 0-10 | 78.2 | 259.7 | 5.9 | 36.5 | SFO |
| Sandy loam  (spring barley) | Pakenham, UK | 0.307 | 7.0 | 0-10 | 86.7 | 288.1 | 17.3 | 52.5 | SFO |
| Sandy loam  (spring barley) | Pakenham, UK | 0.230 | 7.0 | 0-10 | 95.7 | 318.0 | 9.7 | 44.7 | SFO |
| Silt loam  (spring wheat) | Touffreville, FR | 0.135 | 7.2 | 0-10 | 24.9 | 82.8 | 28.6 | 17.0 | SFO |
| **Southern Europe** | | | | | | | | | | |
| Silty loamy sand (wine) | Laudun, FR | 0.158 | 7.7 | 0-10 | 36.4 | 121.0 | 22.4 | 20.6 | SFO | y / EFSA Journal 2010;8(10):1719 |
| Weak loamy sand (bare soil) | Nogarole Rocca, IT | 0.167 | 7.7 | 0-10 | 22.6 | 75.1 | 4.6 | 24.4 | SFO |
| Arithmetic mean / median | | 0.25 / 0.26 |  | | | | | | | |
| Geometric mean / median | | | | | 51.3 / 60.6 |  |  |  | 33.4 / 36.5 |  |

ND Not determined

\* Not included in the geometric mean or median calculation due to poor fits

### Soil accumulation testing (KCP 9.1.1.2.2)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

Not required.

## Mobility in soil (KCP 9.1.2)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

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

### Prothioconazole and its metabolites

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

Table 8.5‑1: Summary of soil adsorption/desorption for Prothioconazole

| Prothioconazole a) | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | OC  (%) | Soil pH b) | Kd  (mL/g) | Kdoc  (mL/g) | Kf  (mL/g) | Kfoc  (mL/g) | 1/n  (-) | Evaluated on EU level y Reference |
| Loamy sand | 0.86 | 6.7 | 15.2 | 1765 | - | - | 0.9 | EFSA scientific report (2007) 106, 1-98  Final Add. to DAR Vol. 3 B.8 (2007) |
| Geometric mean | | | | | - | - |  |
| Arithmetic mean | | | | |  |  | - |
| pH-dependency y/n | | | | | - | | |

a) determined on the basis of an aged column leaching study

b) measured in water

Table 8.5‑2: Summary of soil adsorption/desorption for transformation products

| JAU 6476-S-methyl | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | OC  (%) | Soil pH a) | Kd  (mL/g) | Kdoc  (mL/g) | Kf  (mL/g) | Kfoc  (mL/g) | 1/n  (-) | Evaluated on EU level y Reference |
| Laacher Hof AXXa (sandy loam) | 2.02 | 7.2 |  |  | 56.0 | 2772 | 0.87 | EFSA scientific report (2007) 106, 1-98  Final Add. to DAR Vol. 3 B.8 (2007) |
| Höfchen (silt) | 2.14 | 7.1 |  |  | 64.1 | 2995 | 0.88 |
| Stanley (silty clay loam) | 1.66 | 5.9 |  |  | 41.2 | 2484 | 0.91 |
| Byromville (loamy sand) | 0.79 | 6.8 |  |  | 15.6 | 1974 | 0.85 |
| Arithmetic mean | | | | |  | 2556.3 | 0.88 |
| pH-dependency y/n | | | | | No | | |

1. measured in water

Table 8.5‑3: Summary of soil adsorption/desorption for transformation products

| JAU 6476-desthio | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Soil type | OC  (%) | Soil pH b) | Kd  (mL/g) | Kdoc  (mL/g) | Kf  (mL/g) | Kfoc  (mL/g) | 1/n  (-) | Evaluated on EU level y Reference |
| Laacher Hof AXXa (sandy loam) | 2.02 | 7.2 |  |  | 12.46 | 616.4 | 0.79 | EFSA scientific report (2007) 106, 1-98  Final Add. to DAR Vol. 3 B.8 (2007) |
| Höfchen (silt) | 2.14 | 7.1 |  |  | 13.38 | 625.3 | 0.83 |
| Stanley (silty clay loam) | 1.66 | 5.9 |  |  | 8.90 | 536.4 | 0.83 |
| Byromville (loamy sand) | 0.79 | 6.8 |  |  | 4.13 | 523 | 0.80 |
| Arithmetic mean | | | | |  | 575.4 | 0.81 |
| pH-dependency y/n | | | | | No | | |

b) measured in water

### Spiroxamine and its metabolites

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

Table 8.5‑4: Summary of soil adsorption/desorption for Spiroxamine

| Spiroxamine | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  [%] | pH | Kf  [mL/g] | Kfoc  [mL/g] | 1/n | Evaluated on EU level y/n/ Reference |
| -- | Loamy sand | 1.8 | 7.0 | 12.78 | 710 | 0.7851 | y / EFSA Journal 2010;8(10):1719 |
| -- | Silt loam | 2.4 | 6.0 | 44.98 | 1874 | 0.8310 |
| -- | Silty clay | 0.64 | 7.6 | 41.07 | 6417 | 0.8854 |
| -- | loamy sand | 0.3 | 7.7 | 7.25 | 2415 | 0.8333 |
| -- | Sand | 0.7 | 5.9 | 4.61 | 659 | 0.7682 |
| -- | Sand | 0.2 | 6.7 | 8.552 | [4276]\* | 1.063 |
| -- | Sandy loam | 0.45 | 5.8 | 14.47 | [3216]\* | 1.055 |
| -- | Sandy loam | 1.12 | 6.7 | 15.09 | [1347]\* | 1.025 |
| -- | Loam | 0.97 | 7.8 | 381.7 | [39346]\* | 1.024 |
| -- | Silty clay | 1.05 | 5.1 | 892.6 | [85008]\* | 1.013 |
| Arithmetic mean (n=10) | | | | | 2415 | 0.8206 |  |
| pH-dependency y/n | | | | | No | | |

\* U.S. soil not considered for calculating the mean (worst case approach)

Table 8.5‑5: Summary of soil adsorption/desorption for the metabolite KWG 4557-desethyl (M01)

| Metabolite KWG 4557-desethyl (M01) | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  [%] | pH | Kf  [mL/g] | Kfoc  [mL/g] | 1/n | Evaluated on EU level y/n/ Reference |
| -- | Sand | 0.32 | 7.0 / 6.3 | 3.96 | 1237.0 | 0.8668 | y / EFSA Journal 2010;8(10):1719 |
| -- | Sandy loam | 1.12 | 6.7 / 6.7 | 16.27 | 1452.7 | 0.8131 |
| -- | Loam | 0.97 | 8.7 / 7.8 | 58.81 | 6062.6 | 0.8621 |
| -- | Silty clay loam | 1.49 | 6.1 / 5.5 | 156.6 | 10510.5 | 0.8518 |
| Arithmetic mean (n=4) | | | | | 4816 | 0.8485 |  |
| pH-dependency y/n | | | | | No | | |

Table 8.5‑6: Summary of soil adsorption/desorption for the metabolite KWG 4168-despropyl (M02)

| Metabolite KWG 4168-despropyl (M02) | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  [%] | pH | Kf  [mL/g] | Kfoc  [mL/g] | 1/n | Evaluated on EU level y/n/ Reference |
| -- | Sand | 0.32 | 7.0 / 6.3 | 2.93 | 916.7 | 0.8764 | y / EFSA Journal 2010;8(10):1719 |
| -- | Sandy loam | 1.12 | 6.7 / 6.7 | 12.79 | 1141.6 | 0.8271 |
| -- | Loam | 0.97 | 8.7 / 7.8 | 54.39 | 5608.8 | 0.9222 |
| -- | Silty clay loam | 1.49 | 6.1 / 5.5 | 134.0 | 8993.6 | 0.8855 |
| Arithmetic mean (n=4) | | | | | 4165 | 0.8778 |  |
| pH-dependency y/n | | | | | No | | |

Table 8.5‑7: Summary of soil adsorption/desorption for the metabolite KWG-N-oxide (M03)

| Metabolite KWG-N-oxide (M03) | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Soil name | Soil type | OC  [%] | pH | Kf  [mL/g] | Kfoc  [mL/g] | 1/n | Evaluated on EU level y/n/ Reference |
| -- | Sand | 0.32 | 7.0 / 6.3 | 1.77 | 552.3 | 0.9388 | y / EFSA Journal 2010;8(10):1719 |
| -- | Sandy loam | 1.12 | 6.7 / 6.7 | 3.93 | 350.5 | 0.8714 |
| -- | Loam | 0.97 | 8.7 / 7.8 | 15.9 | 1640.9 | 0.8898 |
| -- | Silty clay loam | 1.49 | 6.1 / 5.5 | 370.9 | 24893\* | 0.8348 |
| Arithmetic mean (n=4) | | | | | 848 | 0.884 |  |
| pH-dependency y/n | | | | | No | | |

\* Outlier, not considered for calculating the mean

### Column leaching (KCP 9.1.2.1)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

Studies on column leaching the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance. EU approved endpoints were evaluated during Annex I inclusion. All relevant data are presented in :

* Prothioconazole – EFSA scientific report (2007) 106, 1-98
* Spiroxamine – EFSA Journal 2010; 8(10):1719

### Lysimeter studies (KCP 9.1.2.2)

No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.

*The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:*

Studies were not conducted - the model estimation of predicted environmental concentrations in groundwater carried out provided sufficient information on the risk to groundwater posed by INPUT 460 EC with the proposed use pattern for Poland.

### Field leaching studies (KCP 9.1.2.3)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

Field leaching studies for prothioconazole and spiroxamine were not required for EU registration; no additional studies have been performed.

## Degradation in the water/sediment systems (KCP 9.2, KCP 9.2.1, KCP 9.2.2, KCP 9.2.3)

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

*~~The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:~~*

~~Prothioconazole~~

~~In the aqueous environment, at 250 °C and pH 4-9, prothioconazole does not hydrolyse (DT~~~~50~~~~> 1 year), but undergoes slow photolysis - estimated DT~~~~50~~ ~~= 11 days for Athens. The main products of photolysis in the aqueous environment are JAU6476 desthio (M04), producing a maximum of 55.7% at 11 days post-experiment, thiazocine-protioconazole (M12; 14.1% at 5 days) and 1,2,4-triazole (M13, 11.9% at 18 days). No information is available on the biodegradability of the substances.~~

~~In tests in the water/sediment system, rapid disappearance of the substance from the aqueous phase was observed, mainly through migration into the sediment (22.6% - 23.4% on day 1). In the sediment, prothioconazole was slowly degraded. More than 12 degradation products were found, of which five were identified. The main degradation products in the aqueous phase are JAU6476-desthio (M04; 32.3% on day 7) and 1,2,4, triazole (M13; 37.2% on day 121), while in the sediment JAU6476-desthio (M04; 26.9% on day 14).~~

~~The degradation kinetics of prothioconazole in the water/sediment system are as follows:~~

~~- for the aqueous phase DT~~~~50~~ ~~= 0.8 - 1.0 days (1st order kinetics, simple model - SFO)~~

~~- for the whole system DT~~~~50~~ ~~= 1.6 - 2.8 days (1st order kinetics, two-phase model, so-called "Hockey stick").~~

~~Spiroxamine~~

~~Spiroxamine is hydrolytically stable in aqueous environments and only slightly undergoes photolysis in aqueous environments. Studies in the water/sediment system showed that spiroxamine rapidly disappears from the aqueous phase (DT~~~~50~~ ~~= 12-13 hours) by migration to the sediment phase, where it is slowly degraded to CO2. No significant degradation products (produced above 10%) were found in the study.~~

### Prothioconazole and its metabolites

Table 8.6‑1: Degradation in water/sediment of Prothioconazole and metabolites

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Water-sediment system | | | |
| Hönniger Weiher | | Angler Weiher | |
| Water Layer | Entire System | Water Layer | Entire System |
| Type of kinetics | 1st order | ‚hockey stick‘ | 1st order | ‚hockey stick‘ |
| Rate constant,  K [1/d] | 0.848 | 0.759 (k1) 0.022 (k2) | 0.671 | 0.424 (k1) 0.014 (k2) |
| R2 | 0.947 | 0.953 | 0.999 | 0.998 |
| DT50 (in days) | 0.8 | 2.8 | 1.0 | 1.6 |
| DT90 (in days) | 2.7 | 76.4 | 3.4 | 23.6 |

Table 8.6‑2: Summary of observed metabolites

|  |  |  |
| --- | --- | --- |
| Prothioconazole-deshtio (M04)  Water/sediment system | Water layer:  phenyl-label: max 13.9 – 32.3 %AR, 0- 7 d (n=2)  triazole-label: max 9.2 – 31.9 %AR, 1 - d (n=2)  Sediment:  phenyl-label: max 21.9 – 26.9 %AR, 14 – 59 d (n=2)  triazole-label: max 17.7 – 26.9 %AR, 14 – 59 d (n=2) | Evaluated on EU level y EFSA scientific report (2007) 106, 1-98 |
| 1,2,4-triazole  Water/sediment system | Water layer:  triazole-label: max 0.8 – 37.2 %AR, 59 – 121 d (n=2) |

### Spiroxamine and its metabolites

Table 8.6‑3: Summary of degradation in water/sediment of Spiroxamine

| Spiroxamine distribution (max. water 75.5 % AR at 6 h, max. sed. 60 % AR after 2 d) | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Water/sediment system | pH  water/  sed. | DegT50  whole syst.  [d] | DegT90 whole syst.  [d] | Kinetic, Fit  St. (chi2) | DissT50 water  [d] | DissT90 water  [d] | Kinetic, Fit  St. (r2) | DissT50 sed.  [d] | Kinetic, Fit | Evaluated on EU level y/n/ Reference |
| Hönninger  Weiher | 7.2 / 6.2 | 346\*\* | -- | SFO, 13.4 | 0.6 | 2.0\* | SFO, 6.6 | 310 | SFO, 2.9 | y / EFSA Journal 2010;8(10):1719 |
| Stillwell | 8.5 / 7.8 | 247\*\* | 820\*\* | SFO, 7.8 | 1.3 | 4.3\* | SFO, 7.3 | -- | -- |
| Anglerweiher | 7.1 / 7.2 | 16.4 | 54.3 | SFO, 12.6 | 0.8 | -- | SFO, 10.5 | 39.3 | SFO, 17.3 |
| Hönninger  Weiher | 7.2 / 5.5 | 51.6 | 171 | SFO, 18.4 | 0.7 | 11.7 | SFO, 11.7 | 152.9 | SFO, 13.1 |
| Geometric mean/median (n=4) | | 66.2/71.6 | -- |  | 0.8 | -- |  | 23 |  |  |

\* DisT50 / DisT90 (Level PI evaluation)

\*\* SFO kinetics derived from slow Phase DFOP

Table 8.6‑4: Summary of observed metabolites

|  |  |  |
| --- | --- | --- |
| M01 (KWG 4168-desethyl)  Water/sediment system | < 10 % in the system | y / EFSA Journal 2010;8(10):1719 |
| M02 (KWG 4168-despropyl)  Water/sediment system | < 10 % in the system |
| M03 (KWG 4168-N-oxide)  Water/sediment system | Max. in water 11.3 % after 0 d  Max. in sediment 1.5 % after 30 d |
| M06 (KWG 4168-acid)  Water/sediment system | Max. in water 25.6 % after 14 d  Max. in sediment 8.9 % after 118 d  DT50 water whole system: 42.5 d  DT90 water whole system: 141 d |

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

|  |
| --- |
| **Review Comments:**  The PECsoil calculations for Prothioconazole, Spiroxamide, their metabolites, and for formulation were provided by the Applicant and are considered acceptable. The risk envelope approach was used (for details please refer to GAP table). The EU agreed endpoints were used for PECsoil calculations of Prothioconazole, Spiroxamide and their metabolites.  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

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC~~.

The endpoints for prothioconazole were taken from EFSA scientific report (2007) 106, 1-98 and for spiroxamine were taken from EFSA Journal 2010;8(10):1719

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

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

*~~The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:~~*

~~The applicant provided calculations of predicted environmental concentrations of prothioconazole and spiroxamine in soil using the FOCUS PEARL modelling programme for calculating predicted environmental concentrations in groundwater. These calculations were questioned by the Institute as not being in line with current practice - the recommendations of the EFSA Scientific Panel on how to calculate predicted environmental concentrations in soil, and consequently were not included in the assessment process. The assessment body recalculated the PECS values using simple models recommended in the relevant guidelines. The results of the calculations are given below.~~

~~Prothioconazole~~

~~In soil, prothioconazole - JAU6476 degrades 49.9% to JAU6476-desthio(M04) (in field tests, the maximum conversion rate is 57.1%) and 14.6% to JAU6476-S-methyl (M01). The substance only slightly mineralises to CO~~~~2~~ ~~- 0.9-10.7%, while the amount of non-extractable residues after 120 days reaches 35.6 - 48.3%.~~

~~Calculations of the predicted environmental concentrations of the active substance prothioconazole and its degradation products in soil - M01 and M04 - were made using the DT~~~~50~~ ~~values and conversion factors included in the list of endpoints for prothioconazole included in the EFSA Report on the evaluation of the active substance prothioconazole of 12 July 2007.~~

~~Active substance prothioconazole~~

|  |  |
| --- | --- |
| **~~Plant protection product/active substance~~** | ~~Input 460 EC/prothioconazole~~ |
| **~~Applied dose/frequency~~** | ~~160 a.s. g/ha, once per growing season~~ |
| **~~Calculation method using DT~~~~50~~** | ~~1st order kinetics, field tests;~~  ~~DT50 = 2.8 days (highest value obtained=~~ |
| **~~PECs (µg/kg) at a soil depth of 5 cm with a crop interception of 50 %~~** | |
| ~~Initial~~ | **~~0.107~~** |
| ~~1 d~~ | ~~0.083~~ |
| ~~2 d~~ | ~~0.065~~ |
| ~~4 d~~ | ~~0.040~~ |
| ~~7 d~~ | ~~0.019~~ |
| ~~14 d~~ | ~~0.003~~ |
| ~~28 d~~ | ~~0.000~~ |
| ~~50 d~~ | ~~0.000~~ |
| ~~100 d~~ | ~~0.000~~ |

~~Degradation product JAU6476-S-methyl (M01)~~

|  |  |
| --- | --- |
| **~~Plant protection product/active substance~~** | ~~Input 460 EC/prothioconazole/M01~~ |
| **~~Applied dose/frequency~~** | ~~160 a.s. g/ha, once per growing season; a molar conversion factor of 1.041 was applied~~ |
| **~~Calculation method using DT~~~~50~~** | ~~Kinetics of 1st order reaction, laboratory tests; DT50 = 46.0 days (maximum value representing worst case); conversion rate of prothioconazole--> M01 is 14.6%, maximum occurs at 7 days after a. s. application.~~ |
| **~~PECs (µg/kg) at a soil depth of 5 cm with a crop interception of 50 %~~** | |
| ~~Initial~~ | **~~0.016~~** |
| ~~1 d~~ | ~~0.016~~ |
| ~~2 d~~ | ~~0.016~~ |
| ~~4 d~~ | ~~0.015~~ |
| ~~7 d~~ | ~~0.015~~ |
| ~~14 d~~ | ~~0.013~~ |
| ~~28 d~~ | ~~0.011~~ |
| ~~50 d~~ | ~~0.008~~ |
| ~~100 d~~ | ~~0.004~~ |

~~Degradation product JAU6476-desthio (M04)~~

|  |  |
| --- | --- |
| **~~Plant protection product/active substance~~** | ~~Input 460 EC/prothioconazole/M04~~ |
| **~~Applied dose/frequency~~** | ~~160 a.s. g/ha, once per growing season; a molar conversion factor of 0.907 was applied~~ |
| **~~Calculation method using DT~~~~50~~** | ~~Kinetics of 1st order reaction, field trials; DT50 = 72.3 days (maximum value representing the worst case); conversion rate of prothioconazole--> M04 is 57.1%, maximum occurs at 7 days after a. s. Application.~~ |
| **~~PECs (µg/kg) at a soil depth of 5 cm with a crop interception of 50 %~~** | |
| ~~Initial~~ | **~~0.055~~** |
| ~~1 d~~ | ~~0.055~~ |
| ~~2 d~~ | ~~0.054~~ |
| ~~4 d~~ | ~~0.053~~ |
| ~~7 d~~ | ~~0.052~~ |
| ~~14 d~~ | ~~0.048~~ |
| ~~28 d~~ | ~~0.042~~ |
| ~~50 d~~ | ~~0.034~~ |
| ~~100 d~~ | ~~0.021~~ |

~~Sprioxamine~~

~~Spiroxamine degrades slowly in soil to CO2 (30.7 - 44.7% after 100 days) and non-extractable residues (24.7 - 26.4% after 100 days). No significant degradation products were found.~~

~~Active substance spiroxamine~~

|  |  |
| --- | --- |
| **~~Plant protection product/active substance~~** | ~~Input 460 EC/spiroxamine~~ |
| **~~Applied dose/frequency~~** | ~~300. g/ha, once per growing season~~ |
| **~~Calculation method using DT50~~** | ~~Kinetics of 1st order reaction, field tests; DT50 = 105.1 days (maximum value representing worst case)~~ |
| **~~PECs (µg/kg) at a soil depth of 5 cm with a crop interception of 50 %~~** | |
| ~~Initial~~ | **~~0.200~~** |
| ~~1 d~~ | ~~0.199~~ |
| ~~2 d~~ | ~~0.197~~ |
| ~~4 d~~ | ~~0.195~~ |
| ~~7 d~~ | ~~0.191~~ |
| ~~14 d~~ | ~~0.182~~ |
| ~~28 d~~ | ~~0.166~~ |
| ~~50 d~~ | ~~0.144~~ |
| ~~100 d~~ | ~~0.103~~ |

~~Predicted initial concentration of INPUT 460 EC formulation in soil:~~

~~The calculation of the initial predicted soil concentration of the INPUT 460 EC formulation was made using the following correlation:~~

~~Initial PECs = A\*(1-f~~~~int~~~~)/(100\*mixing depth\*d~~~~soil~~~~), where:~~

~~A- application rate - 985 g/ha~~

~~f~~~~int~~ ~~- % crop interception - for spring and winter cereals at BBCH 20 (beginning of tillering stage) - 59 (end of earing stage) the minimum value, used in this calculation, is 0.5~~

~~mixing depth- 5cm,~~

~~dsoil – 1.5 g/cm3~~

~~The density of the product is 0.985 mg/cm3~~

~~For INPUT 460 EC formulation, calculated initial PECs = 0.66 mg/kg soil~~

Table 8.7‑1: Input parameters related to application for PECsoil calculations

|  |  |
| --- | --- |
| Use No. | 1-4 |
| Crop | Winter/Spring cereals |
| Application rate (g as/ha) | Prothioconazole: 160  Spiroxamine: 300 |
| Number of applications/interval | 1 / - |
| Crop interception\* (%) | 80 |
| Depth of soil layer (relevant for plateau concentration) (cm) | 5 (no tillage) |
| Soil bulk density [g/cm3] | 1.5 |

\*According to EFSA Guidance Document to obtain DegT50 values; EFSA Journal 2014; 12(5):3662

Table 8.7‑2: Input parameter for active substance(s) and relevant metabolite(s) for PECsoil calculation

| Compound | Molecular weight (g/mol) | Max. occurrence (%) | DT50  (days) | Value in accordance with EU endpoint y  Reference |
| --- | --- | --- | --- | --- |
| Prothioconazole | 344.3 | - | 2.8 | y / EFSA scientific report (2007) 106, 1-98 |
| Prothioconazole-S-methyl (M01) | 358.3 | 14.6 | 46 |
| Prothioconazole-desthio (M04) | 312.2 | 57.1 | 72.3 |
| Spiroxamine | 297.5 | - | 71.5  (field dissipation trial Filetto 4042/1) | y / EFSA Journal 2010;8(10):1719 |
| Metabolite M01 | 269.4 | 43.4 | 90.7 |
| Metabolite M02 | 255.4 | 45.0 | 85.0 |
| Metabolite M03 | 313.5 | 7.9 | 70.7  (max. non-normalised lab; confirmatory data) |

#### Prothioconazole and its metabolites

Table 8.7‑3: PECsoil for prothioconazole on cereals

| PECsoil |  | Cereals | |
| --- | --- | --- | --- |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.043 | 0.043 |
| Short term | 24h | 0.033 | 0.038 |
|  | 2d | 0.026 | 0.034 |
|  | 4d | 0.016 | 0.027 |
| Long term | 7d | 0.008 | 0.020 |
|  | 14d | 0.001 | 0.012 |
|  | 21d | 0.000 | 0.008 |
|  | 28d | 0.000 | 0.006 |
|  | 50d | 0.000 | 0.003 |
|  | 100d | 0.000 | 0.002 |
| Plateau concentration (5 cm)  after year 1 |  | --\* | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | --\* | - |

\* Not relevant (DT50 < 3 months and DT90 < 365 days)

PECsoil of metabolites

Table 8.7‑4: PECsoil for Prothioconazole-S-methyl (M01) on cereals

|  |  |  |  |
| --- | --- | --- | --- |
| PECsoil |  | Cereals | |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.006 | 0.006 |
| Short term | 24h | 0.006 | 0.006 |
|  | 2d | 0.006 | 0.006 |
|  | 4d | 0.006 | 0.006 |
| Long term | 7d | 0.006 | 0.006 |
|  | 14d | 0.005 | 0.006 |
|  | 21d | 0.005 | 0.006 |
|  | 28d | 0.004 | 0.005 |
|  | 50d | 0.003 | 0.005 |
|  | 100d | 0.001 | 0.003 |
| Plateau concentration (5 cm)  after year 1 |  | --\* | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | --\* | - |

\* Not relevant (DT50 < 3 months and DT90 < 365 days)

Table 8.7‑5: PECsoil for Prothioconazole-desthio (M04) on cereals

| PECsoil |  | Cereals | |
| --- | --- | --- | --- |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.022 | 0.022 |
| Short term | 24h | 0.022 | 0.022 |
|  | 2d | 0.022 | 0.022 |
|  | 4d | 0.021 | 0.022 |
| Long term | 7d | 0.021 | 0.021 |
|  | 14d | 0.019 | 0.021 |
|  | 21d | 0.018 | 0.020 |
|  | 28d | 0.017 | 0.019 |
|  | 50d | 0.014 | 0.018 |
|  | 100d | 0.008 | 0.014 |
| Plateau concentration (5 cm)  after year 1 |  | --\* | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | --\* | - |

\* Not relevant (DT50 < 3 months and DT90 < 365 days)

#### Spiroxamine and its metabolites

Table 8.7‑6: PECsoil for Spiroxamine on cereals

|  |  |  |  |
| --- | --- | --- | --- |
| PECsoil |  | Cereals | |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.080 | 0.080 |
| Short term | 24h | 0.079 | 0.080 |
|  | 2d | 0.078 | 0.079 |
|  | 4d | 0.077 | 0.078 |
| Long term | 7d | 0.075 | 0.077 |
|  | 14d | 0.070 | 0.075 |
|  | 21d | 0.065 | 0.072 |
|  | 28d | 0.061 | 0.070 |
|  | 50d | 0.049 | 0.063 |
|  | 100d | 0.030 | 0.051 |
| Plateau concentration (5 cm)  after year 1 |  | 0.002 | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | 0.082 | - |

PECsoil of metabolites

Table 8.7‑7: PECsoil for metabolite M01 on cereals

|  |  |  |  |
| --- | --- | --- | --- |
| PECsoil |  | Cereals | |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.031 | 0.031 |
| Short term | 24h | 0.031 | 0.031 |
|  | 2d | 0.031 | 0.031 |
|  | 4d | 0.030 | 0.031 |
| Long term | 7d | 0.030 | 0.031 |
|  | 14d | 0.028 | 0.030 |
|  | 21d | 0.027 | 0.029 |
|  | 28d | 0.025 | 0.028 |
|  | 50d | 0.021 | 0.026 |
|  | 100d | 0.015 | 0.022 |
| Plateau concentration (5 cm)  after year 1 |  | 0.002 | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | 0.033 | - |

Table 8.7‑8: PECsoil for metabolite M02 on cereals

|  |  |  |  |
| --- | --- | --- | --- |
| PECsoil |  | Cereals | |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.031 | 0.031 |
| Short term | 24h | 0.031 | 0.031 |
|  | 2d | 0.030 | 0.031 |
|  | 4d | 0.030 | 0.030 |
| Long term | 7d | 0.029 | 0.030 |
|  | 14d | 0.028 | 0.029 |
|  | 21d | 0.026 | 0.028 |
|  | 28d | 0.025 | 0.028 |
|  | 50d | 0.021 | 0.025 |
|  | 100d | 0.014 | 0.021 |
| Plateau concentration (5 cm)  after year 1 |  | 0.002 | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | 0.033 | - |

Table 8.7‑9: PECsoil for metabolite M03 on cereals

|  |  |  |  |
| --- | --- | --- | --- |
| PECsoil |  | Cereals | |
| (mg/kg) |  | Single application | |
|  |  | Actual | TWA |
| Initial |  | 0.007 | 0.007 |
| Short term | 24h | 0.007 | 0.007 |
|  | 2d | 0.007 | 0.007 |
|  | 4d | 0.006 | 0.007 |
| Long term | 7d | 0.006 | 0.006 |
|  | 14d | 0.006 | 0.006 |
|  | 21d | 0.005 | 0.006 |
|  | 28d | 0.005 | 0.006 |
|  | 50d | 0.004 | 0.005 |
|  | 100d | 0.002 | 0.004 |
| Plateau concentration (5 cm)  after year 1 |  | 0.000 | - |
| PECaccumulation  (PECact +PECsoil plateau) |  | 0.007 | - |

#### PECsoil of ULTRACENT 460 EC

Since the formulation contains two active substances, PECsoil, as a result of exposure to the formulation has to be included. Calculations for the formulation are based on a single application of the formulation, as the formulation is not expected to remain intact in the environment for any period but will break down into its individual components.

PECsoil values of ULTRACENT 460 EC have been calculated, assuming a single application of the product with maximum application rate (i.e. 1.0 L/ha) and the following parameters:

|  |  |
| --- | --- |
| Density: | 0.98 g/cm3 |
| Crop interception: | 80 % |

As no DT50 values of the product are available, only initial PECsoil values are being reported.

Table 8.7‑10: PECsoil for ULTRACENT 460 EC on winter / spring cereals

| Active  substance/  reparation | Application rate (L/ha) | PECact (mg/kg) | Tillage depth (cm) |
| --- | --- | --- | --- |
| ULTRACENT 460 EC | 1.0  (80 % intercption) | 0.261 | 5 cm |

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

The PECgw of the active substances prothioconazole and spiroxamine and their metabolites have been assessed with standard FOCUS scenarios in FOCUS PELMO 6.6.4, FOCUS PEARL 5.5.5 ~~and FOCUS MACRO v5.5.4.~~

|  |
| --- |
| **Review Comments:**  The PECGW calculations for Prothioconazole and its metabolites (Prothioconazole-S-methyl, Prothioconazole-desthio) were provided by the Notifier and are considered acceptable.  For active substance and its relevant metabolites PECGW calculations were performed with new versions of models: FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4. The EU agreed endpoints from the datasets presented in the EFSA Scientific Report (2007) 106, 1-98, were used.  The PECGW of Prothioconazole (80th percentile) at 1 m depth following uses on cereals at the proposed maximum rates, were less than 0.001 μg/L in all scenarios. The potential for the metabolites Prothioconazole-S-methyl and Prothioconazole-desthio to leach to groundwater has been assessed using the same approach. The PECGW of Prothioconazole-S-methyl and Prothioconazole-desthio were less than 0.001 μg/L in all scenarios of three models.  The PECGW calculations for Spiroxamine and its metabolites (M01, M02, M03) were provided by the Applicant and are considered acceptable.  For active substance and its relevant metabolites PECGW calculations were performed with FOCUS PEARL 5.5.5 and FOCUS PELMO 6.6.4. The EU agreed endpoints were used from the datasets presented in the EFSA Journal 2010;8(10):1719 revised in 2017 (confirmatory data/Addendum; and EFSA Journal 2020;19(2):6385).  The PECGW of Spiroxamine (80th percentile) at 1 m depth following uses on cereals at the proposed maximum rates, were less than 0.001 μg/L in all scenarios. The potential for the metabolites M01, M02 and M03 to leach to groundwater has been assessed using the same approach. The PECGW of all metabolites were less than 0.001 μg/L in all scenarios.  In conclusion, the results demonstrate that ULTRACENT 460 EC can be applied safely according to the recommended use patterns without risk of Prothioconazole, Prothioconazole-S-methyl and Prothioconazole-desthio, Spiroxamine, M01, M02, M03 exceeding acceptable levels in groundwater. |

### Justification for new endpoints

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

The endpoints for prothioconazole were taken from EFSA scientific report (2007) 106, 1-98 and for spiroxamine were taken from EFSA Journal 2010;8(10):1719.

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

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

*~~The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:~~*

~~Prothioconazole~~

~~An assessment of predicted environmental concentrations in groundwater was carried out for the active substance, JAU6476, and its main degradation products in soil, JAU6476-desthio (M04) and JAU6476-S-methyl (M01). The calculations were performed with the FOCUS-PEARL v. 2.0 modelling programme.~~

~~Information on the input parameters of the calculations carried out is summarised in the table below:~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **~~Model programme used: FOCUS-PEARL v. 2.0.~~**  **~~Calculation report: T. Schad (2004), unpubl. rep. no. MEF-04/225;~~** | ~~Model calculations were carried out for winter wheat and winter turnip for the following application rates:~~  ~~(a) winter wheat: 2 applications per season at growth stage BBCH 30-69, at 21-day intervals, at rates of 125 g/ha, crop interception 70% in both cases;~~  ~~(b) winter wheat: 2 applications per season at growth stage BBCH 30-60, at intervals of 21 days, at rates of 200 g/ha, crop interception 70% in both cases;~~  ~~(c) winter turnip: 2 applications per season at growth stage BBCH 53-69, at intervals of 21 days, at rates of 125 g/ha, crop interception 80% in both cases;~~ | | | |
|  |
|  |
|  |
|  |
|  |
|  |
|  | **~~Data input~~** | **~~JAU6476~~** | **~~JAU6476- desthio~~** | **~~JAU6476‑~~****~~S-methyl~~** |
|  | **~~DT50 at 20~~~~o~~~~C~~** | ~~1.3 days~~ | ~~22.1 days~~ | ~~14.7 days~~ |
|  | **~~[days]~~** |  |  |  |
|  | **~~Conversion rate of the active substance~~** |  | ~~57%~~ | ~~14%~~ |
| **~~KfOC~~ ~~l/kg~~ ~~(KOM~~ ~~l/kg)~~** | ~~1765~~ | ~~575.4~~ | ~~2556.3~~ |
|  |  | ~~(1024)~~ | ~~(334)~~ | ~~(1483)~~ |
|  | **~~Freundlich coefficient (1/n)~~** | ~~0.90~~ | ~~0.81~~ | ~~0.88~~ |

~~In the calculations, because of the modelling programme used, FOCUS-PEARL, the sorption coefficient KOM (values given in brackets) obtained by conversion - dividing the KOC value by a factor of 1.7024 - was used instead of the KOC sorption coefficient.~~

~~The following assumptions were made in the calculations for the JAU6476 transformation pathway:~~

~~- JAU6476 transforms 57% to JAU6476-desthio, 14% to JAU6476-S-methyl and to CO2 and non-extractable residues~~

~~- JAU6476-S-methyl converts 100% to JAU-desthio,~~

~~- JAU6476-desthio converts 100% to CO2 and non-extractable residues.~~

~~The results of the model calculations are shown in the table below:~~

|  |  |  |  |
| --- | --- | --- | --- |
| **~~Scenario~~** | **~~PEC~~~~GW~~ ~~values at 1m depth (80th percentile)~~**  **~~[µg/L]~~** | | |
| **~~JAU6476~~** | **~~JAU6476-desthio~~** | **~~JAU6476-S-methyl~~** |
| **~~Châteaudun~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Hamburg~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Jokioinen~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Kremsmünster~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Okehampton~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Piacenza~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Porto~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Sevilla~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |
| **~~Thiva~~** | ~~<0.001~~ | ~~<0.001~~ | ~~<0.001~~ |

~~The application pattern of the substance - doses and number of applications - differs from that proposed for Poland, but the analysis of the model calculations submitted for assessment established that it can be considered as the worse scenario. Therefore, the model calculations of predicted environmental concentrations in groundwater were accepted.~~

~~The calculated predicted environmental concentrations of both the active substance and its degradation products were found not to exceed the threshold value of 0.1 mg/L in any of the scenarios.~~

~~Spiroxamine~~

~~An assessment of predicted environmental concentrations in groundwater was carried out for spiroxamine with the model programme FOCUS-PEARL v. 2.0. The DT50 values calculated by Schafer and Krohn (2000) were used in the calculations. Information on the input parameters of the calculations carried out is summarised in the table below:~~

|  |  |  |
| --- | --- | --- |
| **~~Model programme used: FOCUS-PEARL v. 2.0.~~**  **~~Calculation report: T. Schad (2004), unpubl. rep. no. MEF-04/227;~~** | ~~Model calculations were carried out for the following applications:~~  ~~- winter wheat, 2 applications per season at the BBCH 30-69 growth stage, at 21-day intervals, at rates of 375 g/ha, crop interception 70% in both cases;~~ | |
| **~~Data input~~** | **~~Spiroxamine~~** |
| **~~DT50 at 20~~~~o~~~~C~~** | ~~53.7 days~~ |
| **~~KfOC~~ ~~l/kg~~ ~~(KOM~~ ~~l/kg)~~** | ~~2415 (1401)~~ |
| **~~Freundlich coefficient (1/n)~~** | ~~0.82~~ |

~~In the calculations, because of the modelling programme used, FOCUS-PEARL, the sorption coefficient KOM (values given in brackets) obtained by conversion - dividing the KOC value by a factor of 1.7024 - was used instead of the KOC sorption coefficient.~~

~~The following assumptions were made in the calculations for the spiroxamine transformation pathway: spiroxamine in soil is converted 100% to CO2 and non-extractable residues; no significant degradation products were found.~~

~~The results of the model calculations are presented in the table below:~~

|  |  |
| --- | --- |
| **~~Scenario~~** | **~~PEC~~~~GW~~ ~~values at 1m depth (80th percentile)~~**  **~~[µg/L]~~** |
| **~~Spiroxamine~~** |
| **~~Châteaudun~~** | ~~<0.001~~ |
| **~~Hamburg~~** | ~~<0.001~~ |
| **~~Jokioinen~~** | ~~<0.001~~ |
| **~~Kremsmünster~~** | ~~<0.001~~ |
| **~~Okehampton~~** | ~~<0.001~~ |
| **~~Piacenza~~** | ~~<0.001~~ |
| **~~Porto~~** | ~~<0.001~~ |
| **~~Sevilla~~** | ~~<0.001~~ |
| **~~Thiva~~** | ~~<0.001~~ |

~~The manner of application of the substance - doses and number of applications - differs from that proposed for Poland, but the analysis of the model calculations submitted for assessment established that it can be regarded as the worse scenario. Therefore, the model calculations of predicted environmental concentrations in groundwater were accepted.~~

~~The calculated predicted environmental concentrations of both spiroxamine were found not to exceed the threshold value of 0.1 mg/L in any of the scenarios.~~

~~Impact on water treatment processes~~

~~(Annex IA, point 9.2.2)~~

~~No information was provided by the applicant in the dossier submitted for evaluation to enable a satisfactory assessment of the impact of the product on water and waste water treatment processes. The information in the assessment reports on each of the active substances, as prepared for their inclusion in Annex I to Directive 91/414/EEC, concluded that neither spiroxamine nor prothioconazole is expected to have an adverse effect on drinking water and waste water treatment processes. On this basis, it was concluded that the plant protection product INPUT 460 EC, when used according to the proposed manner of use, is not expected to have an impact on the processes of drinking water and waste water treatment.~~

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

|  |  |  |
| --- | --- | --- |
| Use No. | 1-4 | 3-4 |
| Crop | Winter cereals | Spring cereals |
| Application rate (g as/ha) | Prothioconazole: 160  Spiroxamine: 300 | Prothioconazole: 160  Spiroxamine: 300 |
| Number of applications/interval (d) | 1 / - | 1 / - |
| Relative application date | - | - |
| Crop interception (%) | 80 | 80 |
| Amount reaching soil surface (g as/ha) | Prothioconazole: 32  Spiroxamine: 60 | Prothioconazole: 32  Spiroxamine: 60 |
| Frequency of application | annual | |
| Models used for calculation | FOCUS PEARL v5.5.5, FOCUS PELMO v6.6.4, ~~FOCUS MACRO v5.5.4~~ | |

Table 8.8‑2: Application dates used for groundwater risk assessment

| Scenario | Application dates (absolute)\* | |
| --- | --- | --- |
|  | Winter cereals | Spring cereals |
| Châteaudun | 15.04 | 16.04 |
| Hamburg | 04.05 | 28.04 |
| Jokioinen | 14.05 | 05.06 |
| Kremsmünster | 24.04 | 27.04 |
| Okehampton | 21.04 | 22.04 |
| Piacenza | 19.03 | - |
| Porto | 30.01 | 16.04 |
| Sevilla | 06.01 | - |
| Thiva | 18.01 | - |

\* Using AppDate Version 3.06 (28 June 2019) developed from the Fraunhofer-Institute, Germany

#### Prothioconazole and its metabolites

Table 8.8‑3: Input parameters related to active substance Prothioconazole and metabolites for PECgw calculations

| Compound | Prothioconazole | Prothioconazole-S-methyl (M01) | Prothioconazole-desthio (M04) | Value in accordance with EU endpoint y  Reference |
| --- | --- | --- | --- | --- |
| Molecular weight [g/mol] | 344.3 | 358.3 | 312.2 | y / EFSA scientific report (2007) 106, 1-98 |
| Water solubility [mg/L]  20 °C | 300 | 300  (parent value as surrogate) | 300  (parent value as surrogate) |
| Saturated vapour pressure (Pa) 20 °C | 4 x 10-7 | 4 x 10-7  (parent value as surrogate) | 4 x 10-7  (parent value as surrogate) |
| DT50 in soil (d) | 1.2 (geometrically averaged from field studies, normalised to 20 °C) | 15.7 (mean value from lab study, n = 4) | 22.7 (geometrically averaged from field studies, normalised to 20 °C) |
| Kfoc (mL/g)/Kfom | 1765/1024 (geomean) | 2556.3/1482.8 (mean n = 4) | 575.4/333.8 (mean n = 4) |
| 1/n | 0.9 | 0.88 | 0.81 |
| Plant uptake factor | 0 | 0 | 0 |
| Formation fraction | - | 0.14 | 0.57 |

Table 8.8‑4: PECgw for Prothioconazole and metabolites (with FOCUS PELMO 6.6.4)

| Crop | Scenario | 80th Percentile PECgw at 1 m Soil Depth (μg/L) | | |
| --- | --- | --- | --- | --- |
| Prothioconazole | Prothioconazole-S-methyl (M01) | Prothioconazole-desthio (M04) |
|
| Winter cereals | Châteaudun | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 |
| Spring cereals | Châteaudun | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 |

Table 8.8‑5: PECgw for Prothioconazole and metabolites (with FOCUS PEARL 5.5.5)

| Crop | Scenario | 80th Percentile PECgw at 1 m Soil Depth (μg/L) | | |
| --- | --- | --- | --- | --- |
| Prothioconazole | Prothioconazole-S-methyl (M01) | Prothioconazole-desthio (M04) |
|
| Winter cereals | Châteaudun | <0.000001 | <0.000001 | <0.000001 |
| Hamburg | <0.000001 | <0.000001 | <0.000001 |
| Jokioinen | <0.000001 | <0.000001 | <0.000001 |
| Kremsmünster | <0.000001 | <0.000001 | <0.000001 |
| Okehampton | <0.000001 | <0.000001 | <0.000001 |
| Piacenza | <0.000001 | <0.000001 | <0.000001 |
| Porto | <0.000001 | <0.000001 | <0.000001 |
| Sevilla | <0.000001 | <0.000001 | <0.000001 |
| Thiva | <0.000001 | <0.000001 | <0.000001 |
| Spring cereals | Châteaudun | <0.000001 | <0.000001 | <0.000001 |
| Hamburg | <0.000001 | <0.000001 | <0.000001 |
| Jokioinen | <0.000001 | <0.000001 | <0.000001 |
| Kremsmünster | <0.000001 | <0.000001 | <0.000001 |
| Okehampton | <0.000001 | <0.000001 | <0.000001 |
| Porto | <0.000001 | <0.000001 | <0.000001 |

#### Spiroxamine and its metabolites

Table 8.8‑6: Input parameters related to active substance Spiroxamine and metabolites for PECgw calculations

| Compound | Spiroxamine | M01 | M02 | M03 | Value in accordance with EU endpoint y/n/  Reference |
| --- | --- | --- | --- | --- | --- |
| Molecular weight [g/mol] | 297.5 | 269.4 | 255.4 | 313.5 (EpiSuite 4.11 calculation, appendix 3) | y / EFSA Journal 2010;8(10):1719 |
| Water solubility [mg/L] | 470 (20 °C) at pH 5 | 14.8 | 46.6 | 0.76 (20 °C) (EpiSuite 4.11 calculation, appendix 3) |
| Saturated vapour pressure [Pa] | 9.7 x 10-3 (20 °C) | 0 (default) | 9.7 x 10-3 (20 °C) | 3.48 x 10-6 (20 °C) (EpiSuite 4.11 calculation, appendix 3) |
| DT50 in soil [d] | 45.0 (geomean, field) | 33.9 (geomean, field normalised) | 33.4 (geomean, field normalised) | 21.0 (geomean, lab) (confirmatory data) | y / EFSA Journal 2010;8(10):1719  and confirmatory data (2017) |
| KOC / KOM [L/kg] | 2415 / 1400  (arith. mean) | 4816 / 2794  (arith. mean) | 4165 / 2416  (arith. mean) | 848 / 492  (arith. mean)  (confirmatory data) |  |
| 1/n | 0.82 | 0.85 | 0.88 | 0.88 (confirmatory data) |
| Plant uptake factor | 0 | 0 | 0 | 0 | Worst case default |
| Formation fraction | -- | 0.23 | 0.25 | 0.43 | y / EFSA Journal 2010;8(10):1719  and confirmatory data (2017) |
| Transformation rate (k) | k = 0.0013863 (parent 🡪 sink) | k = 0.0035428 (parent 🡪 metabolite) | k = 0.0038508 (parent 🡪 metabolite) | k = 0.0066234 (confirmatory data) | Calculated based on formation fraction |

Table 8.8‑7: PECgw for Spiroxamine and metabolites (with FOCUS PELMO 6.6.4)

| Crop | Scenario | 80th Percentile PECgw at 1 m Soil Depth (μg/L) | | | |
| --- | --- | --- | --- | --- | --- |
| Spiroxamine | M01 | M02 | M03 |
| Winter cereals | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Piacenza | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |
| Sevilla | <0.001 | <0.001 | <0.001 | <0.001 |
| Thiva | <0.001 | <0.001 | <0.001 | <0.001 |
| Spring cereals | Châteaudun | <0.001 | <0.001 | <0.001 | <0.001 |
| Hamburg | <0.001 | <0.001 | <0.001 | <0.001 |
| Jokioinen | <0.001 | <0.001 | <0.001 | <0.001 |
| Kremsmünster | <0.001 | <0.001 | <0.001 | <0.001 |
| Okehampton | <0.001 | <0.001 | <0.001 | <0.001 |
| Porto | <0.001 | <0.001 | <0.001 | <0.001 |

Table 8.8‑8: PECgw for Spiroxamine and metabolites (with FOCUS PEARL 5.5.5)

| Crop | Scenario | 80th Percentile PECgw at 1 m Soil Depth (μg/L) | | | |
| --- | --- | --- | --- | --- | --- |
| Spiroxamine | M01 | M02 | M03 |
| Winter cereals | Châteaudun | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Hamburg | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Jokioinen | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Kremsmünster | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Okehampton | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Piacenza | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Porto | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Sevilla | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Thiva | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Spring cereals | Châteaudun | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Hamburg | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Jokioinen | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Kremsmünster | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Okehampton | <0.000001 | <0.000001 | <0.000001 | <0.000001 |
| Porto | <0.000001 | <0.000001 | <0.000001 | <0.000001 |

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

|  |
| --- |
| **Review Comments:**  The PECSSW/SED calculations for Prothioconazole and its metabolites (Prothioconazole-desthio, 1,2,4-Triazole) were provided by the Notifier and are considered acceptable.  For active substance and its relevant metabolites PECSW calculations were performed with FOCUS STEPS 1-2 (active substance and all its metabolites) and FOCUS STEP 3 (Prothioconazole-desthio) and FOCUS STEP 4 (Prothioconazole-desthio).  The additional calculation were performed by zRMS for Prothioconazole-S-methyl (Step 1).  The EU agreed endpoints were used.  The PECSW/SED calculations for Spiroxamine and its metabolites (M01, M02, M03 and M06) were provided by the Applicant and are considered acceptable.  For active substance and its relevant metabolites PECSW calculations were performed with FOCUS STEPS 1-2 (active substance and all its metabolites) and FOCUS STEP 3-4 (Spiroxamine).  The EU agreed endpoints were used.  The formulation PECSW calculations were accepted.  Consideration of deposition after volatilisation is consider as additional data only. According to information given in the DAR, an accumulation of spiroxamine (KWG 4168) in the air and a contamination by wet or dry deposition are not to be expected.  The PECsw reported below can be used for the risk assessment for aquatic organisms. Please refer to Section 9. |

### Justification for new endpoints

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

The endpoints for prothioconazole were taken from EFSA scientific report (2007) 106, 1-98 and for spiroxamine were taken from EFSA Journal 2010;8(10):1719.

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

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

*~~The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:~~*

~~The applicant submitted a report of calculations of predicted environmental concentrations for prothioconazole and its degradation products - calculations were made in steps 1-4 with the FOCUS modelling tools, and for spiroxamine - calculations were made in steps 1-4 with the FOCUS modelling tools. Analysis of the calculation reports showed that the parameterisation of the models was incorrect, and therefore the assessment unit performed calculations of predicted environmental concentrations for prothioconazole and its degradation products and for spiroxamine. Calculations of predicted environmental concentrations were also made for the formulation assuming spray drift as the only route of migration of the product to surface water. The results are summarised in the tables below.~~

~~Prothioconazole and its degradation products:~~

~~a) Parameters used in the calculations:~~

~~The parameters used in the calculations are summarised in the table below:~~

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **~~Parameter~~** | | **~~Substance~~** | | | |
| **~~JAU6476~~** | **~~JAU6476- desthio~~** | **~~JAU6476-S- methyl~~** | **~~1,2,4,-triazol~~** |
| ~~Physical and chemical properties~~ | ~~Molecular weight [g/mol]~~ | ~~344.3~~ | ~~312.2~~ | ~~358.3~~ | ~~69.06~~ |
| ~~Water solubility [mg/L]~~ | ~~300~~ | ~~0.38~~ | ~~0.21~~ | ~~1000~~ |
| ~~Saturated vapour pressure [Pa]~~ | ~~<<4.7 E-7~~ | ~~1 E-9~~ | ~~1 E-9~~ | ~~--‑~~ |
| ~~Degradation - conversion coefficient in:~~ | ~~Soil~~ | ~~----~~~~a)~~ | ~~57.1%~~ | ~~14.6%~~ | ~~---~~~~b)~~ |
| ~~water/sediment system~~ | ~~----~~~~a)~~ | ~~32.3%~~ | ~~8.0%~~ | ~~37.2%~~ |
| ~~DT50 [days]~~ | ~~Soil~~ | ~~1.2~~ | ~~22.7~~ | ~~15.7~~ | ~~--‑~~ |
| ~~Water~~ | ~~1.0~~ | ~~49.9~~ | ~~40.2~~ | ~~300~~ |
| ~~Sediment~~ | ~~24.1~~ | ~~49.9~~ | ~~40.2~~ | ~~300~~ |
| ~~Sorption parameters~~ | ~~KOC [mL/g]~~ | ~~1766~~ | ~~575.4~~ | ~~2556.3~~ | ~~43~~ |
| ~~1/n~~ | ~~0.90~~ | ~~0.81~~ | ~~0.88~~ | ~~0.90~~ |

~~a) not applicable - active substance~~

~~b) not specified - degradation product detected as main only in water/sediment tests~~

~~b) Calculation results - step 1:~~

~~The results are summarised in the table below:~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **~~Data on the plant protection product:~~** | | | | |
| **~~Name of the product~~** | | | ~~Input 460 EC~~ | |
| **~~Active substance – content in the product~~** | | | ~~JAU 6476 – 160 g/L~~ | |
| **~~Crop~~** | | | ~~Spring and winter cereals~~ | |
| **~~Number of treatments in the vegetation period~~** | | | ~~1~~ | |
| **~~Timing of application~~** | | | ~~March – May~~ | |
| **~~Zone~~** | | | ~~Northern Europe~~ | |
| **~~Doses of the active substance~~** | | | ~~160 g/ha~~ | |
| **~~Assumed crop interception~~** | | | ~~50%~~ | |
| **~~Obtained results~~** | | | | |
| **~~PECMAX value Substance~~** | | | | |
|  | **~~JAU6476~~** | **~~JAU6476-desthio~~** | **~~JAU6476-S- methyl~~** | **~~1,2,4,-triazol~~** |
| **~~Water [g/L]~~** | ~~17.37~~ | ~~16.06~~ | ~~2.08~~ | ~~0.11~~ |
| **~~Sediment [g/L]~~** | ~~280.71~~ | ~~90.06~~ | ~~45.62~~ | ~~0.045~~ |

~~c) Calculation results - step 2:~~

~~The results are summarised in the table below:~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **~~Data on the plant protection product:~~** | | | | |
| **~~Name of the product~~** | | | ~~Input 460 EC~~ | |
| **~~Active substance – content in the product~~** | | | ~~JAU 6476 – 160 g/L~~ | |
| **~~Crop~~** | | | ~~Spring and winter cereals~~ | |
| **~~Number of treatments in the vegetation period~~** | | | ~~1~~ | |
| **~~Timing of application~~** | | | ~~March – May~~ | |
| **~~Zone~~** | | | ~~Northern Europe~~ | |
| **~~Doses of the active substance~~** | | | ~~160 g/ha~~ | |
| **~~Assumed crop interception~~** | | | ~~50%~~ | |
| **~~Obtained results~~** | | | | |
| **~~PECMAX value~~** | **~~Substance~~** | | | |
| **~~JAU6476~~** | **~~JAU6476-desthio~~** | **~~JAU6476-S- methyl~~** | **~~1,2,4,-triazol~~** |
| **~~Water [g/L]~~** | ~~1.47~~ | ~~1.65~~ | ~~0.21~~ | ~~0.11~~ |
| **~~Sediment [g/L]~~** | ~~5.98~~ | ~~9.16~~ | ~~4.39~~ | ~~0.044~~ |

~~d) Calculation results - step 3:~~

~~The results are summarised in the table below:~~

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **~~Data on the plant protection product:~~** | | | | | |  |
| **~~Name of the product~~** | | | | ~~Input 460 EC~~ | |  |
| **~~Active substance – content in the product~~** | | | | ~~JAU 6476 – 160 g/L~~ | |  |
| **~~Crop~~** | | | | ~~Spring and winter cereals~~ | |  |
| **~~Number of treatments in the vegetation period~~** | | | | ~~1~~ | |  |
| **~~Timing of application~~** | | **~~Scenario~~** | **~~Crop~~** |  | |  |
| ~~D4~~ | ~~Spring cereals~~ | ~~11 May – 10 June~~ | |  |
| ~~Winter cereals~~ | ~~27 April – 27 May~~ | |  |
| ~~R1~~ | ~~Winter cereals~~ | ~~27 April – 27 May~~ | |  |
| **~~Doses of the active substance~~** | | | | ~~160 g/ha~~ | |  |
| **~~Obtained results~~** | | | | | |  |
| **~~PECMAX value~~** | | **~~Substance~~** | | | |  |
| **~~Scenario~~** | | **~~JAU6476~~** | **~~JAU6476- desthio~~** | **~~JAU6476-S- methyl~~** | **~~1,2,4,-triazol~~** | |
| **~~D4, pond,~~**  **~~spring cereals~~** | ~~Water [g/L]~~ | ~~0.0349~~ | ~~0.0102~~ | ~~0.0029~~ |  | ~~0.0026~~ |
| ~~Sediment [g/L]~~ | ~~0.0396~~ | ~~0.0116~~ | ~~0.0033~~ |  | ~~0.0029~~ |
| **~~D4, stream, spring cereals~~** | ~~Water [g/L]~~ | ~~0.838~~ | ~~0.2454~~ | ~~0.0898~~ |  | ~~0.0625~~ |
| ~~Sediment [g/L]~~ | ~~0.0674~~ | ~~0.0197~~ | ~~0.0056~~ |  | ~~0.0050~~ |
| **~~D4, pond,~~**  **~~winter cereals~~** | ~~Water [g/L]~~ | ~~0.0349~~ | ~~0.0102~~ | ~~0.0029~~ |  | ~~0.0026~~ |
| ~~Sediment [g/L]~~ | ~~0.0527~~ | ~~0.0154~~ | ~~0.0044~~ |  | ~~0.0039~~ |
| **~~D4, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~0.829~~ | ~~0.2428~~ | ~~0.069~~ |  | ~~0.0619~~ |
| ~~Sediment [g/L]~~ | ~~0.0584~~ | ~~0.0171~~ | ~~0.0047~~ |  | ~~0.0044~~ |
| **~~R1, pond, winter cereals~~** | ~~Water [g/L]~~ | ~~0.0349~~ | ~~0.0411~~ | ~~0.0029~~ |  | ~~0.0026~~ |
| ~~Sediment [g/L]~~ | ~~0.0471~~ | ~~0.0168~~ | ~~0.0211~~ |  | ~~0.0035~~ |
| **~~R1, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~0.666~~ | ~~0.455~~ | ~~0.0554~~ |  | ~~0.0497~~ |
| ~~Sediment [g/L]~~ | ~~0.0890~~ | ~~0.244~~ | ~~0.123~~ |  | ~~0.0066~~ |

~~The analysis of the results showed that the main migration route of the active substance into surface water bodies is spray drift. Other migration routes are of negligible importance. Similarly, in the case of the soil metabolites JAU6476-S-methyl and JAU6476-desthio for the D4 scenarios, the amounts entering surface waters via the drainage route are minimal - not exceeding values of 0.00001 µg/L in the aqueous phase and 0.00001 µg/kg in the sediment. For the R1 scenarios these values are as follows:~~

~~- for JAU6476-desthio in the R1/pond scenario: in water PECMAX = 0.0411 µg/L, in sediment PECMAX = 0.0168 µg/kg;~~

~~- for JAU6476-desthio in scenario R1/stream: in water PECMAX = 0.455 µg/l, in sediment PECMAX = 0.244 µg/kg;~~

~~- for JAU6476-S-methyl in the R1/pond scenario: in water PECMAX = 0.0022 µg/l (observed on day 34 after spraying), in sediment PECMAX = 0.0211µg/kg;~~

~~- for JAU6476-S-methyl in scenario R1/pond: in water PECMAX = 0.0232 µg/l (observed on day 27 after spraying), in sediment PECMAX = 0.123 µg/kg;~~

~~e) Calculation results - step 4:~~

~~The calculations were performed for a buffer zone of 20m. The results are summarised in the table below:~~

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **~~Data on the plant protection product:~~** | | | | | |  |
| **~~Name of the product~~** | | | | ~~Input 460 EC~~ | |  |
| **~~Active substance – content in the product~~** | | | | ~~JAU 6476 – 160 g/L~~ | |  |
| **~~Crop~~** | | | | ~~Spring and winter cereals~~ | |  |
| **~~Number of treatments in the vegetation period~~** | | | | ~~1~~ | |  |
| **~~Timing of application~~** | | **~~Scenario~~** | **~~Crop~~** |  | |  |
| ~~D4~~ | ~~Spring cereals~~ | ~~11 May – 10 June~~ | |  |
| ~~Winter cereals~~ | ~~27 April – 27 May~~ | |  |
| ~~R1~~ | ~~Winter cereals~~ | ~~27 April – 27 May~~ | |  |
| **~~Doses of the active substance~~** | | | | ~~160 g/ha~~ | |  |
| **~~Obtained results~~** | | | | | |  |
| **~~PECMAX value~~** | | **~~Substance~~** | | | |  |
| **~~Scenario~~** | | **~~JAU6476~~** | **~~JAU6476- desthio~~** | **~~JAU6476-S- methyl~~** | **~~1,2,4,-triazol~~** | |
| **~~D4, pond,~~**  **~~spring cereals~~** | ~~Water [g/L]~~ | ~~0.0145~~ | ~~0.0042~~ | ~~0.0012~~ |  | ~~0.0011~~ |
| ~~Sediment [g/L]~~ | ~~0.0168~~ | ~~0.0049~~ | ~~0.0014~~ |  | ~~0.0012~~ |
| **~~D4, stream, spring cereals~~** | ~~Water [g/L]~~ | ~~0.0842~~ | ~~0.0247~~ | ~~0.0070~~ |  | ~~0.0063~~ |
| ~~Sediment [g/L]~~ | ~~0.0068~~ | ~~0.0020~~ | ~~0.0006~~ |  | ~~0.0005~~ |
| **~~D4, pond,~~**  **~~winter cereals~~** | ~~Water [g/L]~~ | ~~0.0145~~ | ~~0.0042~~ | ~~0.0012~~ |  | ~~0.0011~~ |
| ~~Sediment [g/L]~~ | ~~0.0225~~ | ~~0.0066~~ | ~~0.0019~~ |  | ~~0.0017~~ |
| **~~D4, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~0.0694~~ | ~~0.0203~~ | ~~0.0058~~ |  | ~~0.0052~~ |
| ~~Sediment [g/L]~~ | ~~0.0049~~ | ~~0.0014~~ | ~~0.0004~~ |  | ~~0.0004~~ |
| **~~R1, pond, winter cereals~~** | ~~Water [g/L]~~ | ~~0.0145~~ | ~~0.0411~~ | ~~0.0022~~ |  | ~~0.0011~~ |
| ~~Sediment [g/L]~~ | ~~0.0201~~ | ~~0.0168~~ | ~~0.0211~~ |  | ~~0.0015~~ |
| **~~R1, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~0.0669~~ | ~~0.455~~ | ~~0.0232~~ |  | ~~0.0049~~ |
| ~~Sediment [g/L]~~ | ~~0.0355~~ | ~~0.244~~ | ~~0.123~~ |  | ~~0.0026~~ |

~~Spiroxamine~~

~~a) Parameters used in the calculations:~~

~~The parameters used in the calculations are summarised in the table below:~~

|  |  |  |
| --- | --- | --- |
| **~~Parameter~~** | |  |
| **~~Physical and chemical properties~~** | ~~Molecular weight [g/mol]~~ | ~~297.5~~ |
| ~~Water solubility [mg/L]~~ | ~~470~~ |
| ~~Saturated vapour pressure [Pa]~~ | ~~9.7E-3~~ |
| **~~DT50 [days]~~** | ~~Soil~~ | ~~53.70~~ |
| ~~Water~~ | ~~0.54~~ |
| ~~Sediment~~ | ~~106.0~~ |
| **~~Sorption parameters~~** | ~~KOC [mL/g]~~ | ~~2415~~ |
| ~~1/n~~ | ~~0.90~~ |

~~b) Calculation results - step 1:~~

~~The results are summarised in the table below:~~

|  |  |  |
| --- | --- | --- |
| **~~Data on the plant protection product:~~** | | |
| **~~Name of the product~~** | | ~~Input 460 EC~~ |
| **~~Active substance – content in the product~~** | | ~~Spiroxamine – 300 g/L~~ |
| **~~Crop~~** | | ~~Spring and winter cereals~~ |
| **~~Number of treatments in the vegetation period~~** | | ~~1~~ |
| **~~Timing of application~~** | | ~~March – May~~ |
| **~~Zone~~** | | ~~Northern Europe~~ |
| **~~Doses of the active substance~~** | | ~~300 g/ha~~ |
| **~~Assumed crop interception~~** | | ~~50%~~ |
| **~~Obtained results~~** | | |
| **~~PECMAX value~~** | **~~Substance: spiroxamine~~** | |
| ~~Water[g/L]~~ | ~~26.46~~ | |
| ~~Sediment [g/L]~~ | ~~572.28~~ | |

~~c) Calculation results - step 2:~~

~~The results are summarised in the table below:~~

|  |  |  |
| --- | --- | --- |
| **~~Data on the plant protection product:~~** | | |
| **~~Name of the product~~** | | ~~Input 460 EC~~ |
| **~~Active substance – content in the product~~** | | ~~Spiroxamine – 300 g/L~~ |
| **~~Crop~~** | | ~~Spring and winter cereals~~ |
| **~~Number of treatments in the vegetation period~~** | | ~~1~~ |
| **~~Timing of application~~** | | ~~March – May~~ |
| **~~Zone~~** | | ~~Northern Europe~~ |
| **~~Doses of the active substance~~** | | ~~300 g/ha~~ |
| **~~Assumed crop interception~~** | | ~~50%~~ |
| **~~Obtained results~~** | | |
| **~~PECMAX value~~** | **~~Substance: spiroxamine~~** | |
| ~~Water[g/L]~~ | ~~2.76~~ | |
| ~~Sediment [g/L]~~ | ~~60.51~~ | |

~~d) Calculation results - step 3:~~

~~The results are summarised in the table below:~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **~~Data on the plant protection product:~~** | | | |  |
| **~~Name of the product~~** | | | | ~~Input 460 EC~~ |  |
| **~~Active substance – content in the product~~** | | | | ~~JAU 6476 – 300 g/L~~ |  |
| **~~Crop~~** | | | | ~~Spring and winter cereals~~ |  |
| **~~Number of treatments in the vegetation period~~** | | | | ~~1~~ |  |
| **~~Timing of application~~** | | ~~Scenario~~ | ~~Crop~~ |  |  |
| ~~D4~~ | ~~Spring cereals~~ | ~~11 May – 10 June~~ |  |
| ~~Winter cereals~~ | ~~27 April – 27 May~~ |  |
| ~~R1~~ | ~~Winter cereals~~ | ~~27 April – 27 May~~ |  |
| **~~Doses of the active substance~~** | | | | **~~300 g/ha~~** |  |
| **~~Obtained results~~** | | | |  |
| **~~PECMAX value~~** | | **~~Substance: spiroxamine~~** | | |  |
| **~~Scenario~~** | |  | | |
| **~~D4, pond,~~**  **~~spring cereals~~** | ~~Water [g/L]~~ | ~~0.0649~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.0621~~ | | |  |
| **~~D4, stream, spring cereals~~** | ~~Water [g/L]~~ | ~~1.566~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.126~~ | | |  |
| **~~D4, pond,~~**  **~~winter cereals~~** | ~~Water [g/L]~~ | ~~0.0649~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.0903~~ | | |  |
| **~~D4, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~1.550~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.110~~ | | |  |
| **~~R1, pond, winter cereals~~** | ~~Water [g/L]~~ | ~~0.0649~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.161~~ | | |  |
| **~~R1, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~1.245~~ | | |  |
| ~~Sediment [g/L]~~ | ~~3.051~~ | | |  |

~~e) Calculation results - step 4:~~

~~The calculations were performed for a buffer zone of 20m. The results are summarised in the table below:~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **~~Data on the plant protection product:~~** | | | |  |
| **~~Name of the product~~** | | | | ~~Input 460 EC~~ |  |
| **~~Active substance – content in the product~~** | | | | ~~JAU 6476 – 300 g/L~~ |  |
| **~~Crop~~** | | | | ~~Spring and winter cereals~~ |  |
| **~~Number of treatments in the vegetation period~~** | | | | ~~1~~ |  |
| **~~Timing of application~~** | | **~~Scenario~~** | **~~Crop~~** |  |  |
| ~~D4~~ | ~~Spring cereals~~ | ~~11 May – 10 June~~ |  |
| ~~Winter cereals~~ | ~~27 April – 27 May~~ |  |
| ~~R1~~ | ~~Winter cereals~~ | ~~27 April – 27 May~~ |  |
| **~~Doses of the active substance~~** | | | | **~~300 g/ha~~** |  |
| **~~Obtained results~~** | | | |  |
| **~~PECMAX value~~** | | **~~Substance: spiroxamine~~** | | |  |
| **~~Scenario~~** | |  | | |
| **~~D4, pond,~~**  **~~spring cereals~~** | ~~Water [g/L]~~ | ~~0.0269~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.0261~~ | | |  |
| **~~D4, stream, spring cereals~~** | ~~Water [g/L]~~ | ~~0.1570~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.0127~~ | | |  |
| **~~D4, pond,~~**  **~~winter cereals~~** | ~~Water [g/L]~~ | ~~0.0269~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.0381~~ | | |  |
| **~~D4, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~0.1550~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.0110~~ | | |  |
| **~~R1, pond, winter cereals~~** | ~~Water [g/L]~~ | ~~0.0269~~ | | |  |
| ~~Sediment [g/L]~~ | ~~0.1470~~ | | |  |
| **~~R1, stream, winter cereals~~** | ~~Water [g/L]~~ | ~~0.3800~~ | | |  |
| ~~Sediment [g/L]~~ | ~~3.017~~ | | |  |

~~Formulation:~~

~~Calculations were made only for spray drift as a migration path, using the 'Drift Calculator', a tool built into the SWASH model calculation programme. The following assumptions were made in the calculations:~~

~~- product density d= 0.985 g/cm3,~~

~~- Application rate 1 l/ha = 985 g/ha.~~

~~The following table shows the results of the calculations carried out assuming a variable width of the buffer zone.~~

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **~~Type of water body~~** | **~~Calculated PEC~~~~SW~~ ~~[g/L] and buffer zones:~~** | | | | |
| ~~buffer zone defined by the FOCUS Group~~ | ~~5 m~~ | ~~10 m~~ | ~~16 m~~ | ~~20 m~~ |
| **~~Ditch~~** | ~~6.33~~ |  | ~~0.91~~ | ~~0.58~~ | ~~0.47~~ |
| **~~Pond~~** | ~~0.22~~ | ~~0.19~~ | ~~0.13~~ | ~~0.10~~ | ~~0.09~~ |
| **~~Stream~~** | ~~4.70~~ | ~~1.71~~ | ~~0.91~~ | ~~0.58~~ | ~~0.47~~ |

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

|  |  |  |
| --- | --- | --- |
| Plant protection product | ULTRACENT 460 EC | |
| Use No. | 1-4 | 3-4 |
| Crop | Winter cereals | Spring cereals |
| Application rate (g as/ha) | Prothioconazole: 160  Spiroxamine: 300 | Prothioconazole: 160  Spiroxamine: 300 |
| Number of applications/interval (d) | 1 / - | 1 / - |
| Application window | Step 1/2  N-EU (Mar-May/Jun-Sept, Oct-Feb) | |
| Application method | Ground spray | |
| CAM (Chemical application method) | 2 (foliar, linear) | |
| Soil depth (cm) | 4 | |
| Models used for calculation | Step 1-2 in FOCUS v3.2, FOCUS SWASH v3.1, FOCUS PRZM v3.3.1,  FOCUS MACRO v5.5.3, FOCUS TOXWA v3.3.1 | |

Table 8.9‑2: FOCUS Step 3/4 Scenario related input parameters for PECsw/sed calculations for the application of ULTRACENT 460 EC

| **Crop** | **Scenario** | **Application window used in modelling\*** | | | |
| --- | --- | --- | --- | --- | --- |
| **Early application** | | **Late application** | |
| **Begin – End**  **window** | **Julian Date** | **Begin – End**  **window** | **Julian Date** |
| Spring Cereals | D1 | 27.05. - 26.06. | 147 - 177 | 28.05. - 27.06. | 148 - 178 |
| D3 | 28.04. - 28.05. | 118 - 148 | 05.05. - 04.06. | 125 - 155 |
| D4 | 18.05. - 17.06. | 138 - 168 | 19.05. - 18.06. | 139 - 169 |
| D5 | 09.04. - 09.05. | 99 - 129 | 14.04. - 14.05. | 104 - 134 |
| R4 | 09.04. - 09.05. | 99 - 129 | 14.04. - 14.05. | 104 - 134 |
| Winter Cereals | D1 | 25.03. - 24.04. | 84 - 114 | 21.05. - 20.06. | 141 - 171 |
| D2 | 04.04. - 04.05. | 94 - 124 | 28.05. - 27.06. | 148 - 178 |
| D3 | 16.04. - 16.05. | 106 - 136 | 21.06. - 21.07. | 172 - 202 |
| D4 | 18.03. - 17.04. | 77 - 107 | 19.05. - 18.06. | 139 - 169 |
| D5 | 15.03. - 14.04. | 74 - 104 | 13.04. - 13.05. | 103 - 133 |
| D6 | 16.02. - 18.03. | 47 - 77 | 27.02. - 29.03. | 58 - 88 |
| R1 | 24.04. - 24.05. | 114 - 144 | 09.05. - 08.06. | 129 - 159 |
| R3 | 19.03. - 18.04. | 78 - 108 | 08.04. - 08.05. | 98 - 128 |
| R4 | 24.01. - 23.02. | 24 - 54 | 11.04. - 11.05. | 101 - 131 |

\* Using AppDate Version 3.06 (28 June 2019) developed by the Fraunhofer-Institute, Germany

Since the application dates for late and early application in spring cereals are close to identical, only early application for spring cereals has been taken into consideration. However, for application in winter cereals both (early and late) seasons are assessed.

#### Prothioconazole and its metabolites

Table 8.9‑3: Input parameters related to active substance Prothioconazole and metabolites for PECsw/sed calculations

| Compound | Prothioconazole | Prothioconazole-desthio (M04)\* | 1,2,4-triazole (M13) | Value in accordance to EU endpoint y/n/  Reference |
| --- | --- | --- | --- | --- |
| Molecular weight [g/mol] | 344.3 | 312.2 | 69.065 | y / EFSA scientific report (2007) 106, 1-98 |
| Water solubility [mg/L] | 300 | 300 | 730 000 |
| Saturated vapour pressure [Pa] | 4 x 10-7 (20 °C) | 0 (default) | Not required |
| Diffusion coefficient in water [m²/d] | 4.3 x 10-5 | Not required | Not required | FOCUS default |
| Diffusion coefficient in air [m²/d] | 0.43 | Not required | Not required |
| KOC [L/kg] | 1765 | 575.4 | 89 | y / EFSA scientific report (2007) 106, 1-98 |
| KOM = KOC / 1.724 | 1023.8 | 333.8 | 51.6 | calculated |
| Freundlich Exponent  1/n | 0.9 | 0.81 | 0.9155 | y / EFSA scientific report (2007) 106, 1-98 |
| Plant Uptake | 0 | Not required | Not required | Default |
| Wash-Off factor from Crop [1/mm] | 0.05 (MACRO)  0.50 (PRZM) | 0.05 (MACRO)  0.50 (PRZM) | Not required | FOCUS default |
| DT50, soil [d] | 2.8 | 72.3 | 60.5 | y / EFSA scientific report (2007) 106, 1-98 |
| DT50, water [d] | 1 | 1000 | 1000 |
| DT50, sed [d] | 2.8 | 1000 | 1000 |
| DT50, whole system [d] | 2.8 | 1000 | 1000 |
| Maximum occurrence observed (% molar basis with respect to the parent) | -- | Soil: 57.1  Water/sed: 32.3 / 26.9 | Soil: 0.00001  Water: 37.2 |
| Formation fraction in soil | -- | 57.1 in soil  32.3 in water  26.9 in sediment | Not required |

\* during the EU review of prothioconazole it was concluded that for the metabolites formed in soil the maximum occurrence equals the formation fraction due to very rapid conversion of prothioconazole in soil

Table 8.9‑4: Input parameters related to prothioconazole-S-methyl for PECsw/sed calculations

| Parameter | Prothioconazole-S-methyl | Value in accordance with EU endpoint y/n/  Reference |
| --- | --- | --- |
| Molecular weight (g/mol) | 358.3 | Y, EFSA (2007) |
| Saturated vapour pressure (Pa) | 0 (20°C) | Worst-case default |
| Water solubility (mg/L) | 1×106 (20°C) | Worst-case default |
| Diffusion coefficient in water (m²/d) | not required for Step 1+2 | - |
| Diffusion coefficient in air (m²/d) | not required for Step 1+2 | - |
| Kfoc / Kfom (mL/g) | 2525.9 / 1465.1 (geometric mean, n = 4) | Y, EFSA (2007), RAR (2005)\* |
| Freundlich Exponent  1/n | 0.88 (arithmetic mean, n = 4) | Y, EFSA (2007), RAR (2005) |
| Plant Uptake | 0 | Default |
| Wash-Off factor from Crop (1/mm) | not required for Step 1+2 | - |
| DT50,soil (d) | 15.7 (geometric mean, n=4) | Y, EFSA (2007), RAR (2005) |
| DT50,water (d) | 1000 | Worst-case default |
| DT50,sed (d) | 1000 | Worst-case default |
| DT50,whole system (d) | 1000 | Worst-case default |
| Maximum occurrence observed (% molar basis with respect to the parent) | Soil: 14.6  Water/sediment: Not relevant in water | Y, EFSA (2007) |
| Formation fraction in soil: | not required for Step 1+2 | - |
| Formation fraction in water/sediment: | not required for Step 1+2 | - |

\* value changed to geometric mean (EFSA 2007 used an arithmetic mean). Geomean value more conservative than original EU value in EFSA (2007) which was 2556.3 mL/g.

PECsw/sed

Table 8.9‑5: FOCUS Step 1-2 PECsw and PECsed for Prothioconazole following single application of ULTRACENT 460 EC to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter/spring** | | | |
| Step 1 | --- | 17.3760 | --- | 3.1545 | 280.7157 |
| Step 2 | | | | | |
| Northern Europe | March-May | 1.4715 | --- | 0.1973 | 18.2603 |
| June-Sept | 1.4715 | --- | 0.1973 | 18.2603 |
| Oct-Feb | 2.4396 | --- | 0.2504 | 43.2888 |

\* twa-time as required by ecotox

Metabolites of Prothioconazole

Table 8.9‑6: FOCUS Step 1-2 & 3 PECsw and PECsed for Prothioconazole-desthio (M04) following single application to winter cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | 24.8960 | --- | 24.5344 | 142.0767 |
| Step 2 | | | | | |
| Northern Europe | March-May | 3.2159 | --- | 3.1527 | 18.2544 |
| June-Sept | 3.2159 | --- | 3.1527 | 18.2544 |
| Oct-Feb | 7.6131 | --- | 7.5180 | 43.5385 |
| Step 3 Early application | | | | | |
| D1 | Ditch | 0.4385 | Drainage | --- | 5.053 |
| D1 | Stream | 0.2743 | Drainage | --- | 2.908 |
| D2 | Ditch | 0.6921 | Drainage | --- | 4.175 |
| D2 | Stream | 0.432 | Drainage | --- | 2.369 |
| D3 | Ditch | 0.03215 | Drainage | --- | 0.05537 |
| D4 | Pond | 0.02176 | Drainage | --- | 0.2233 |
| D4 | Stream | 0.07115 | Drainage | --- | 0.08077 |
| D5 | Pond | 0.008038 | Drainage | --- | 0.1295 |
| D5 | Stream | 0.0371 | Spray drift | --- | 0.01002 |
| D6 | Ditch | 0.06983 | Drainage | --- | 0.06942 |
| R1 | Pond | 0.04409 | Runoff | --- | 0.5247 |
| R1 | Stream | 0.2862 | Runoff | --- | 0.3937 |
| R3 | Stream | 0.4031 | Runoff | --- | 0.5464 |
| R4 | Stream | 0.6523 | Runoff | --- | 0.5488 |
| Step 3 Late application | | | | | |
| D1 | Ditch | 0.2845 | Drainage | --- | 4.075 |
| D1 | Stream | 0.1787 | Drainage | --- | 2.172 |
| D2 | Ditch | 0.5905 | Drainage | --- | 3.222 |
| D2 | Stream | 0.3744 | Drainage | --- | 1.81 |
| D3 | Ditch | 0.07629 | Drainage | --- | 0.1139 |
| D4 | Pond | 0.01557 | Drainage | --- | 0.1808 |
| D4 | Stream | 0.05044 | Drainage | --- | 0.05602 |
| D5 | Pond | 0.008242 | Drainage | --- | 0.1395 |
| D5 | Stream | 0.03928 | Spray drift | --- | 0.01269 |
| D6 | Ditch | 0.06983 | Drainage | --- | 0.06934 |
| R1 | Pond | 0.06352 | Runoff | --- | 0.7297 |
| R1 | Stream | 0.3674 | Runoff | --- | 0.6901 |
| R3 | Stream | 0.3498 | Runoff | --- | 0.5642 |
| R4 | Stream | 0.3471 | Runoff | --- | 0.713 |

\* twa-time as required by ecotox

Table 8.9‑7: FOCUS Step 4 PECsw and PECsed for Prothioconazole-desthio (M04) following single application to winter cereals (10 m vegetative buffer)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 4 Early application | | | | | |
| D1 | Ditch | 0.4385 | Drainage | --- | 5.039 |
| D1 | Stream | 0.2743 | Drainage | --- | 2.908 |
| D2 | Ditch | 0.6921 | Drainage | --- | 4.157 |
| D2 | Stream | 0.432 | Drainage | --- | 2.368 |
| D3 | Ditch | 0.004613 | Drainage | --- | 0.009489 |
| D4 | Pond | 0.02122 | Drainage | --- | 0.2004 |
| D4 | Stream | 0.07115 | Drainage | --- | 0.08024 |
| D5 | Pond | 0.005255 | Drainage | --- | 0.09853 |
| D5 | Stream | 0.01838 | Drainage | --- | 0.009526 |
| D6 | Ditch | 0.06983 | Drainage | --- | 0.0643 |
| R1 | Pond | 0.01871 | Runoff | --- | 0.2414 |
| R1 | Stream | 0.13 | Runoff | --- | 0.1242 |
| R3 | Stream | 0.1839 | Runoff | --- | 0.1657 |
| R4 | Stream | 0.2966 | Runoff | --- | 0.2229 |
| Step 4 Late application | | | | | |
| D1 | Ditch | 0.2845 | Drainage | --- | 3.782 |
| D1 | Stream | 0.1787 | Drainage | --- | 2.165 |
| D2 | Ditch | 0.5905 | Drainage | --- | 3.025 |
| D2 | Stream | 0.3744 | Drainage | --- | 1.727 |
| D3 | Ditch | 0.01094 | Drainage | --- | 0.01827 |
| D4 | Pond | 0.01472 | Drainage | --- | 0.1537 |
| D4 | Stream | 0.05044 | Drainage | --- | 0.05403 |
| D5 | Pond | 0.005425 | Drainage | --- | 0.1082 |
| D5 | Stream | 0.02115 | Drainage | --- | 0.01189 |
| D6 | Ditch | 0.06983 | Drainage | --- | 0.06422 |
| R1 | Pond | 0.02664 | Runoff | --- | 0.3294 |
| R1 | Stream | 0.1668 | Runoff | --- | 0.1961 |
| R3 | Stream | 0.1573 | Runoff | --- | 0.1671 |
| R4 | Stream | 0.157 | Runoff | --- | 0.2611 |

Table 8.9‑8: FOCUS Step 1-2 & 3 PECsw and PECsed for Prothioconazole-desthio (M04) following single application to spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, spring** | | | |
| Step 1 | --- | 24.8960 | --- | 24.5344 | 142.0767 |
| Step 2 | | | | | |
| Northern Europe | March-May | 3.2159 | --- | 3.1527 | 18.2544 |
| June-Sept | 3.2159 | --- | 3.1527 | 18.2544 |
| Oct-Feb | 7.6131 | --- | 7.5180 | 43.5385 |
| Step 3 Early application | | | | | |
| D1 | Ditch | 0.4407 | Drainage | --- | 5.777 |
| D1 | Stream | 0.2753 | Drainage | --- | 3.243 |
| D3 | Ditch | 0.0621 | Drainage | --- | 0.08998 |
| D4 | Pond | 0.02115 | Drainage | --- | 0.2234 |
| D4 | Stream | 0.06802 | Drainage | --- | 0.07748 |
| D5 | Pond | 0.008147 | Drainage | --- | 0.1321 |
| D5 | Stream | 0.03906 | Spray drift | --- | 0.01071 |
| R4 | Stream | 0.3675 | Runoff | --- | 0.7589 |

\* twa-time as required by ecotox

Table 8.9‑9: FOCUS Step 1-2 PECsw and PECsed for 1,2,4-triazole following single application to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | 3.6674 | --- | 3.6296 | 3.2514 |
| Step 2 | | | | | |
| Northern Europe | March-May | 0.3129 | --- | 0.3072 | 0.2751 |
| June-Sept | 0.3129 | --- | 0.3072 | 0.2751 |
| Oct-Feb | 0.6301 | --- | 0.6221 | 0.5572 |

\* twa-time as required by ecotox

Table 8.9‑10: FOCUS STEP 1 PECsw for Prothioconazole-S-methyl following application to application to winter/spring cereals

| FOCUS STEP and  Scenario | Waterbody or Season | Dominant entry route | Max PECsw  (μg/L) | Max PECsed (μg/kg) |
| --- | --- | --- | --- | --- |
| **STEP 1** | - | - | 2.737 | - |

#### Spiroxamine and its metabolites

Table 8.9‑11: Input parameters related to active substance Spiroxamine and metabolites for PECsw/sed calculations

| Compound | Spiroxamine | M01 | M02 | M03\* | M06 | Value in accordance to EU endpoint y/n/  Reference |
| --- | --- | --- | --- | --- | --- | --- |
| Molecular weight [g/mol] | 297.5 | 269.4 | 255.4 | 313.5 (EpiSuite 4.11 calculation, appendix 3) | 327.5 | y / EFSA Journal 2010;8(10):1719 |
| Water solubility [mg/L] | 470 (20 °C) at pH 5 | 14.8 | 46.6 | 0.76 (20 °C) (EpiSuite 4.11 calculation, appendix 3) | 1000 (default) |
| Saturated vapour pressure [Pa] | 9.7 x 10-3 (20 °C) | Not required | Not required | Not required | Not required |
| Diffusion coefficient in water [m²/d] | 4.3 x 10-5 | Not required | Not required | Not required | Not required | FOCUS default |
| Diffusion coefficient in air [m²/d] | 0.43 | Not required | Not required | Not required | Not required |
| KOC [L/kg] | 2415  (arith. mean) | 4816  (arith. mean) | 4165  (arith. mean) | 848  (arith. mean)  (confirmatory data) | 0.0001  (default) | y / EFSA Journal 2010;8(10):1719 |
| KOM = KOC / 1.724 | 1400 | 2794 | 2416 | 491.9 | - | calculated |
| Freundlich Exponent  1/n | 0.82 | Not required | Not required | Not required | Not required | y / EFSA Journal 2010;8(10):1719 |
| Plant Uptake | 0 | Not required | Not required | Not required | Not required | Default |
| Wash-Off factor from Crop [1/mm] | 0.05 (MACRO)  0.50 (PRZM) | Not required | Not required | Not required | Not required | FOCUS default |
| DT50, soil [d] | 45.0 (geomean, field) | 33.9 (geomean, field normalised) | 33.4 (geomean, field normalised) | 21 (geomean, lab) (confirmatory data) | 1000 (default) | y / EFSA Journal 2010;8(10):1719 |
| DT50, water [d] | 3.1 (geomean, level P-II) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) |
| DT50, sed [d] | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) |
| DT50, whole system [d] | 66.2 | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) |
| Maximum occurrence observed (% molar basis with respect to the parent) | -- | Water: 0.0001 %  Soil: 8.8 % | Water: 0.0001 %  Soil: 5.8 % | Water: 11.3 %  Sediment: 1.5 %  Soil: 7.9 % | Water: 31.3 %  Soil: 0.0001 % |
| Formation fraction in soil | -- | Not required | Not required | Not required | Not required |

\*PECsw/sed of metabolite M03 has been calculated by considering the metabolite as parent and using a corrected application rate of 316.1 g/ha using a 100% formation rate

***Consideration of deposition after volatilisation in FOCUS***

According to the FOCUS Air Group (SANCO/10553/2006 Rev. 2 June 2008) deposition after volatilisation is not significant compared to spray drift within the short-range (i.e. < 2 m). Consequently, deposition from volatilisation needs only be considered in addition to drift for distances greater than 1 m (FOCUS Step 4).

In conclusion, deposition after volatilisation need only be considered in the surface water assessment if drift mitigation at FOCUS SW Step 4 is required. In this case the deposition after volatilisation should additionally be considered, taking into account the temporal dynamics of the process.

The deposition after volatilisation calculated for 0-24 h for FOCUS Step 4 was calculated using the EVA 3 (rev.2 of 20.09.2017) spreadsheet.

**Table 8.9‑12: Spiroxamine deposition rates at different times [mg/m2] calculated by EVA 3 rev. 2h (recommended by FOCUS AIR)**

| Application rate [kg/ha]: | **Use no. 1 (300 g a.i./ha)** | |
| --- | --- | --- |
| Crop: | Cereals | |
| Drift scenario: | Arable crops | |
|  | **Deposition rates [mg/m²] at 10 m** | **Deposition rates [mg/m²] at 20 m** |
| v/d in 24 h | 0.953% | 0.553% |
| **Time [h]** |  |  |
| 0 - 1 | 0.0259 | 0.0150 |
| 1 - 2 | 0.0259 | 0.0150 |
| 2 - 3 | 0.0259 | 0.0150 |
| 3 - 4 | 0.0259 | 0.0150 |
| 4 - 5 | 0.0130 | 0.0075 |
| 5 - 6 | 0.0130 | 0.0075 |
| 6 - 7 | 0.0130 | 0.0075 |
| 7 - 8 | 0.0130 | 0.0075 |
| 8 - 9 | 0.0130 | 0.0075 |
| 9 - 10 | 0.0130 | 0.0075 |
| 10 - 11 | 0.0130 | 0.0075 |
| 11 - 12 | 0.0130 | 0.0075 |
| 12 - 13 | 0.0065 | 0.0038 |
| 13 - 14 | 0.0065 | 0.0038 |
| 14 - 15 | 0.0065 | 0.0038 |
| 15 - 16 | 0.0065 | 0.0038 |
| 16 - 17 | 0.0065 | 0.0038 |
| 17 - 18 | 0.0065 | 0.0038 |
| 18 - 19 | 0.0065 | 0.0038 |
| 19 - 20 | 0.0065 | 0.0038 |
| 20 - 21 | 0.0065 | 0.0038 |
| 21 - 22 | 0.0065 | 0.0038 |
| 22 - 23 | 0.0065 | 0.0038 |
| 23 - 24 | 0.0065 | 0.0038 |

PECsw/sed

Table 8.9‑13: FOCUS Step 1-2 and 3 PECsw and PECsed for Spiroxamine following single application of ULTRACENT 460 EC to winter cereals

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | | 26.4557 | --- | 21.9094 | 581.9387 |
| Step 2 | | | | | | |
| Northern Europe | March-May | | 4.0930 | --- | 2.1360 | 97.6566 |
| June-Sept | | 4.0930 | --- | 2.1360 | 97.6566 |
| Oct-Feb | | 9.4404 | --- | 4.9572 | 226.7063 |
| Southern Europe | March-May | | 7.6580 | --- | 4.0168 | 183.6897 |
| June-Sept | | 5.8755 | --- | 3.0764 | 140.6732 |
| Oct-Feb | | 7.6580 | --- | 4.0168 | 183.6897 |
| Step 3 Early application | | | | | | |
| D1 | | Ditch | 1.897 | Spray drift | --- | 1.956 |
| D1 | | Stream | 1.475 | Spray drift | --- | 0.06278 |
| D2 | | Ditch | 1.908 | Spray drift | --- | 2.605 |
| D2 | | Stream | 1.621 | Spray drift | --- | 0.2765 |
| D3 | | Ditch | 1.89 | Spray drift | --- | 1.249 |
| D4 | | Pond | 0.0649 | Spray drift | --- | 0.3347 |
| D4 | | Stream | 1.397 | Spray drift | --- | 0.04137 |
| D5 | | Pond | 0.06491 | Spray drift | --- | 0.2779 |
| D5 | | Stream | 1.508 | Spray drift | --- | 0.04395 |
| D6 | | Ditch | 1.868 | Spray drift | --- | 0.5969 |
| R1 | | Pond | 0.06494 | Spray drift | --- | 0.3968 |
| R1 | | Stream | 1.245 | Spray drift | --- | 2.966 |
| R3 | | Stream | 1.749 | Spray drift | --- | 2.748 |
| R4 | | Stream | 1.25 | Spray drift | --- | 3.228 |
| Step 3 Late application | | | | | | |
| D1 | | Ditch | 1.913 | Spray drift | --- | 4.537 |
| D1 | | Stream | 1.673 | Spray drift | --- | 1 |
| D2 | | Ditch | 1.915 | Spray drift | --- | 3.997 |
| D2 | | Stream | 1.704 | Spray drift | --- | 3.525 |
| D3 | | Ditch | 1.894 | Spray drift | --- | 1.424 |
| D4 | | Pond | 0.06494 | Spray drift | --- | 0.2175 |
| D4 | | Stream | 1.577 | Spray drift | --- | 0.1474 |
| D5 | | Pond | 0.06494 | Spray drift | --- | 0.2798 |
| D5 | | Stream | 1.597 | Spray drift | --- | 0.07251 |
| D6 | | Ditch | 1.868 | Spray drift | --- | 0.5969 |
| R1 | | Pond | 0.06493 | Spray drift | --- | 0.5403 |
| R1 | | Stream | 1.24 | Spray drift | --- | 4.931 |
| R3 | | Stream | 1.759 | Spray drift | --- | 3.176 |
| R4 | | Stream | 1.25 | Spray drift | --- | 5.154 |

\* twa-time as required by ecotox

Table 8.9‑14: FOCUS Step 4 PECsw and PECsed for Spiroxamine following single application to winter cereals

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Scenario** | | **Waterbody** | | **Max PECsw** | | **Dominant entry route** | | **21 d- PECsw,twa** | | **Max PECsed** |
| **FOCUS** | | **[μg/L]** | | **[µg/L]** | | **[μg/kg]** |
|  | | **cereals, winter** | | | | | | |
| Step 4 Early application **(10 m no spray buffer zone)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.272 | | Spray drift | | --- | | 0.2922 | |
| D1 | Stream | | 0.2851 | | Spray drift | | --- | | 0.01215 | |
| D2 | Ditch | | 0.2737 | | Spray drift | | --- | | 0.3854 | |
| D2 | Stream | | 0.3134 | | Spray drift | | --- | | 0.05376 | |
| D3 | Ditch | | 0.2711 | | Spray drift | | --- | | 0.1836 | |
| D4 | Pond | | 0.04032 | | Spray drift | | --- | | 0.2139 | |
| D4 | Stream | | 0.27 | | Spray drift | | --- | | 0.008004 | |
| D5 | Pond | | 0.04033 | | Spray drift | | --- | | 0.1774 | |
| D5 | Stream | | 0.2916 | | Spray drift | | --- | | 0.008587 | |
| D6 | Ditch | | 0.268 | | Spray drift | | --- | | 0.08682 | |
| R1 | Pond | | 0.04036 | | Spray drift | | --- | | 0.3454 | |
| R1 | Stream | | 0.3526 | | Runoff | | --- | | 2.945 | |
| R3 | Stream | | 0.4327 | | Runoff | | --- | | 2.639 | |
| R4 | Stream | | 0.718 | | Runoff | | --- | | 3.188 | |
| Step 4 Early application **(10 m no spray buffer zone, 50 % nozzle reduction)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.1359 | | Spray drift | | --- | | 0.1477 | |
| D1 | Stream | | 0.1424 | | Spray drift | | --- | | 0.00607 | |
| D2 | Ditch | | 0.1367 | | Spray drift | | --- | | 0.1942 | |
| D2 | Stream | | 0.1565 | | Spray drift | | --- | | 0.02691 | |
| D3 | Ditch | | 0.1354 | | Spray drift | | --- | | 0.09235 | |
| D4 | Pond | | 0.02013 | | Spray drift | | --- | | 0.111 | |
| D4 | Stream | | 0.1349 | | Spray drift | | --- | | 0.005202 | |
| D5 | Pond | | 0.02014 | | Spray drift | | --- | | 0.09197 | |
| D5 | Stream | | 0.1457 | | Spray drift | | --- | | 0.00434 | |
| D6 | Ditch | | 0.1338 | | Spray drift | | --- | | 0.0436 | |
| R1 | Pond | | 0.0259 | | Runoff | | --- | | 0.3022 | |
| R1 | Stream | | 0.3526 | | Runoff | | --- | | 2.943 | |
| R3 | Stream | | 0.4327 | | Runoff | | --- | | 2.629 | |
| R4 | Stream | | 0.718 | | Runoff | | --- | | 3.183 | |
| Step 4 Early application **(10 m unsprayed vegetated buffer zone)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.272 | | Spray drift | | --- | | 0.2922 | |
| D1 | Stream | | 0.2851 | | Spray drift | | --- | | 0.01215 | |
| D2 | Ditch | | 0.2737 | | Spray drift | | --- | | 0.3854 | |
| D2 | Stream | | 0.3134 | | Spray drift | | --- | | 0.05376 | |
| D3 | Ditch | | 0.2711 | | Spray drift | | --- | | 0.1836 | |
| D4 | Pond | | 0.04032 | | Spray drift | | --- | | 0.2139 | |
| D4 | Stream | | 0.27 | | Spray drift | | --- | | 0.008004 | |
| D5 | Pond | | 0.04033 | | Spray drift | | --- | | 0.1774 | |
| D5 | Stream | | 0.2916 | | Spray drift | | --- | | 0.008587 | |
| D6 | Ditch | | 0.268 | | Spray drift | | --- | | 0.08682 | |
| R1 | Pond | | 0.04034 | | Spray drift | | --- | | 0.1904 | |
| R1 | Stream | | 0.2406 | | Spray drift | | --- | | 0.5561 | |
| R3 | Stream | | 0.3382 | | Spray drift | | --- | | 0.547 | |
| R4 | Stream | | 0.3263 | | Runoff | | --- | | 0.7497 | |
| Step 4 Early application **(10 m vegetated buffer zone, 50 % nozzle reduction)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.1359 | | Spray drift | | --- | | 0.1477 | |
| D1 | Stream | | 0.1424 | | Spray drift | | --- | | 0.00607 | |
| D2 | Ditch | | 0.1367 | | Spray drift | | --- | | 0.1942 | |
| D2 | Stream | | 0.1565 | | Spray drift | | --- | | 0.02691 | |
| D3 | Ditch | | 0.1354 | | Spray drift | | --- | | 0.09235 | |
| D4 | Pond | | 0.02013 | | Spray drift | | --- | | 0.111 | |
| D4 | Stream | | 0.1349 | | Spray drift | | --- | | 0.005202 | |
| D5 | Pond | | 0.02014 | | Spray drift | | --- | | 0.09197 | |
| D5 | Stream | | 0.1457 | | Spray drift | | --- | | 0.00434 | |
| D6 | Ditch | | 0.1338 | | Spray drift | | --- | | 0.0436 | |
| R1 | Pond | | 0.02015 | | Spray drift | | --- | | 0.1335 | |
| R1 | Stream | | 0.16 | | Runoff | | --- | | 0.5508 | |
| R3 | Stream | | 0.1972 | | Runoff | | --- | | 0.5365 | |
| R4 | Stream | | 0.3263 | | Runoff | | --- | | 0.7443 | |
| Step 4 Early application **(20 m unsprayed vegetated buffer zone)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.1412 | | Spray drift | | --- | | 0.1534 | |
| D1 | Stream | | 0.148 | | Spray drift | | --- | | 0.006309 | |
| D2 | Ditch | | 0.1421 | | Spray drift | | --- | | 0.2017 | |
| D2 | Stream | | 0.1627 | | Spray drift | | --- | | 0.02797 | |
| D3 | Ditch | | 0.1407 | | Spray drift | | --- | | 0.09595 | |
| D4 | Pond | | 0.0269 | | Spray drift | | --- | | 0.146 | |
| D4 | Stream | | 0.1402 | | Spray drift | | --- | | 0.005234 | |
| D5 | Pond | | 0.02691 | | Spray drift | | --- | | 0.121 | |
| D5 | Stream | | 0.1514 | | Spray drift | | --- | | 0.004507 | |
| D6 | Ditch | | 0.1391 | | Spray drift | | --- | | 0.0453 | |
| R1 | Pond | | 0.02692 | | Spray drift | | --- | | 0.1188 | |
| R1 | Stream | | 0.1249 | | Spray drift | | --- | | 0.2229 | |
| R3 | Stream | | 0.1755 | | Spray drift | | --- | | 0.2275 | |
| R4 | Stream | | 0.1708 | | Runoff | | --- | | 0.3305 | |
| Step 4 Early application (incl. deposition\*\***)** | | | | | | | | | | |
| D1 | Ditch | | 0.9102 | | Drainage | | --- | | 1.262 | |
| D1 | Stream | | 0.3952 | | Spray drift | | --- | | 0.05291 | |
| D2 | Ditch | | 1.027 | | Drainage | | --- | | 1.506 | |
| D2 | Stream | | 0.5778 | | Drainage | | --- | | 0.2435 | |
| D3 | Ditch | | 0.777 | | Drainage | | --- | | 0.7812 | |
| D4 | Pond | | 0.1685 | | Drainage | | --- | | 0.8692 | |
| D4 | Stream | | 0.3456 | | Spray drift | | --- | | 0.034 | |
| D5 | Pond | | 0.1652 | | Drainage | | --- | | 0.7248 | |
| D5 | Stream | | 0.3713 | | Spray drift | | --- | | 0.03682 | |
| D6 | Ditch | | 0.5588 | | Drainage | | --- | | 0.3884 | |
| R1 | Pond | | 0.1657 | | Runoff | | --- | | 0.6942 | |
| R1 | Stream | | 0.4823 | | Runoff | | --- | | 2.962 | |
| R3 | Stream | | 0.7117 | | Runoff | | --- | | 2.721 | |
| R4 | Stream | | 0.718 | | Runoff | | --- | | 3.22 | |
| Step 4 Late application **(10 m no spray buffer zone)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.2744 | | Spray drift | | --- | | 0.7134 | |
| D1 | Stream | | 0.3235 | | Spray drift | | --- | | 0.1968 | |
| D2 | Ditch | | 0.2747 | | Spray drift | | --- | | 0.6195 | |
| D2 | Stream | | 0.3294 | | Spray drift | | --- | | 0.7223 | |
| D3 | Ditch | | 0.2716 | | Spray drift | | --- | | 0.2103 | |
| D4 | Pond | | 0.04035 | | Spray drift | | --- | | 0.1382 | |
| D4 | Stream | | 0.3048 | | Spray drift | | --- | | 0.02857 | |
| D5 | Pond | | 0.04035 | | Spray drift | | --- | | 0.1785 | |
| D5 | Stream | | 0.3088 | | Spray drift | | --- | | 0.01414 | |
| D6 | Ditch | | 0.268 | | Spray drift | | --- | | 0.08682 | |
| R1 | Pond | | 0.04231 | | Runoff | | --- | | 0.4896 | |
| R1 | Stream | | 0.5217 | | Runoff | | --- | | 4.912 | |
| R3 | Stream | | 0.4118 | | Runoff | | --- | | 3.003 | |
| R4 | Stream | | 0.6687 | | Runoff | | --- | | 5.082 | |
| Step 4 Late application **(10 m no spray buffer zone, 50 % nozzle reduction)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.1371 | | Spray drift | | --- | | 0.3668 | |
| D1 | Stream | | 0.1616 | | Spray drift | | --- | | 0.09884 | |
| D2 | Ditch | | 0.1372 | | Spray drift | | --- | | 0.3167 | |
| D2 | Stream | | 0.1645 | | Spray drift | | --- | | 0.3681 | |
| D3 | Ditch | | 0.1357 | | Spray drift | | --- | | 0.1059 | |
| D4 | Pond | | 0.02014 | | Spray drift | | --- | | 0.07111 | |
| D4 | Stream | | 0.1522 | | Spray drift | | --- | | 0.01428 | |
| D5 | Pond | | 0.02014 | | Spray drift | | --- | | 0.09247 | |
| D5 | Stream | | 0.1542 | | Spray drift | | --- | | 0.007124 | |
| D6 | Ditch | | 0.1338 | | Spray drift | | --- | | 0.0436 | |
| R1 | Pond | | 0.0406 | | Runoff | | --- | | 0.4472 | |
| R1 | Stream | | 0.5217 | | Runoff | | --- | | 4.91 | |
| R3 | Stream | | 0.4118 | | Runoff | | --- | | 2.99 | |
| R4 | Stream | | 0.6687 | | Runoff | | --- | | 5.072 | |
| Step 4 Late application **(10 m unsprayed vegetated buffer zone)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.2744 | | Spray drift | | --- | | 0.7134 | |
| D1 | Stream | | 0.3235 | | Spray drift | | --- | | 0.1968 | |
| D2 | Ditch | | 0.2747 | | Spray drift | | --- | | 0.6195 | |
| D2 | Stream | | 0.3294 | | Spray drift | | --- | | 0.7223 | |
| D3 | Ditch | | 0.2716 | | Spray drift | | --- | | 0.2103 | |
| D4 | Pond | | 0.04035 | | Spray drift | | --- | | 0.1382 | |
| D4 | Stream | | 0.3048 | | Spray drift | | --- | | 0.02857 | |
| D5 | Pond | | 0.04035 | | Spray drift | | --- | | 0.1785 | |
| D5 | Stream | | 0.3088 | | Spray drift | | --- | | 0.01414 | |
| D6 | Ditch | | 0.268 | | Spray drift | | --- | | 0.08682 | |
| R1 | Pond | | 0.04034 | | Spray drift | | --- | | 0.2318 | |
| R1 | Stream | | 0.2397 | | Spray drift | | --- | | 0.9115 | |
| R3 | Stream | | 0.3402 | | Spray drift | | --- | | 0.6224 | |
| R4 | Stream | | 0.3047 | | Runoff | | --- | | 1.176 | |
| Step 4 Late application **(10 m vegetated buffer zone, 50 % nozzle reduction)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.1371 | | Spray drift | | --- | | 0.3668 | |
| D1 | Stream | | 0.1616 | | Spray drift | | --- | | 0.09884 | |
| D2 | Ditch | | 0.1372 | | Spray drift | | --- | | 0.3167 | |
| D2 | Stream | | 0.1645 | | Spray drift | | --- | | 0.3681 | |
| D3 | Ditch | | 0.1357 | | Spray drift | | --- | | 0.1059 | |
| D4 | Pond | | 0.02014 | | Spray drift | | --- | | 0.07111 | |
| D4 | Stream | | 0.1522 | | Spray drift | | --- | | 0.01428 | |
| D5 | Pond | | 0.02014 | | Spray drift | | --- | | 0.09247 | |
| D5 | Stream | | 0.1542 | | Spray drift | | --- | | 0.007124 | |
| D6 | Ditch | | 0.1338 | | Spray drift | | --- | | 0.0436 | |
| R1 | Pond | | 0.02014 | | Spray drift | | --- | | 0.1773 | |
| R1 | Stream | | 0.2367 | | Runoff | | --- | | 0.9064 | |
| R3 | Stream | | 0.1877 | | Runoff | | --- | | 0.6081 | |
| R4 | Stream | | 0.3047 | | Runoff | | --- | | 1.166 | |
| Step 4 Late application **(20 m unsprayed vegetated buffer zone)** excl. deposition) | | | | | | | | | | |
| D1 | Ditch | | 0.1424 | | Spray drift | | --- | | 0.3806 | |
| D1 | Stream | | 0.1679 | | Spray drift | | --- | | 0.1027 | |
| D2 | Ditch | | 0.1426 | | Spray drift | | --- | | 0.3287 | |
| D2 | Stream | | 0.171 | | Spray drift | | --- | | 0.3822 | |
| D3 | Ditch | | 0.141 | | Spray drift | | --- | | 0.11 | |
| D4 | Pond | | 0.02692 | | Spray drift | | --- | | 0.09385 | |
| D4 | Stream | | 0.1582 | | Spray drift | | --- | | 0.01484 | |
| D5 | Pond | | 0.02692 | | Spray drift | | --- | | 0.1217 | |
| D5 | Stream | | 0.1603 | | Spray drift | | --- | | 0.007399 | |
| D6 | Ditch | | 0.1391 | | Spray drift | | --- | | 0.0453 | |
| R1 | Pond | | 0.02691 | | Spray drift | | --- | | 0.1397 | |
| R1 | Stream | | 0.1244 | | Spray drift | | --- | | 0.3576 | |
| R3 | Stream | | 0.1766 | | Spray drift | | --- | | 0.2585 | |
| R4 | Stream | | 0.1596 | | Runoff | | --- | | 0.514 | |
| Step 4 Late application (incl. deposition\*\***)** | | | | | | | | | | |
| D1 | Ditch | | 1.022 | | Drainage | | --- | | 2.9 | |
| D1 | Stream | | 0.8604 | | Drainage | | --- | | 0.7903 | |
| D2 | Ditch | | 0.9992 | | Drainage | | --- | | 2.536 | |
| D2 | Stream | | 0.3423 | | Drainage | | --- | | 0.852 | |
| D3 | Ditch | | 0.7859 | | Drainage | | --- | | 0.892 | |
| D4 | Pond | | 0.1636 | | Drainage | | --- | | 0.5671 | |
| D4 | Stream | | 0.4988 | | Drainage | | --- | | 0.1218 | |
| D5 | Pond | | 0.1655 | | Drainage | | --- | | 0.7299 | |
| D5 | Stream | | 0.4325 | | Spray drift | | --- | | 0.06057 | |
| D6 | Ditch | | 0.5588 | | Drainage | | --- | | 0.3884 | |
| R1 | Pond | | 0.1625 | | Runoff | | --- | | 0.8438 | |
| R1 | Stream | | 0.5217 | | Runoff | | --- | | 4.927 | |
| R3 | Stream | | 0.7341 | | Runoff | | --- | | 3.127 | |
| R4 | Stream | | 0.6687 | | Runoff | | --- | | 5.14 | |

\* twa-time as required by ecotox

\*\* Consideration of deposition after volatilisation is consider as additional data only.

Table 8.9‑15: FOCUS Step 1-2, 3 and FOCUS SWAN PECsw and PECsed for Spiroxamine following single application of ULTRACENT 460 EC to spring cereals

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, spring** | | | |
| Step 1 | --- | | 26.4557 | --- | 21.9094 | 581.9387 |
| Step 2 | | | | | | |
| Northern Europe | March-May | | 4.0930 | --- | 2.1360 | 97.6566 |
| June-Sept | | 4.0930 | --- | 2.1360 | 97.6566 |
| Oct-Feb | | 9.4404 | --- | 4.9572 | 226.7063 |
| Southern Europe | March-May | | 7.6580 | --- | 4.0168 | 183.6897 |
| June-Sept | | 5.8755 | --- | 3.0764 | 140.6732 |
| Oct-Feb | | 7.6580 | --- | 4.0168 | 183.6897 |
| Step 3 Early application | | | | | | |
| D1 | | Ditch | 1.913 | Spray drift | --- | 4.537 |
| D1 | | Stream | 1.673 | Spray drift | --- | 1 |
| D3 | | Ditch | 1.892 | Spray drift | --- | 1.308 |
| D4 | | Pond | 0.06494 | Spray drift | --- | 0.217 |
| D4 | | Stream | 1.546 | Spray drift | --- | 0.1078 |
| D5 | | Pond | 0.06493 | Spray drift | --- | 0.2793 |
| D5 | | Stream | 1.588 | Spray drift | --- | 0.06848 |
| R4 | | Stream | 1.25 | Spray drift | --- | 5.347 |
| **Step 4 (10 m no spray buffer zone)** | | | | | | |
| D1 | | Ditch | 0.2744 | Spray drift | --- | 0.7134 |
| D1 | | Stream | 0.3235 | Spray drift | --- | 0.1968 |
| D3 | | Ditch | 0.2713 | Spray drift | --- | 0.1926 |
| D4 | | Pond | 0.04035 | Spray drift | --- | 0.1379 |
| D4 | | Stream | 0.299 | Spray drift | --- | 0.02087 |
| D5 | | Pond | 0.04034 | Spray drift | --- | 0.1782 |
| D5 | | Stream | 0.3071 | Spray drift | --- | 0.01335 |
| R4 | | Stream | 0.7174 | Runoff | --- | 5.274 |
| **Step 4 (10 m no spray buffer zone, 50 % nozzle reduction)** | | | | | | |
| D1 | | Ditch | 0.1371 | Spray drift | --- | 0.3668 |
| D1 | | Stream | 0.1616 | Spray drift | --- | 0.09884 |
| D3 | | Ditch | 0.1355 | Spray drift | --- | 0.09695 |
| D4 | | Pond | 0.02014 | Spray drift | --- | 0.07095 |
| D4 | | Stream | 0.1493 | Spray drift | --- | 0.01043 |
| D5 | | Pond | 0.02014 | Spray drift | --- | 0.0923 |
| D5 | | Stream | 0.1534 | Spray drift | --- | 0.006733 |
| R4 | | Stream | 0.7174 | Runoff | --- | 5.265 |
| Step 4 **(10 m unsprayed vegetated buffer zone)** excl. deposition) | | | | | | |
| D1 | | Ditch | 0.2744 | Spray drift | --- | 0.7134 |
| D1 | | Stream | 0.3235 | Spray drift | --- | 0.1968 |
| D3 | | Ditch | 0.2713 | Spray drift | --- | 0.1926 |
| D4 | | Pond | 0.04035 | Spray drift | --- | 0.1379 |
| D4 | | Stream | 0.299 | Spray drift | --- | 0.02087 |
| D5 | | Pond | 0.04034 | Spray drift | --- | 0.1782 |
| D5 | | Stream | 0.3071 | Spray drift | --- | 0.01335 |
| R4 | | Stream | 0.326 | Runoff | --- | 1.235 |
| **Step 4 (20 m no spray buffer zone)** | | | | | | |
| D1 | | Ditch | 0.1424 | Spray drift | --- | 0.3806 |
| D1 | | Stream | 0.1679 | Spray drift | --- | 0.1027 |
| D3 | | Ditch | 0.1408 | Spray drift | --- | 0.1007 |
| D4 | | Pond | 0.02692 | Spray drift | --- | 0.09365 |
| D4 | | Stream | 0.1552 | Spray drift | --- | 0.01084 |
| D5 | | Pond | 0.02692 | Spray drift | --- | 0.1215 |
| D5 | | Stream | 0.1594 | Spray drift | --- | 0.006993 |
| R4 | | Stream | 0.7174 | Runoff | --- | 5.266 |
| Step 4 **(20 m unsprayed vegetated buffer zone)** excl. deposition) | | | | | | |
| D1 | | Ditch | 0.1424 | Spray drift | --- | 0.3806 |
| D1 | | Stream | 0.1679 | Spray drift | --- | 0.1027 |
| D3 | | Ditch | 0.1408 | Spray drift | --- | 0.1007 |
| D4 | | Pond | 0.02692 | Spray drift | --- | 0.09365 |
| D4 | | Stream | 0.1552 | Spray drift | --- | 0.01084 |
| D5 | | Pond | 0.02692 | Spray drift | --- | 0.1215 |
| D5 | | Stream | 0.1594 | Spray drift | --- | 0.006993 |
| R4 | | Stream | 0.1706 | Runoff | --- | 0.5429 |
| **Step 4 (10 m no spray buffer zone, incl. deposition\*\*)** | | | | | | |
| D1 | | Ditch | 1.022 | Drainage | --- | 2.9 |
| D1 | | Stream | 0.8604 | Drainage | --- | 0.7903 |
| D3 | | Ditch | 0.7721 | Drainage | --- | 0.8196 |
| D4 | | Pond | 0.1635 | Drainage | --- | 0.566 |
| D4 | | Stream | 0.4686 | Drainage | --- | 0.08931 |
| D5 | | Pond | 0.1655 | Drainage | --- | 0.7286 |
| D5 | | Stream | 0.426 | Spray drift | --- | 0.05738 |
| R4 | | Stream | 0.7174 | Runoff | --- | 5.332 |

\* twa-time as required by ecotox

\*\* Consideration of deposition after volatilisation is consider as additional data only.

Metabolites of Spiroxamine

Table 8.9‑16: FOCUS Step 1-2 PECsw and PECsed for metabolite M01 following single application to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | 1.0738 | --- | 1.0660 | 51.7134 |
| Step 2 | | | | | |
| Northern Europe | March-May | 0.1583 | --- | 0.1572 | 7.6244 |
| June-Sept | 0.1583 | --- | 0.1572 | 7.6244 |
| Oct-Feb | 0.3958 | --- | 0.3929 | 19.0609 |

\* twa-time as required by ecotox

Table 8.9‑17: FOCUS Step 1-2 PECsw and PECsed for metabolite M02 following single application to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | 0.7598 | --- | 0.7543 | 31.6462 |
| Step 2 | | | | | |
| Northern Europe | March-May | 0.1119 | --- | 0.1111 | 4.6601 |
| June-Sept | 0.1119 | --- | 0.1111 | 4.6601 |
| Oct-Feb | 0.2797 | --- | 0.2777 | 11.6501 |

\* twa-time as required by ecotox

Table 8.9‑18: FOCUS Step 1-2 PECsw and PECsed for metabolite M03 following single application to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | 52.3595 | --- | 50.4855 | 430.6282 |
| Step 2 | | | | | |
| Northern Europe | March-May | 8.5880 | --- | 8.2413 | 70.2875 |
| June-Sept | 8.5880 | --- | 8.2413 | 70.2875 |
| Oct-Feb | 18.9886 | --- | 18.5666 | 158.4238 |

\* twa-time as required by ecotox

Table 8.9‑19: FOCUS Step 1-2 PECsw and PECsed for metabolite M06 following single application to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scenario** | **Waterbody** | **Max PECsw** | **Dominant entry route** | **21 d- PECsw,twa** | **Max PECsed** |
| **FOCUS** | **[μg/L]** | **[µg/L]\*** | **[μg/kg]** |
|  | **cereals, winter** | | | |
| Step 1 | --- | 35.4071 | --- | 35.1506 | 0.0000 |
| Step 2 | | | | | |
| Northern Europe | March-May | 6.1316 | --- | 6.0872 | 0.0000 |
| June-Sept | 6.1316 | --- | 6.0872 | 0.0000 |
| Oct-Feb | 13.9070 | --- | 13.8063 | 0.0000 |

\* twa-time as required by ecotox

#### PECsw/sed of ULTRACENT 460 EC

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.~~

Calculations were made only for spray drift as a mitigation path, using the ‘Drift Calculator’ built in the FOCUS SWASH v3.1 using the highest application rate of 1 L product/ha and a density of 0.985 g/cm3

The following table shows the results of the calculations carried out assuming a variable width of the buffer zones.

Table 8.9‑20: FOCUS PECsw for ULTRACENT 460 EC using single application to winter/spring cereals

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type of water body | Calculated PECsw [µg/L] and buffer zones: | | | | |
| Buffer zone defined by the FOCUS Group | 5 m | 10 m | 16 m | 20 m |
| Ditch | 6.33 |  | 0.91 | 0.58 | 0.47 |
| Pond | 0.22 | 0.19 | 0.13 | 0.10 | 0.09 |
| Stream | 4.70 | 1.71 | 0.91 | 0.58 | 0.47 |

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

No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.

*The following information can be found in the evaluation reports that were compiled for the authorization of INPUT 460 EC (R-61/2011) in Poland:*

Prothioconazole

The determined saturated vapour pressure of JAU6476 is much lower than 4E-7 Pa, and the value of Henry's constant is H <<3E-5 [Pa\*m3\*mol-1]. On this basis, it was concluded that prothioconazole has a very low volatility. The DT50 calculated for this substance in the troposphere is 3 hours. On this basis, the applicant concluded that the likelihood of atmospheric accumulation of the substance and secondary contamination through dry and wet deposition from the atmosphere is low. A DT50 value was also calculated for one of the prothioconazole degradation products, JAU6476-desthio, in the troposphere. It amounts to 23 hours. On this basis, the applicant concluded that the likelihood of atmospheric accumulation and secondary contamination due to dry and wet deposition from the atmosphere is low. Calculations of predicted environmental concentrations in air - PECAir, were not submitted for assessment.

Spiroxamine

For a mixture of isomers at T = 20 °C, the determined saturated vapour pressure of spiroxamine is 9.7E-3 Pa. The estimated DT50 of this substance in the troposphere is <3 hours. On this basis, the applicant concluded that the likelihood of atmospheric accumulation of the substance and secondary contamination through dry and wet deposition from the atmosphere is low. Calculations of predicted environmental concentrations in air - PECAir, were not submitted for assessment.

|  |
| --- |
| **Review Comments:**  The justification is accepted. |

1. Lists of data considered in support of the evaluation

No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder XXXX), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.

List of data submitted by the applicant and relied on

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

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

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

The following tables are to be completed by MS

List of data submitted by the applicant and not relied on

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

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

| Data point | Author(s) | Year | Title Company Report No.  Source (where different from company) GLP or GEP status Published or not | Vertebrate study  Y/N | Owner |
| --- | --- | --- | --- | --- | --- |
| IIA, 7.1.1.2. | Schäfer, H., Krohn, J. | 2000 | Report. Dissipation of Spiroxamine in Soils – Survey of Results from Studies Conducted under Field and Laboratory Conditions;  Bayer AG;  MR-251/00;  GLP: No (not necessary)  Unpublished | N | Bayer AG |
| IA, 9.2.1. | Schad, T., | 2004 | Predicted Environmental Concentrations of Prothioconazole (JAU6476) and its Metabolites, JAU6476-Desthio and JAU6476-S-methyl in Ground Water Recharge Based on Calculations with FOCUS-PEARL. Use in Winter Cereals and Rape in France  Bayer CropScience AG; MEF-04/225  GLP: No (not necessary)  Unpublished | N | Bayer AG |
| IA, 9.2.1. | Schad, T., | 2004 | Predicted Environmental Concentrations of Spiroxamine in Ground Water Recharge Based on Calculations with FOCUS-PEARL. Use in Winter Cereals and Rape in France  Bayer CropScience AG;  MEF-04/227  GLP: No (not necessary)  Unpublished | N | Bayer AG |
| IA, 9.2.3 | Shad, T., Zerbe, P., | 2007 | Predicted Environmental Concentrations of Prothioiconazole (JAU6476) and its Metabolites, JAU6476-Desthio, JAU6476-S-methyl and 1,2,4-Triazole in Surface Water Bodies Base on the Tiered FOCUSSW Approach  Bayer CropScience AG; MEF-07/252  GLP: No (not necessary)  Unpublished | N | Bayer AG |

1. Detailed evaluation of the new Annex II studies

No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC.

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

~~No data is submitted in support of the application for authorization of ULTRACENT 460 EC. Reference is made to the unprotected data and dossier of INPUT 460 EC (R-61/2011, authorization holder Bayer AG), in accordance with Article 34 of Regulation 1107/2009/EC. It was not considered necessary to submit additional data and the evaluator is referred to the registration report of INPUT 460 EC~~.

EPI Suite Results for Spiroxamine metabolite M03 are presented below

|  |
| --- |
| EPI Suite Results For CAS |



SMILES : CC(C)(C)C1CCC2(CC1)OCC(CN(=O)(CC)CCC)O2

CHEM :

MOL FOR: C18 H35 N1 O3

MOL WT : 313.48

------------------------------ EPI SUMMARY (v4.11) --------------------------

Physical Property Inputs:

Log Kow (octanol-water): ------

Boiling Point (deg C) : ------

Melting Point (deg C) : ------

Vapor Pressure (mm Hg) : ------

Water Solubility (mg/L): ------

Henry LC (atm-m3/mole) : ------

Log Octanol-Water Partition Coef (SRC):

Log Kow (KOWWIN v1.68 estimate) = 4.74

Boiling Pt, Melting Pt, Vapor Pressure Estimations (MPBPVP v1.43):

Boiling Pt (deg C): 489.63 (Adapted Stein & Brown method)

Melting Pt (deg C): 207.75 (Mean or Weighted MP)

VP(mm Hg,25 deg C): 5.79E-010 (Modified Grain method)

VP (Pa, 25 deg C) : 7.72E-008 (Modified Grain method)

Subcooled liquid VP: 5.02E-008 mm Hg (25 deg C, Mod-Grain method)

: 6.69E-006 Pa (25 deg C, Mod-Grain method)

Water Solubility Estimate from Log Kow (WSKOW v1.42):

Water Solubility at 25 deg C (mg/L): 0.9191

log Kow used: 4.74 (estimated)

no-melting pt equation used

Water Sol Estimate from Fragments:

Wat Sol (v1.01 est) = 0.28472 mg/L

ECOSAR Class Program (ECOSAR v1.11):

Class(es) found:

Aliphatic Amines

Henrys Law Constant (25 deg C) [HENRYWIN v3.20]:

Bond Method : 1.56E-014 atm-m3/mole (1.58E-009 Pa-m3/mole)

Group Method: Incomplete

For Henry LC Comparison Purposes:

User-Entered Henry LC: not entered

Henrys LC [via VP/WSol estimate using User-Entered or Estimated values]:

HLC: 2.598E-010 atm-m3/mole (2.633E-005 Pa-m3/mole)

VP: 5.79E-010 mm Hg (source: MPBPVP)

WS: 0.919 mg/L (source: WSKOWWIN)

Log Octanol-Air Partition Coefficient (25 deg C) [KOAWIN v1.10]:

Log Kow used: 4.74 (KowWin est)

Log Kaw used: -12.195 (HenryWin est)

Log Koa (KOAWIN v1.10 estimate): 16.935

Log Koa (experimental database): None

Probability of Rapid Biodegradation (BIOWIN v4.10):

Biowin1 (Linear Model) : -0.4643

Biowin2 (Non-Linear Model) : 0.0000

Expert Survey Biodegradation Results:

Biowin3 (Ultimate Survey Model): 2.0648 (months )

Biowin4 (Primary Survey Model) : 3.0691 (weeks )

MITI Biodegradation Probability:

Biowin5 (MITI Linear Model) : 0.2317

Biowin6 (MITI Non-Linear Model): 0.0499

Anaerobic Biodegradation Probability:

Biowin7 (Anaerobic Linear Model): -1.5996

Ready Biodegradability Prediction: NO

Hydrocarbon Biodegradation (BioHCwin v1.01):

Structure incompatible with current estimation method!

Sorption to aerosols (25 Dec C)[AEROWIN v1.00]:

Vapor pressure (liquid/subcooled): 6.69E-006 Pa (5.02E-008 mm Hg)

Log Koa (Koawin est ): 16.935

Kp (particle/gas partition coef. (m3/ug)):

Mackay model : 0.448

Octanol/air (Koa) model: 2.11E+004

Fraction sorbed to airborne particulates (phi):

Junge-Pankow model : 0.942

Mackay model : 0.973

Octanol/air (Koa) model: 1

Atmospheric Oxidation (25 deg C) [AopWin v1.92]:

Hydroxyl Radicals Reaction:

OVERALL OH Rate Constant = 62.4607 E-12 cm3/molecule-sec

Half-Life = 0.171 Days (12-hr day; 1.5E6 OH/cm3)

Half-Life = 2.055 Hrs

Ozone Reaction:

No Ozone Reaction Estimation

Fraction sorbed to airborne particulates (phi):

0.957 (Junge-Pankow, Mackay avg)

1 (Koa method)

Note: the sorbed fraction may be resistant to atmospheric oxidation

Soil Adsorption Coefficient (KOCWIN v2.00):

Koc : 3512 L/kg (MCI method)

Log Koc: 3.546 (MCI method)

Koc : 1997 L/kg (Kow method)

Log Koc: 3.300 (Kow method)

Aqueous Base/Acid-Catalyzed Hydrolysis (25 deg C) [HYDROWIN v2.00]:

Rate constants can NOT be estimated for this structure!

Bioaccumulation Estimates (BCFBAF v3.01):

Log BCF from regression-based method = 2.793 (BCF = 621.5 L/kg wet-wt)

Log Biotransformation Half-life (HL) = 0.9485 days (HL = 8.881 days)

Log BCF Arnot-Gobas method (upper trophic) = 3.328 (BCF = 2126)

Log BAF Arnot-Gobas method (upper trophic) = 3.396 (BAF = 2491)

log Kow used: 4.74 (estimated)

Volatilization from Water:

Henry LC: 1.56E-014 atm-m3/mole (estimated by Bond SAR Method)

Half-Life from Model River: 6.645E+010 hours (2.769E+009 days)

Half-Life from Model Lake : 7.249E+011 hours (3.02E+010 days)

Removal In Wastewater Treatment:

Total removal: 67.79 percent

Total biodegradation: 0.61 percent

Total sludge adsorption: 67.18 percent

Total to Air: 0.00 percent

(using 10000 hr Bio P,A,S)

Level III Fugacity Model:

Mass Amount Half-Life Emissions

(percent) (hr) (kg/hr)

Air 1.84e-006 4.11 1000

Water 8.58 1.44e+003 1000

Soil 89.2 2.88e+003 1000

Sediment 2.18 1.3e+004 0

Persistence Time: 2.91e+003 hr

* 1. PECgw calculations (FOCUS PELMO 6.6.4)

|  |  |  |
| --- | --- | --- |
| Use No. | 1-4 | 3-4 |
| Crop | Winter cereals | Spring cereals |
| Application rate  [g a.i./ha] | Prothioconazole: 160  Spiroxamine: 300 | Prothioconazole: 160  Spiroxamine: 300 |
| Number of applications/interval [d] | 1 / - | 1 / - |
| Run ID | Prothioconazole\_WC,  Spiroxamine\_WC | Prothioconazole\_SC,  Spiroxamine\_SC |

**Example output file: Winter cereals, Hamburg**

1

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* \*

\* PESTICIDE LEACHING MODEL \*

\* PELMO 5.0, DEC 2020 \*

\* FOCUSPELMO 6.6.4 \*

\* \*

\* \*

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DEVELOPED BY:

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF REASEARCH AND DEVELOPMENT

ATHENS ENVIRONMENTAL RESEARCH LABORATORY

ATHENS, GA. 30613

404-546-3138

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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

HYDROLOGY AND SEDIMENT RELATED PARAMETERS

-----------------------------------------

Variable time step

IF AVAILABLE, PAN EVAPORATION DATA ARE USED.

LATTITUDE OF THE LOCATION: 53.50

CROPNAME GENERAL Winter Cereals

PAN COEFFICIENT FOR EVAPORATION (NO CROP) 1.000 1.000

PAN COEFFICIENT FOR EVAPORATION (MID SEASON) 1.100 1.100

PAN COEFFICIENT FOR EVAPORATION (LATE SEASON) 0.3000 0.3000

FLAG FOR ET (0=EVAP,1=TEMP,2=EVAP/TEMP) 2

DEPTH TO WHICH ET IS COMPUTED YEAR-ROUND [CM] 15.00

MONTHLY DAYLIGHT HOURS

MONTH DAY HOURS MONTH DAY HOURS MONTH DAY HOURS

JAN. 7.728 FEB. 9.314 MAR. 11.59

APR. 14.04 MAY 15.93 JUNE 16.78

JULY 16.33 AUG. 14.68 SEP. 12.33

OCT. 9.890 NOV. 8.016 DEC. 7.221

SNOW MELT COEFFICIENT [CM/DEG-C-DAY] 0.4600

INITIAL CROP NUMBER 8

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 51 72

8 0.0000 100.0 0.0000 3.800 0.0000 0 0 3 II 86 70 86 1.0000 1.0000 1.0000 0.39000 4 MAY

III 94 84 94

ADDITIONAL INFORMATION CONCERNING WINTER CROPS AT SPRING POINT

---------------------------------------------------------------

INTERCEPT.

CROP POTENTIAL ROOT DEPTH LAI

NUMBER [CM] [CM] [-]

8 0.0000 20.00 0.1000

CROP ROTATION INFORMATION

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CROP EMERGENCE MATURATION SENESCENCE HARVEST

NUMBER DATE DATE DATE DATE

Winter Cereals 1 NOV., 1 1 JUNE, 2 16 JULY, 2 10 AUG., 2

Winter Cereals 1 NOV., 2 1 JUNE, 3 16 JULY, 3 10 AUG., 3

Winter Cereals 1 NOV., 3 1 JUNE, 4 16 JULY, 4 10 AUG., 4

Winter Cereals 1 NOV., 4 1 JUNE, 5 16 JULY, 5 10 AUG., 5

Winter Cereals 1 NOV., 5 1 JUNE, 6 16 JULY, 6 10 AUG., 6

Winter Cereals 1 NOV., 6 1 JUNE, 7 16 JULY, 7 10 AUG., 7

Winter Cereals 1 NOV., 7 1 JUNE, 8 16 JULY, 8 10 AUG., 8

Winter Cereals 1 NOV., 8 1 JUNE, 9 16 JULY, 9 10 AUG., 9

Winter Cereals 1 NOV., 9 1 JUNE, 10 16 JULY, 10 10 AUG., 10

Winter Cereals 1 NOV., 10 1 JUNE, 11 16 JULY, 11 10 AUG., 11

Winter Cereals 1 NOV., 11 1 JUNE, 12 16 JULY, 12 10 AUG., 12

Winter Cereals 1 NOV., 12 1 JUNE, 13 16 JULY, 13 10 AUG., 13

Winter Cereals 1 NOV., 13 1 JUNE, 14 16 JULY, 14 10 AUG., 14

Winter Cereals 1 NOV., 14 1 JUNE, 15 16 JULY, 15 10 AUG., 15

Winter Cereals 1 NOV., 15 1 JUNE, 16 16 JULY, 16 10 AUG., 16

Winter Cereals 1 NOV., 16 1 JUNE, 17 16 JULY, 17 10 AUG., 17

Winter Cereals 1 NOV., 17 1 JUNE, 18 16 JULY, 18 10 AUG., 18

Winter Cereals 1 NOV., 18 1 JUNE, 19 16 JULY, 19 10 AUG., 19

Winter Cereals 1 NOV., 19 1 JUNE, 20 16 JULY, 20 10 AUG., 20

Winter Cereals 1 NOV., 20 1 JUNE, 21 16 JULY, 21 10 AUG., 21

Winter Cereals 1 NOV., 21 1 JUNE, 22 16 JULY, 22 10 AUG., 22

Winter Cereals 1 NOV., 22 1 JUNE, 23 16 JULY, 23 10 AUG., 23

Winter Cereals 1 NOV., 23 1 JUNE, 24 16 JULY, 24 10 AUG., 24

Winter Cereals 1 NOV., 24 1 JUNE, 25 16 JULY, 25 10 AUG., 25

Winter Cereals 1 NOV., 25 1 JUNE, 26 16 JULY, 26 10 AUG., 26

Winter Cereals 1 NOV., 26 1 JUNE, 27 16 JULY, 27 10 AUG., 27

Winter Cereals 1 NOV., 27 1 JUNE, 28 16 JULY, 28 10 AUG., 28

Winter Cereals 1 NOV., 28 1 JUNE, 29 16 JULY, 29 10 AUG., 29

Winter Cereals 1 NOV., 29 1 JUNE, 30 16 JULY, 30 10 AUG., 30

Winter Cereals 1 NOV., 30 1 JUNE, 31 16 JULY, 31 10 AUG., 31

Winter Cereals 1 NOV., 31 1 JUNE, 32 16 JULY, 32 10 AUG., 32

Winter Cereals 1 NOV., 32 1 JUNE, 33 16 JULY, 33 10 AUG., 33

Winter Cereals 1 NOV., 33 1 JUNE, 34 16 JULY, 34 10 AUG., 34

Winter Cereals 1 NOV., 34 1 JUNE, 35 16 JULY, 35 10 AUG., 35

Winter Cereals 1 NOV., 35 1 JUNE, 36 16 JULY, 36 10 AUG., 36

Winter Cereals 1 NOV., 36 1 JUNE, 37 16 JULY, 37 10 AUG., 37

Winter Cereals 1 NOV., 37 1 JUNE, 38 16 JULY, 38 10 AUG., 38

Winter Cereals 1 NOV., 38 1 JUNE, 39 16 JULY, 39 10 AUG., 39

Winter Cereals 1 NOV., 39 1 JUNE, 40 16 JULY, 40 10 AUG., 40

Winter Cereals 1 NOV., 40 1 JUNE, 41 16 JULY, 41 10 AUG., 41

Winter Cereals 1 NOV., 41 1 JUNE, 42 16 JULY, 42 10 AUG., 42

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Winter Cereals 1 NOV., 118 1 JUNE, 118 16 JULY, 118 10 AUG., 118

Winter Cereals 1 NOV., 119 1 JUNE, 119 16 JULY, 119 10 AUG., 119

Winter Cereals 1 NOV., 120 1 JUNE, 120 16 JULY, 120 10 AUG., 120

MECHANICAL TREATMENTS

---------------------

NO DATE DEPTH[CM]

\*\*\* PARAMETERS OF ACTIVE SUBSTANCE (Prothioconazole)\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PESTICIDE UPPER INCORP. LOWER INCORP.

APPLICATION APPLIED DEPTH DEPTH FFIELD

DATE [KG/HA] [CM] [CM] [-]

4 MAY , 1 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 2 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 3 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 4 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 5 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 6 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 7 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 8 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 9 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 10 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 11 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 12 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 13 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 14 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 15 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 16 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 17 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 18 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 19 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 20 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 21 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 22 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 23 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 24 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 25 0.3200E-01 0.0000 0.0000 0.0000

4 MAY , 26 0.3200E-01 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] 0.4591E-06

CALCULATED USING

VAPOUR PRESSURE [Pa] 0.4000E-06

MOLECULAR MASS [g/mole] 344.3

WATER SOLUBILITY [mg/l] 300.0

-------------------------------------

TEMPERATURE [deg C] 30.00

HENRY-CONSTANT [Pa\*m3/mole] or [J/mole] 0.9181E-06

CALCULATED USING

VAPOUR PRESSURE [Pa] 0.1600E-05

MOLECULAR MASS [g/mole] 344.3

WATER SOLUBILITY [mg/l] 600.0

-------------------------------------

Q10-Factor for Henry's constant: 2.000

DIFFUSION COEFF.AIR [cm2/d] 4303.

DEPTH OF SURFACE LAYER FOR VOLATILIZATION [CM] 0.1000

HENRY CONSTANT AT 20.0 deg C [-] 0.1883E-09

HENRY CONSTANT AT 30.0 deg C [-] 0.3643E-09

PLANT UPTAKE OF ACTIVE SUBSTANCE

--------------------------------

PLANT UPTAKE FACTOR (-) 0.0000

TRANSFORMATION PARAMETERS

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DegT50 of the compound (d) at 20 C at pF 2: 1.20

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] [-] [%] [%] [-] [-] [-]

MET. B1 0.8087E-01 20.00 2.580 0.0000 100.0 0.7000 0.0000 1.000

MET. C1 0.3292 20.00 2.580 0.0000 100.0 0.7000 0.0000 1.000

BR/CO2 0.1675 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] 1765.

FREUNDLICH-SORPTION EXPONENT 1/n 0.9000

[PEARL] FACTOR DESCRIBING NON-EQ-SITES EQ-SITES (-): 0.0000

[PEARL] DESORPTION RATE [1/D]: 0.0000

MIN. CONC FOR FREUNDLICH-SORPTION [ G/L] 0.1000E-19

ESTIMATED MOISTURE FOR AIR DRIED SOIL(m3/m3): 0.6400E-02

RESULTING REL. CHANGE OF SORPTION COEFF. (-): 100.0

DEPTH DEPENDEND SORPTION AND TRANSFORMATION PARAMETERS

------------------------------------------------------

HORIZON KOC KD FR-EXP TRANSFORMATION RATE TO

MET. B1 MET. C1 BR/CO2

[CM\*\*3/G] [CM\*\*3/G] [-] [/DAY] [/DAY] [/DAY]

1 1765. 26.48 0.9000 0.8087E-01 0.3292 0.1675

2 1765. 17.65 0.9000 0.4043E-01 0.1646 0.8376E-01

3 1765. 3.530 0.9000 0.2426E-01 0.9877E-01 0.5025E-01

4 0.0000 0.0000 0.9000 0.2426E-01 0.9877E-01 0.5025E-01

5 0.0000 0.0000 0.9000 0.2426E-01 0.9877E-01 0.5025E-01

6 0.0000 0.0000 0.9000 0.0000 0.0000 0.0000

\*\*\* PARAMETERS OF METABOLITE B1 (M01)\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MOLMAS [g/mol] 358.3

PLANT UPTAKE

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PLANT UPTAKE FACTOR (-) 0.0000

TRANSFORMATION PARAMETERS

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DegT50 of the compound (d) at 20 C at pF 2: 15.70

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 0.4415E-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] 2556.

FREUNDLICH-SORPTION EXPONENT 1/n 0.8800

[PEARL] FACTOR DESCRIBING NON-EQ-SITES EQ-SITES (-): 0.0000

[PEARL] DESORPTION RATE [1/D]: 0.0000

MIN. CONC FOR FREUNDLICH-SORPTION [ G/L] 0.1000E-19

ESTIMATED MOISTURE FOR AIR DRIED SOIL(m3/m3): 0.6400E-02

ESTIMATED MOISTURE FOR AIR DRIED SOIL(m3/m3): 1000.

DEPTH DEPENDEND SORPTION AND TRANSFORMATION PARAMETERS

------------------------------------------------------

HORIZON KOC KD FR-EXP TRANSFORMATION RATE TO

BR/CO2

[CM\*\*3/G] [CM\*\*3/G] [-] [/DAY]

1 2556. 38.34 0.8800 0.4415E-01

2 2556. 25.56 0.8800 0.2207E-01

3 2556. 5.113 0.8800 0.1324E-01

4 0.0000 0.0000 0.8800 0.1324E-01

5 0.0000 0.0000 0.8800 0.1324E-01

6 0.0000 0.0000 0.8800 0.0000

\*\*\* PARAMETERS OF METABOLITE C1 (M04)\*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MOLMAS [g/mol] 312.2

PLANT UPTAKE

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PLANT UPTAKE FACTOR (-) 0.0000

TRANSFORMATION PARAMETERS

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DegT50 of the compound (d) at 20 C at pF 2: 22.70

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 0.3054E-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] 575.4

FREUNDLICH-SORPTION EXPONENT 1/n 0.8100

[PEARL] FACTOR DESCRIBING NON-EQ-SITES EQ-SITES (-): 0.0000

[PEARL] DESORPTION RATE [1/D]: 0.0000

MIN. CONC FOR FREUNDLICH-SORPTION [ G/L] 0.1000E-19

ESTIMATED MOISTURE FOR AIR DRIED SOIL(m3/m3): 0.6400E-02

ESTIMATED MOISTURE FOR AIR DRIED SOIL(m3/m3): 1000.

DEPTH DEPENDEND SORPTION AND TRANSFORMATION PARAMETERS

------------------------------------------------------

HORIZON KOC KD FR-EXP TRANSFORMATION RATE TO

BR/CO2

[CM\*\*3/G] [CM\*\*3/G] [-] [/DAY]

1 575.4 8.631 0.8100 0.3054E-01

2 575.4 5.754 0.8100 0.1527E-01

3 575.4 1.151 0.8100 0.9161E-02

4 0.0000 0.0000 0.8100 0.9161E-02

5 0.0000 0.0000 0.8100 0.9161E-02

6 0.0000 0.0000 0.8100 0.0000

(H

Ver 4 Hamburg

Ver 4 Hamburg, winter cereals

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

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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

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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

* 1. PECgw calculations (FOCUS PEARL 5.5.5)

|  |  |  |
| --- | --- | --- |
| Use No. | 1-4 | 3-4 |
| Crop | Winter cereals | Spring cereals |
| Application rate  [g a.i./ha] | Prothioconazole: 160  Spiroxamine: 300 | Prothioconazole: 160  Spiroxamine: 300 |
| Number of applications/interval [d] | 1 / - | 1 / - |
| Run ID | 9-17 (prothioconazole)  24-32 (spiroxamine) | 3-8 (prothioconazole)  18-23 (spiroxamine) |

**Example output file: Winter cereals, Chateaudun**

\* ------------------------------------------------------------------------------

\* 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:\PesticideModels\SPIN\FOCUSPEARL\24

\* Run ID : 24

\* Input file generated on : 07-06-2024

\* ------------------------------------------------------------------------------

\*

\* ExposureType : Groundwater

\* Scenario data subset : FOCUS Groundwater version 5

\* Location : CHATEAUDUN

\* Meteo station : chat-m

\* Soil type : CHAT-S\_Soil

\* Crop calendar : CHAT-WCEREALS

\* Substance : Spiroxamine\_GW

\* Application scheme : spiro\_WC\_Chat

\* 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 0.0511 0.5227 0.0000 0.0264 0.1333 0.0000 0.3351 0.0032 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0010 0.8785 0.0033

1902 BalWatTgt 0.0049 0.4133 0.0000 0.0582 0.0265 0.0000 0.1965 0.1854 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.5845 0.2658

1903 BalWatTgt -0.0235 0.5070 0.0000 0.0611 0.0850 0.0000 0.2712 0.1743 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.4978 0.2308

1904 BalWatTgt 0.0104 0.5926 0.0000 0.0504 0.1027 0.0000 0.2550 0.2244 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1762 0.4992 0.2660

1905 BalWatTgt 0.0201 0.5541 0.0000 0.0940 0.0610 0.0000 0.2382 0.2349 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1408 0.4930 0.2505

1906 BalWatTgt -0.0093 0.6045 0.0000 0.1044 0.0919 0.0000 0.3086 0.2133 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0944 0.5072 0.2859

1907 BalWatTgt -0.0036 0.7325 0.0000 0.0923 0.2115 0.0000 0.2838 0.2409 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1693 0.4768 0.2628

1908 BalWatTgt 0.0092 0.4733 0.0000 0.1440 0.0551 0.0000 0.2440 0.1649 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0373 0.5561 0.3514

1909 BalWatTgt 0.0026 0.7586 0.0000 0.1601 0.2235 0.0000 0.2989 0.2335 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2344 0.4724 0.2349

1910 BalWatTgt 0.0255 0.7063 0.0000 0.2535 0.2024 0.0000 0.2658 0.2125 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1409 0.4882 0.2286

1911 BalWatTgt -0.0207 0.7866 0.0000 0.2188 0.2888 0.0000 0.2865 0.2320 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1442 0.4739 0.2439

1912 BalWatTgt 0.0014 0.6903 0.0000 0.2324 0.2149 0.0000 0.2743 0.1999 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1846 0.4916 0.2364

1913 BalWatTgt 0.0222 0.8047 0.0000 0.2239 0.2382 0.0000 0.3165 0.2276 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2039 0.5011 0.2313

1914 BalWatTgt -0.0281 0.7277 0.0000 0.1898 0.2336 0.0000 0.3047 0.2175 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1140 0.5294 0.2894

1915 BalWatTgt -0.0210 0.6683 0.0000 0.2576 0.1276 0.0000 0.3353 0.2264 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1241 0.5242 0.2618

1916 BalWatTgt 0.0213 0.8461 0.0000 0.1523 0.2960 0.0000 0.2865 0.2422 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1869 0.5109 0.2663

1917 BalWatTgt -0.0087 0.5936 0.0000 0.2421 0.0860 0.0000 0.2649 0.2514 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1912 0.5377 0.2547

1918 BalWatTgt 0.0096 0.6340 0.0000 0.1082 0.1181 0.0000 0.2927 0.2135 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1039 0.4978 0.2697

1919 BalWatTgt -0.0025 0.6577 0.0000 0.0932 0.1897 0.0000 0.2720 0.1986 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1308 0.4590 0.2436

1920 BalWatTgt -0.0150 0.6951 0.0000 0.2797 0.2294 0.0000 0.2533 0.2272 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2016 0.4726 0.2341

1921 BalWatTgt 0.0044 0.5227 0.0000 0.1183 0.0533 0.0000 0.2656 0.1993 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0985 0.5735 0.3049

1922 BalWatTgt 0.0055 0.4133 0.0000 0.0592 0.0262 0.0000 0.1964 0.1852 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.5845 0.2658

1923 BalWatTgt -0.0234 0.5070 0.0000 0.0607 0.0850 0.0000 0.2712 0.1743 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.4978 0.2308

1924 BalWatTgt 0.0104 0.5926 0.0000 0.0503 0.1027 0.0000 0.2550 0.2244 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1762 0.4992 0.2660

1925 BalWatTgt 0.0201 0.5541 0.0000 0.0939 0.0610 0.0000 0.2382 0.2349 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1408 0.4930 0.2505

1926 BalWatTgt -0.0086 0.6045 0.0000 0.1044 0.0933 0.0000 0.3089 0.2109 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0937 0.5075 0.2834

\* 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 0.1580 0.5227 0.0000 0.0264 0.0264 0.0000 0.3351 0.0032 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0010 0.8785 0.0033

1902 BalWatSol -0.0268 0.4133 0.0000 0.0582 0.0582 0.0000 0.1965 0.1854 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.5845 0.2658

1903 BalWatSol 0.0004 0.5070 0.0000 0.0611 0.0611 0.0000 0.2712 0.1743 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.4978 0.2308

1904 BalWatSol 0.0627 0.5926 0.0000 0.0504 0.0504 0.0000 0.2550 0.2244 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1762 0.4992 0.2660

1905 BalWatSol -0.0129 0.5541 0.0000 0.0940 0.0940 0.0000 0.2382 0.2349 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1408 0.4930 0.2505

1906 BalWatSol -0.0218 0.6045 0.0000 0.1044 0.1044 0.0000 0.3086 0.2133 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0944 0.5072 0.2859

1907 BalWatSol 0.1156 0.7325 0.0000 0.0923 0.0923 0.0000 0.2838 0.2409 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1693 0.4768 0.2628

1908 BalWatSol -0.0796 0.4733 0.0000 0.1440 0.1440 0.0000 0.2440 0.1649 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0373 0.5561 0.3514

1909 BalWatSol 0.0660 0.7586 0.0000 0.1601 0.1601 0.0000 0.2989 0.2335 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2344 0.4724 0.2349

1910 BalWatSol -0.0256 0.7063 0.0000 0.2535 0.2535 0.0000 0.2658 0.2125 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1409 0.4882 0.2286

1911 BalWatSol 0.0492 0.7866 0.0000 0.2188 0.2188 0.0000 0.2865 0.2320 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1442 0.4739 0.2439

1912 BalWatSol -0.0161 0.6903 0.0000 0.2324 0.2324 0.0000 0.2743 0.1999 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1846 0.4916 0.2364

1913 BalWatSol 0.0366 0.8047 0.0000 0.2239 0.2239 0.0000 0.3165 0.2276 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2039 0.5011 0.2313

1914 BalWatSol 0.0156 0.7277 0.0000 0.1898 0.1898 0.0000 0.3047 0.2175 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1140 0.5294 0.2894

1915 BalWatSol -0.1510 0.6683 0.0000 0.2576 0.2576 0.0000 0.3353 0.2264 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1241 0.5242 0.2618

1916 BalWatSol 0.1651 0.8461 0.0000 0.1523 0.1523 0.0000 0.2865 0.2422 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1869 0.5109 0.2663

1917 BalWatSol -0.1649 0.5936 0.0000 0.2421 0.2421 0.0000 0.2649 0.2514 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1912 0.5377 0.2547

1918 BalWatSol 0.0196 0.6340 0.0000 0.1082 0.1082 0.0000 0.2927 0.2135 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1039 0.4978 0.2697

1919 BalWatSol 0.0939 0.6577 0.0000 0.0932 0.0932 0.0000 0.2720 0.1986 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1308 0.4590 0.2436

1920 BalWatSol -0.0653 0.6951 0.0000 0.2797 0.2797 0.0000 0.2533 0.2272 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2016 0.4726 0.2341

1921 BalWatSol -0.0606 0.5227 0.0000 0.1183 0.1183 0.0000 0.2656 0.1993 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0985 0.5735 0.3049

1922 BalWatSol -0.0275 0.4133 0.0000 0.0592 0.0592 0.0000 0.1964 0.1852 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.5845 0.2658

1923 BalWatSol 0.0009 0.5070 0.0000 0.0607 0.0607 0.0000 0.2712 0.1743 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1040 0.4978 0.2308

1924 BalWatSol 0.0628 0.5926 0.0000 0.0503 0.0503 0.0000 0.2550 0.2244 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1762 0.4992 0.2660

1925 BalWatSol -0.0128 0.5541 0.0000 0.0939 0.0939 0.0000 0.2382 0.2349 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1408 0.4930 0.2505

1926 BalWatSol -0.0196 0.6045 0.0000 0.1044 0.1044 0.0000 0.3089 0.2109 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0937 0.5075 0.2834

\* Annual mass balance of substance at the crop canopy

\* ------------------------------------------------------------------------------------

\* yr Identifier AmaApp DelAmaCrp AmaDep AmaDsp AmaWas AmaHar

1901 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1902 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1903 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1904 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1905 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1906 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1907 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1908 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1909 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1910 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1911 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1912 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1913 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1914 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1915 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1916 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1917 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1918 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1919 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1920 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1921 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1922 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1923 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1924 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1925 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1926 BalCrp\_Spiroxamine\_GW 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

\* Annual mass balance (kg.ha-1) of compound Spiroxamine\_GW 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\_Spiroxamine\_GW 0.6000E-01 0.5487E-02 0.5487E-02 0.000 0.5443E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8016E-04 0.000 0.000

1902 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.6633E-03 0.6633E-03 0.000 0.5925E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8835E-04 0.000 0.000

1903 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.5774E-03 0.5774E-03 0.000 0.5936E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6569E-04 0.000 0.000

1904 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1520E-03 0.1520E-03 0.000 0.5980E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5171E-04 0.000 0.000

1905 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1615E-02 0.1615E-02 0.000 0.5832E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6134E-04 0.000 0.000

1906 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.2975E-02 -0.2975E-02 0.000 0.6285E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1261E-03 0.000 0.000

1907 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1245E-02 0.1245E-02 0.000 0.5871E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4433E-04 0.000 0.000

1908 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.5377E-03 -0.5377E-03 0.000 0.6034E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1992E-03 0.000 0.000

1909 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1321E-02 0.1321E-02 0.000 0.5862E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5501E-04 0.000 0.000

1910 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.8342E-03 0.8342E-03 0.000 0.5913E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3675E-04 0.000 0.000

1911 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.7501E-03 -0.7501E-03 0.000 0.6069E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6142E-04 0.000 0.000

1912 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.4039E-03 0.4039E-03 0.000 0.5952E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7155E-04 0.000 0.000

1913 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.1034E-02 -0.1034E-02 0.000 0.6098E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5111E-04 0.000 0.000

1914 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.1124E-02 -0.1124E-02 0.000 0.6103E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.9456E-04 0.000 0.000

1915 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.6953E-04 -0.6953E-04 0.000 0.6002E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4472E-04 0.000 0.000

1916 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1246E-02 0.1246E-02 0.000 0.5866E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.9228E-04 0.000 0.000

1917 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.7859E-03 0.7859E-03 0.000 0.5914E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7284E-04 0.000 0.000

1918 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.5441E-03 -0.5441E-03 0.000 0.6051E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3601E-04 0.000 0.000

1919 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.3918E-03 -0.3918E-03 0.000 0.6025E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1383E-03 0.000 0.000

1920 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.1532E-03 -0.1532E-03 0.000 0.6011E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4465E-04 0.000 0.000

1921 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.7137E-03 -0.7137E-03 0.000 0.6064E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6987E-04 0.000 0.000

1922 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1433E-03 0.1433E-03 0.000 0.5977E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8849E-04 0.000 0.000

1923 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.5484E-03 0.5484E-03 0.000 0.5939E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6569E-04 0.000 0.000

1924 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1502E-03 0.1502E-03 0.000 0.5980E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5171E-04 0.000 0.000

1925 BalTgt\_Spiroxamine\_GW 0.6000E-01 0.1615E-02 0.1615E-02 0.000 0.5832E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6134E-04 0.000 0.000

1926 BalTgt\_Spiroxamine\_GW 0.6000E-01 -0.2979E-02 -0.2979E-02 0.000 0.6285E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1261E-03 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound M01\_GW 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\_M01\_GW 0.000 0.1904E-02 0.1904E-02 0.000 0.9433E-02 0.1134E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1902 BalTgt\_M01\_GW 0.000 0.2525E-03 0.2525E-03 0.000 0.1209E-01 0.1234E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1903 BalTgt\_M01\_GW 0.000 0.1646E-03 0.1646E-03 0.000 0.1220E-01 0.1236E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1904 BalTgt\_M01\_GW 0.000 0.5004E-04 0.5004E-04 0.000 0.1240E-01 0.1245E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1905 BalTgt\_M01\_GW 0.000 0.3757E-03 0.3757E-03 0.000 0.1177E-01 0.1215E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1906 BalTgt\_M01\_GW 0.000 -0.7200E-03 -0.7200E-03 0.000 0.1381E-01 0.1309E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1907 BalTgt\_M01\_GW 0.000 0.2926E-03 0.2926E-03 0.000 0.1194E-01 0.1223E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1908 BalTgt\_M01\_GW 0.000 -0.1150E-03 -0.1150E-03 0.000 0.1268E-01 0.1257E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1909 BalTgt\_M01\_GW 0.000 0.3108E-03 0.3108E-03 0.000 0.1190E-01 0.1221E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1910 BalTgt\_M01\_GW 0.000 0.2231E-03 0.2231E-03 0.000 0.1209E-01 0.1232E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1911 BalTgt\_M01\_GW 0.000 -0.1520E-03 -0.1520E-03 0.000 0.1279E-01 0.1264E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1912 BalTgt\_M01\_GW 0.000 0.7601E-04 0.7601E-04 0.000 0.1232E-01 0.1240E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1913 BalTgt\_M01\_GW 0.000 -0.2545E-03 -0.2545E-03 0.000 0.1296E-01 0.1270E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1914 BalTgt\_M01\_GW 0.000 -0.2943E-03 -0.2943E-03 0.000 0.1301E-01 0.1271E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1915 BalTgt\_M01\_GW 0.000 -0.3113E-04 -0.3113E-04 0.000 0.1253E-01 0.1250E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1916 BalTgt\_M01\_GW 0.000 0.3151E-03 0.3151E-03 0.000 0.1190E-01 0.1222E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1917 BalTgt\_M01\_GW 0.000 0.2157E-03 0.2157E-03 0.000 0.1210E-01 0.1232E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1918 BalTgt\_M01\_GW 0.000 -0.1094E-03 -0.1094E-03 0.000 0.1271E-01 0.1260E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1919 BalTgt\_M01\_GW 0.000 -0.1068E-03 -0.1068E-03 0.000 0.1266E-01 0.1255E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1920 BalTgt\_M01\_GW 0.000 -0.6360E-04 -0.6360E-04 0.000 0.1258E-01 0.1252E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1921 BalTgt\_M01\_GW 0.000 -0.1862E-03 -0.1862E-03 0.000 0.1282E-01 0.1263E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1922 BalTgt\_M01\_GW 0.000 0.2691E-04 0.2691E-04 0.000 0.1242E-01 0.1245E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1923 BalTgt\_M01\_GW 0.000 0.1483E-03 0.1483E-03 0.000 0.1222E-01 0.1237E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1924 BalTgt\_M01\_GW 0.000 0.4889E-04 0.4889E-04 0.000 0.1241E-01 0.1245E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1925 BalTgt\_M01\_GW 0.000 0.3756E-03 0.3756E-03 0.000 0.1177E-01 0.1215E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1926 BalTgt\_M01\_GW 0.000 -0.7213E-03 -0.7213E-03 0.000 0.1381E-01 0.1309E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound M02\_GW 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\_M02\_GW 0.000 0.1910E-02 0.1910E-02 0.000 0.9730E-02 0.1168E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4168E-04 0.000 0.000

1902 BalTgt\_M02\_GW 0.000 0.2511E-03 0.2511E-03 0.000 0.1242E-01 0.1272E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4457E-04 0.000 0.000

1903 BalTgt\_M02\_GW 0.000 0.1690E-03 0.1690E-03 0.000 0.1254E-01 0.1274E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3152E-04 0.000 0.000

1904 BalTgt\_M02\_GW 0.000 0.5238E-04 0.5238E-04 0.000 0.1275E-01 0.1283E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2686E-04 0.000 0.000

1905 BalTgt\_M02\_GW 0.000 0.3826E-03 0.3826E-03 0.000 0.1211E-01 0.1252E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2465E-04 0.000 0.000

1906 BalTgt\_M02\_GW 0.000 -0.7345E-03 -0.7345E-03 0.000 0.1418E-01 0.1349E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4499E-04 0.000 0.000

1907 BalTgt\_M02\_GW 0.000 0.3012E-03 0.3012E-03 0.000 0.1228E-01 0.1260E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2217E-04 0.000 0.000

1908 BalTgt\_M02\_GW 0.000 -0.1260E-03 -0.1260E-03 0.000 0.1300E-01 0.1295E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7339E-04 0.000 0.000

1909 BalTgt\_M02\_GW 0.000 0.3253E-03 0.3253E-03 0.000 0.1224E-01 0.1258E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1607E-04 0.000 0.000

1910 BalTgt\_M02\_GW 0.000 0.2243E-03 0.2243E-03 0.000 0.1244E-01 0.1269E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2242E-04 0.000 0.000

1911 BalTgt\_M02\_GW 0.000 -0.1567E-03 -0.1567E-03 0.000 0.1315E-01 0.1303E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2743E-04 0.000 0.000

1912 BalTgt\_M02\_GW 0.000 0.7893E-04 0.7893E-04 0.000 0.1267E-01 0.1278E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2277E-04 0.000 0.000

1913 BalTgt\_M02\_GW 0.000 -0.2573E-03 -0.2573E-03 0.000 0.1333E-01 0.1309E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2040E-04 0.000 0.000

1914 BalTgt\_M02\_GW 0.000 -0.3012E-03 -0.3012E-03 0.000 0.1337E-01 0.1310E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3129E-04 0.000 0.000

1915 BalTgt\_M02\_GW 0.000 -0.3181E-04 -0.3181E-04 0.000 0.1288E-01 0.1288E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2988E-04 0.000 0.000

1916 BalTgt\_M02\_GW 0.000 0.3240E-03 0.3240E-03 0.000 0.1224E-01 0.1259E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2312E-04 0.000 0.000

1917 BalTgt\_M02\_GW 0.000 0.2141E-03 0.2141E-03 0.000 0.1245E-01 0.1269E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2458E-04 0.000 0.000

1918 BalTgt\_M02\_GW 0.000 -0.1112E-03 -0.1112E-03 0.000 0.1307E-01 0.1299E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3129E-04 0.000 0.000

1919 BalTgt\_M02\_GW 0.000 -0.1075E-03 -0.1075E-03 0.000 0.1301E-01 0.1293E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3353E-04 0.000 0.000

1920 BalTgt\_M02\_GW 0.000 -0.6154E-04 -0.6154E-04 0.000 0.1294E-01 0.1290E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2180E-04 0.000 0.000

1921 BalTgt\_M02\_GW 0.000 -0.1941E-03 -0.1941E-03 0.000 0.1317E-01 0.1302E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4127E-04 0.000 0.000

1922 BalTgt\_M02\_GW 0.000 0.2700E-04 0.2700E-04 0.000 0.1276E-01 0.1283E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4489E-04 0.000 0.000

1923 BalTgt\_M02\_GW 0.000 0.1531E-03 0.1531E-03 0.000 0.1256E-01 0.1275E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3153E-04 0.000 0.000

1924 BalTgt\_M02\_GW 0.000 0.5125E-04 0.5125E-04 0.000 0.1276E-01 0.1283E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2687E-04 0.000 0.000

1925 BalTgt\_M02\_GW 0.000 0.3826E-03 0.3826E-03 0.000 0.1211E-01 0.1252E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2465E-04 0.000 0.000

1926 BalTgt\_M02\_GW 0.000 -0.7357E-03 -0.7357E-03 0.000 0.1418E-01 0.1349E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4496E-04 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound M03\_GW 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\_M03\_GW 0.000 0.2021E-02 0.2021E-02 0.000 0.2264E-01 0.2466E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8519E-05 0.000 0.000

1902 BalTgt\_M03\_GW 0.000 0.2449E-03 0.2449E-03 0.000 0.2659E-01 0.2685E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8142E-05 0.000 0.000

1903 BalTgt\_M03\_GW 0.000 0.1964E-03 0.1964E-03 0.000 0.2669E-01 0.2690E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5483E-05 0.000 0.000

1904 BalTgt\_M03\_GW 0.000 0.5620E-04 0.5620E-04 0.000 0.2703E-01 0.2710E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5010E-05 0.000 0.000

1905 BalTgt\_M03\_GW 0.000 0.5287E-03 0.5287E-03 0.000 0.2589E-01 0.2643E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4675E-05 0.000 0.000

1906 BalTgt\_M03\_GW 0.000 -0.9884E-03 -0.9884E-03 0.000 0.2946E-01 0.2848E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8073E-05 0.000 0.000

1907 BalTgt\_M03\_GW 0.000 0.4134E-03 0.4134E-03 0.000 0.2619E-01 0.2660E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4106E-05 0.000 0.000

1908 BalTgt\_M03\_GW 0.000 -0.1798E-03 -0.1798E-03 0.000 0.2751E-01 0.2734E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1398E-04 0.000 0.000

1909 BalTgt\_M03\_GW 0.000 0.4460E-03 0.4460E-03 0.000 0.2612E-01 0.2656E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2817E-05 0.000 0.000

1910 BalTgt\_M03\_GW 0.000 0.2774E-03 0.2774E-03 0.000 0.2651E-01 0.2679E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4098E-05 0.000 0.000

1911 BalTgt\_M03\_GW 0.000 -0.2443E-03 -0.2443E-03 0.000 0.2774E-01 0.2750E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5006E-05 0.000 0.000

1912 BalTgt\_M03\_GW 0.000 0.1291E-03 0.1291E-03 0.000 0.2684E-01 0.2697E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3951E-05 0.000 0.000

1913 BalTgt\_M03\_GW 0.000 -0.3366E-03 -0.3366E-03 0.000 0.2797E-01 0.2763E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3601E-05 0.000 0.000

1914 BalTgt\_M03\_GW 0.000 -0.3919E-03 -0.3919E-03 0.000 0.2804E-01 0.2765E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5539E-05 0.000 0.000

1915 BalTgt\_M03\_GW 0.000 -0.2623E-04 -0.2623E-04 0.000 0.2722E-01 0.2720E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5453E-05 0.000 0.000

1916 BalTgt\_M03\_GW 0.000 0.4264E-03 0.4264E-03 0.000 0.2615E-01 0.2658E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4539E-05 0.000 0.000

1917 BalTgt\_M03\_GW 0.000 0.2633E-03 0.2633E-03 0.000 0.2653E-01 0.2680E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4638E-05 0.000 0.000

1918 BalTgt\_M03\_GW 0.000 -0.1721E-03 -0.1721E-03 0.000 0.2758E-01 0.2742E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5988E-05 0.000 0.000

1919 BalTgt\_M03\_GW 0.000 -0.1300E-03 -0.1300E-03 0.000 0.2743E-01 0.2730E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6184E-05 0.000 0.000

1920 BalTgt\_M03\_GW 0.000 -0.5520E-04 -0.5520E-04 0.000 0.2729E-01 0.2724E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3860E-05 0.000 0.000

1921 BalTgt\_M03\_GW 0.000 -0.2509E-03 -0.2509E-03 0.000 0.2772E-01 0.2748E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7742E-05 0.000 0.000

1922 BalTgt\_M03\_GW 0.000 0.5067E-04 0.5067E-04 0.000 0.2702E-01 0.2708E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8182E-05 0.000 0.000

1923 BalTgt\_M03\_GW 0.000 0.1850E-03 0.1850E-03 0.000 0.2672E-01 0.2691E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5484E-05 0.000 0.000

1924 BalTgt\_M03\_GW 0.000 0.5545E-04 0.5545E-04 0.000 0.2704E-01 0.2710E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5010E-05 0.000 0.000

1925 BalTgt\_M03\_GW 0.000 0.5287E-03 0.5287E-03 0.000 0.2589E-01 0.2643E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4675E-05 0.000 0.000

1926 BalTgt\_M03\_GW 0.000 -0.9898E-03 -0.9898E-03 0.000 0.2946E-01 0.2848E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8069E-05 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound Spiroxamine\_GW 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\_Spiroxamine\_GW 0.6000E-01 0.5487E-02 0.5487E-02 0.000 0.5443E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8016E-04 0.000 0.000

1902 BalSol\_Spiroxamine\_GW 0.6000E-01 0.6633E-03 0.6633E-03 0.000 0.5925E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8835E-04 0.000 0.000

1903 BalSol\_Spiroxamine\_GW 0.6000E-01 0.5774E-03 0.5774E-03 0.000 0.5936E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6569E-04 0.000 0.000

1904 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1520E-03 0.1520E-03 0.000 0.5980E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5171E-04 0.000 0.000

1905 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1615E-02 0.1615E-02 0.000 0.5832E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6134E-04 0.000 0.000

1906 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.2975E-02 -0.2975E-02 0.000 0.6285E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1261E-03 0.000 0.000

1907 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1245E-02 0.1245E-02 0.000 0.5871E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4433E-04 0.000 0.000

1908 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.5377E-03 -0.5377E-03 0.000 0.6034E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1992E-03 0.000 0.000

1909 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1321E-02 0.1321E-02 0.000 0.5862E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5501E-04 0.000 0.000

1910 BalSol\_Spiroxamine\_GW 0.6000E-01 0.8342E-03 0.8342E-03 0.000 0.5913E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3675E-04 0.000 0.000

1911 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.7501E-03 -0.7501E-03 0.000 0.6069E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6142E-04 0.000 0.000

1912 BalSol\_Spiroxamine\_GW 0.6000E-01 0.4039E-03 0.4039E-03 0.000 0.5952E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7155E-04 0.000 0.000

1913 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.1034E-02 -0.1034E-02 0.000 0.6098E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5111E-04 0.000 0.000

1914 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.1124E-02 -0.1124E-02 0.000 0.6103E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.9456E-04 0.000 0.000

1915 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.6953E-04 -0.6953E-04 0.000 0.6002E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4472E-04 0.000 0.000

1916 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1246E-02 0.1246E-02 0.000 0.5866E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.9228E-04 0.000 0.000

1917 BalSol\_Spiroxamine\_GW 0.6000E-01 0.7859E-03 0.7859E-03 0.000 0.5914E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7284E-04 0.000 0.000

1918 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.5441E-03 -0.5441E-03 0.000 0.6051E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3601E-04 0.000 0.000

1919 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.3918E-03 -0.3918E-03 0.000 0.6025E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1383E-03 0.000 0.000

1920 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.1532E-03 -0.1532E-03 0.000 0.6011E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4465E-04 0.000 0.000

1921 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.7137E-03 -0.7137E-03 0.000 0.6064E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6987E-04 0.000 0.000

1922 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1433E-03 0.1433E-03 0.000 0.5977E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8849E-04 0.000 0.000

1923 BalSol\_Spiroxamine\_GW 0.6000E-01 0.5484E-03 0.5484E-03 0.000 0.5939E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6569E-04 0.000 0.000

1924 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1502E-03 0.1502E-03 0.000 0.5980E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5171E-04 0.000 0.000

1925 BalSol\_Spiroxamine\_GW 0.6000E-01 0.1615E-02 0.1615E-02 0.000 0.5832E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6134E-04 0.000 0.000

1926 BalSol\_Spiroxamine\_GW 0.6000E-01 -0.2979E-02 -0.2979E-02 0.000 0.6285E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1261E-03 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound M01\_GW 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\_M01\_GW 0.000 0.1904E-02 0.1904E-02 0.000 0.9433E-02 0.1134E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1902 BalSol\_M01\_GW 0.000 0.2525E-03 0.2525E-03 0.000 0.1209E-01 0.1234E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1903 BalSol\_M01\_GW 0.000 0.1646E-03 0.1646E-03 0.000 0.1220E-01 0.1236E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1904 BalSol\_M01\_GW 0.000 0.5004E-04 0.5004E-04 0.000 0.1240E-01 0.1245E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1905 BalSol\_M01\_GW 0.000 0.3757E-03 0.3757E-03 0.000 0.1177E-01 0.1215E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1906 BalSol\_M01\_GW 0.000 -0.7200E-03 -0.7200E-03 0.000 0.1381E-01 0.1309E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1907 BalSol\_M01\_GW 0.000 0.2926E-03 0.2926E-03 0.000 0.1194E-01 0.1223E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1908 BalSol\_M01\_GW 0.000 -0.1150E-03 -0.1150E-03 0.000 0.1268E-01 0.1257E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1909 BalSol\_M01\_GW 0.000 0.3108E-03 0.3108E-03 0.000 0.1190E-01 0.1221E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1910 BalSol\_M01\_GW 0.000 0.2231E-03 0.2231E-03 0.000 0.1209E-01 0.1232E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1911 BalSol\_M01\_GW 0.000 -0.1520E-03 -0.1520E-03 0.000 0.1279E-01 0.1264E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1912 BalSol\_M01\_GW 0.000 0.7601E-04 0.7601E-04 0.000 0.1232E-01 0.1240E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1913 BalSol\_M01\_GW 0.000 -0.2545E-03 -0.2545E-03 0.000 0.1296E-01 0.1270E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1914 BalSol\_M01\_GW 0.000 -0.2943E-03 -0.2943E-03 0.000 0.1301E-01 0.1271E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1915 BalSol\_M01\_GW 0.000 -0.3113E-04 -0.3113E-04 0.000 0.1253E-01 0.1250E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1916 BalSol\_M01\_GW 0.000 0.3151E-03 0.3151E-03 0.000 0.1190E-01 0.1222E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1917 BalSol\_M01\_GW 0.000 0.2157E-03 0.2157E-03 0.000 0.1210E-01 0.1232E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1918 BalSol\_M01\_GW 0.000 -0.1094E-03 -0.1094E-03 0.000 0.1271E-01 0.1260E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1919 BalSol\_M01\_GW 0.000 -0.1068E-03 -0.1068E-03 0.000 0.1266E-01 0.1255E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1920 BalSol\_M01\_GW 0.000 -0.6360E-04 -0.6360E-04 0.000 0.1258E-01 0.1252E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1921 BalSol\_M01\_GW 0.000 -0.1862E-03 -0.1862E-03 0.000 0.1282E-01 0.1263E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1922 BalSol\_M01\_GW 0.000 0.2691E-04 0.2691E-04 0.000 0.1242E-01 0.1245E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1923 BalSol\_M01\_GW 0.000 0.1483E-03 0.1483E-03 0.000 0.1222E-01 0.1237E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1924 BalSol\_M01\_GW 0.000 0.4889E-04 0.4889E-04 0.000 0.1241E-01 0.1245E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1925 BalSol\_M01\_GW 0.000 0.3756E-03 0.3756E-03 0.000 0.1177E-01 0.1215E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

1926 BalSol\_M01\_GW 0.000 -0.7213E-03 -0.7213E-03 0.000 0.1381E-01 0.1309E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound M02\_GW 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\_M02\_GW 0.000 0.1910E-02 0.1910E-02 0.000 0.9730E-02 0.1168E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4168E-04 0.000 0.000

1902 BalSol\_M02\_GW 0.000 0.2511E-03 0.2511E-03 0.000 0.1242E-01 0.1272E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4457E-04 0.000 0.000

1903 BalSol\_M02\_GW 0.000 0.1690E-03 0.1690E-03 0.000 0.1254E-01 0.1274E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3152E-04 0.000 0.000

1904 BalSol\_M02\_GW 0.000 0.5238E-04 0.5238E-04 0.000 0.1275E-01 0.1283E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2686E-04 0.000 0.000

1905 BalSol\_M02\_GW 0.000 0.3826E-03 0.3826E-03 0.000 0.1211E-01 0.1252E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2465E-04 0.000 0.000

1906 BalSol\_M02\_GW 0.000 -0.7345E-03 -0.7345E-03 0.000 0.1418E-01 0.1349E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4499E-04 0.000 0.000

1907 BalSol\_M02\_GW 0.000 0.3012E-03 0.3012E-03 0.000 0.1228E-01 0.1260E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2217E-04 0.000 0.000

1908 BalSol\_M02\_GW 0.000 -0.1260E-03 -0.1260E-03 0.000 0.1300E-01 0.1295E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7339E-04 0.000 0.000

1909 BalSol\_M02\_GW 0.000 0.3253E-03 0.3253E-03 0.000 0.1224E-01 0.1258E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1607E-04 0.000 0.000

1910 BalSol\_M02\_GW 0.000 0.2243E-03 0.2243E-03 0.000 0.1244E-01 0.1269E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2242E-04 0.000 0.000

1911 BalSol\_M02\_GW 0.000 -0.1567E-03 -0.1567E-03 0.000 0.1315E-01 0.1303E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2743E-04 0.000 0.000

1912 BalSol\_M02\_GW 0.000 0.7893E-04 0.7893E-04 0.000 0.1267E-01 0.1278E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2277E-04 0.000 0.000

1913 BalSol\_M02\_GW 0.000 -0.2573E-03 -0.2573E-03 0.000 0.1333E-01 0.1309E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2040E-04 0.000 0.000

1914 BalSol\_M02\_GW 0.000 -0.3012E-03 -0.3012E-03 0.000 0.1337E-01 0.1310E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3129E-04 0.000 0.000

1915 BalSol\_M02\_GW 0.000 -0.3181E-04 -0.3181E-04 0.000 0.1288E-01 0.1288E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2988E-04 0.000 0.000

1916 BalSol\_M02\_GW 0.000 0.3240E-03 0.3240E-03 0.000 0.1224E-01 0.1259E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2312E-04 0.000 0.000

1917 BalSol\_M02\_GW 0.000 0.2141E-03 0.2141E-03 0.000 0.1245E-01 0.1269E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2458E-04 0.000 0.000

1918 BalSol\_M02\_GW 0.000 -0.1112E-03 -0.1112E-03 0.000 0.1307E-01 0.1299E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3129E-04 0.000 0.000

1919 BalSol\_M02\_GW 0.000 -0.1075E-03 -0.1075E-03 0.000 0.1301E-01 0.1293E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3353E-04 0.000 0.000

1920 BalSol\_M02\_GW 0.000 -0.6154E-04 -0.6154E-04 0.000 0.1294E-01 0.1290E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2180E-04 0.000 0.000

1921 BalSol\_M02\_GW 0.000 -0.1941E-03 -0.1941E-03 0.000 0.1317E-01 0.1302E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4127E-04 0.000 0.000

1922 BalSol\_M02\_GW 0.000 0.2700E-04 0.2700E-04 0.000 0.1276E-01 0.1283E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4489E-04 0.000 0.000

1923 BalSol\_M02\_GW 0.000 0.1531E-03 0.1531E-03 0.000 0.1256E-01 0.1275E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3153E-04 0.000 0.000

1924 BalSol\_M02\_GW 0.000 0.5125E-04 0.5125E-04 0.000 0.1276E-01 0.1283E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2687E-04 0.000 0.000

1925 BalSol\_M02\_GW 0.000 0.3826E-03 0.3826E-03 0.000 0.1211E-01 0.1252E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2465E-04 0.000 0.000

1926 BalSol\_M02\_GW 0.000 -0.7357E-03 -0.7357E-03 0.000 0.1418E-01 0.1349E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4496E-04 0.000 0.000

\* Annual mass balance (kg.ha-1) of compound M03\_GW 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\_M03\_GW 0.000 0.2021E-02 0.2021E-02 0.000 0.2264E-01 0.2466E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8519E-05 0.000 0.000

1902 BalSol\_M03\_GW 0.000 0.2449E-03 0.2449E-03 0.000 0.2659E-01 0.2685E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8142E-05 0.000 0.000

1903 BalSol\_M03\_GW 0.000 0.1964E-03 0.1964E-03 0.000 0.2669E-01 0.2690E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5483E-05 0.000 0.000

1904 BalSol\_M03\_GW 0.000 0.5620E-04 0.5620E-04 0.000 0.2703E-01 0.2710E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5010E-05 0.000 0.000

1905 BalSol\_M03\_GW 0.000 0.5287E-03 0.5287E-03 0.000 0.2589E-01 0.2643E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4675E-05 0.000 0.000

1906 BalSol\_M03\_GW 0.000 -0.9884E-03 -0.9884E-03 0.000 0.2946E-01 0.2848E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8073E-05 0.000 0.000

1907 BalSol\_M03\_GW 0.000 0.4134E-03 0.4134E-03 0.000 0.2619E-01 0.2660E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4106E-05 0.000 0.000

1908 BalSol\_M03\_GW 0.000 -0.1798E-03 -0.1798E-03 0.000 0.2751E-01 0.2734E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.1398E-04 0.000 0.000

1909 BalSol\_M03\_GW 0.000 0.4460E-03 0.4460E-03 0.000 0.2612E-01 0.2656E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.2817E-05 0.000 0.000

1910 BalSol\_M03\_GW 0.000 0.2774E-03 0.2774E-03 0.000 0.2651E-01 0.2679E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4098E-05 0.000 0.000

1911 BalSol\_M03\_GW 0.000 -0.2443E-03 -0.2443E-03 0.000 0.2774E-01 0.2750E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5006E-05 0.000 0.000

1912 BalSol\_M03\_GW 0.000 0.1291E-03 0.1291E-03 0.000 0.2684E-01 0.2697E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3951E-05 0.000 0.000

1913 BalSol\_M03\_GW 0.000 -0.3366E-03 -0.3366E-03 0.000 0.2797E-01 0.2763E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3601E-05 0.000 0.000

1914 BalSol\_M03\_GW 0.000 -0.3919E-03 -0.3919E-03 0.000 0.2804E-01 0.2765E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5539E-05 0.000 0.000

1915 BalSol\_M03\_GW 0.000 -0.2623E-04 -0.2623E-04 0.000 0.2722E-01 0.2720E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5453E-05 0.000 0.000

1916 BalSol\_M03\_GW 0.000 0.4264E-03 0.4264E-03 0.000 0.2615E-01 0.2658E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4539E-05 0.000 0.000

1917 BalSol\_M03\_GW 0.000 0.2633E-03 0.2633E-03 0.000 0.2653E-01 0.2680E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4638E-05 0.000 0.000

1918 BalSol\_M03\_GW 0.000 -0.1721E-03 -0.1721E-03 0.000 0.2758E-01 0.2742E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5988E-05 0.000 0.000

1919 BalSol\_M03\_GW 0.000 -0.1300E-03 -0.1300E-03 0.000 0.2743E-01 0.2730E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.6184E-05 0.000 0.000

1920 BalSol\_M03\_GW 0.000 -0.5520E-04 -0.5520E-04 0.000 0.2729E-01 0.2724E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.3860E-05 0.000 0.000

1921 BalSol\_M03\_GW 0.000 -0.2509E-03 -0.2509E-03 0.000 0.2772E-01 0.2748E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.7742E-05 0.000 0.000

1922 BalSol\_M03\_GW 0.000 0.5067E-04 0.5067E-04 0.000 0.2702E-01 0.2708E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8182E-05 0.000 0.000

1923 BalSol\_M03\_GW 0.000 0.1850E-03 0.1850E-03 0.000 0.2672E-01 0.2691E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5484E-05 0.000 0.000

1924 BalSol\_M03\_GW 0.000 0.5545E-04 0.5545E-04 0.000 0.2704E-01 0.2710E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.5010E-05 0.000 0.000

1925 BalSol\_M03\_GW 0.000 0.5287E-03 0.5287E-03 0.000 0.2589E-01 0.2643E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.4675E-05 0.000 0.000

1926 BalSol\_M03\_GW 0.000 -0.9898E-03 -0.9898E-03 0.000 0.2946E-01 0.2848E-01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.8069E-05 0.000 0.000

\* Intermediate target output for compound Spiroxamine\_GW

\* ----------------------------------------------------------------------------------------------------------------------------------

\* yr Identifier AmaLea FlvLea ConLea

\* (kg/ha) (m) (ug/L)

1907 Target\_Spiroxamine\_GW 0.0000 0.21153 0.0000

1908 Target\_Spiroxamine\_GW 0.0000 0.05510 0.0000

1909 Target\_Spiroxamine\_GW 0.0000 0.22351 0.0000

1910 Target\_Spiroxamine\_GW 0.0000 0.20235 0.0000

1911 Target\_Spiroxamine\_GW 0.0000 0.28878 0.0000

1912 Target\_Spiroxamine\_GW 0.0000 0.21486 0.0000

1913 Target\_Spiroxamine\_GW 0.0000 0.23823 0.0000

1914 Target\_Spiroxamine\_GW 0.0000 0.23362 0.0000

1915 Target\_Spiroxamine\_GW 0.0000 0.12763 0.0000

1916 Target\_Spiroxamine\_GW 0.0000 0.29599 0.0000

1917 Target\_Spiroxamine\_GW 0.0000 0.08595 0.0000

1918 Target\_Spiroxamine\_GW 0.0000 0.11813 0.0000

1919 Target\_Spiroxamine\_GW 0.0000 0.18968 0.0000

1920 Target\_Spiroxamine\_GW 0.0000 0.22936 0.0000

1921 Target\_Spiroxamine\_GW 0.0000 0.05328 0.0000

1922 Target\_Spiroxamine\_GW 0.0000 0.02617 0.0000

1923 Target\_Spiroxamine\_GW 0.0000 0.08505 0.0000

1924 Target\_Spiroxamine\_GW 0.0000 0.10271 0.0000

1925 Target\_Spiroxamine\_GW 0.0000 0.06101 0.0000

1926 Target\_Spiroxamine\_GW 0.0000 0.09332 0.0000

\* Intermediate target output for compound M01\_GW

\* ----------------------------------------------------------------------------------------------------------------------------------

\* yr Identifier AmaLea FlvLea ConLea

\* (kg/ha) (m) (ug/L)

1907 Target\_M01\_GW 0.0000 0.21153 0.0000

1908 Target\_M01\_GW 0.0000 0.05510 0.0000

1909 Target\_M01\_GW 0.0000 0.22351 0.0000

1910 Target\_M01\_GW 0.0000 0.20235 0.0000

1911 Target\_M01\_GW 0.0000 0.28878 0.0000

1912 Target\_M01\_GW 0.0000 0.21486 0.0000

1913 Target\_M01\_GW 0.0000 0.23823 0.0000

1914 Target\_M01\_GW 0.0000 0.23362 0.0000

1915 Target\_M01\_GW 0.0000 0.12763 0.0000

1916 Target\_M01\_GW 0.0000 0.29599 0.0000

1917 Target\_M01\_GW 0.0000 0.08595 0.0000

1918 Target\_M01\_GW 0.0000 0.11813 0.0000

1919 Target\_M01\_GW 0.0000 0.18968 0.0000

1920 Target\_M01\_GW 0.0000 0.22936 0.0000

1921 Target\_M01\_GW 0.0000 0.05328 0.0000

1922 Target\_M01\_GW 0.0000 0.02617 0.0000

1923 Target\_M01\_GW 0.0000 0.08505 0.0000

1924 Target\_M01\_GW 0.0000 0.10271 0.0000

1925 Target\_M01\_GW 0.0000 0.06101 0.0000

1926 Target\_M01\_GW 0.0000 0.09332 0.0000

\* Intermediate target output for compound M02\_GW

\* ----------------------------------------------------------------------------------------------------------------------------------

\* yr Identifier AmaLea FlvLea ConLea

\* (kg/ha) (m) (ug/L)

1907 Target\_M02\_GW 0.0000 0.21153 0.0000

1908 Target\_M02\_GW 0.0000 0.05510 0.0000

1909 Target\_M02\_GW 0.0000 0.22351 0.0000

1910 Target\_M02\_GW 0.0000 0.20235 0.0000

1911 Target\_M02\_GW 0.0000 0.28878 0.0000

1912 Target\_M02\_GW 0.0000 0.21486 0.0000

1913 Target\_M02\_GW 0.0000 0.23823 0.0000

1914 Target\_M02\_GW 0.0000 0.23362 0.0000

1915 Target\_M02\_GW 0.0000 0.12763 0.0000

1916 Target\_M02\_GW 0.0000 0.29599 0.0000

1917 Target\_M02\_GW 0.0000 0.08595 0.0000

1918 Target\_M02\_GW 0.0000 0.11813 0.0000

1919 Target\_M02\_GW 0.0000 0.18968 0.0000

1920 Target\_M02\_GW 0.0000 0.22936 0.0000

1921 Target\_M02\_GW 0.0000 0.05328 0.0000

1922 Target\_M02\_GW 0.0000 0.02617 0.0000

1923 Target\_M02\_GW 0.0000 0.08505 0.0000

1924 Target\_M02\_GW 0.0000 0.10271 0.0000

1925 Target\_M02\_GW 0.0000 0.06101 0.0000

1926 Target\_M02\_GW 0.0000 0.09332 0.0000

\* Intermediate target output for compound M03\_GW

\* ----------------------------------------------------------------------------------------------------------------------------------

\* yr Identifier AmaLea FlvLea ConLea

\* (kg/ha) (m) (ug/L)

1907 Target\_M03\_GW 0.0000 0.21153 0.0000

1908 Target\_M03\_GW 0.0000 0.05510 0.0000

1909 Target\_M03\_GW 0.0000 0.22351 0.0000

1910 Target\_M03\_GW 0.0000 0.20235 0.0000

1911 Target\_M03\_GW 0.0000 0.28878 0.0000

1912 Target\_M03\_GW 0.0000 0.21486 0.0000

1913 Target\_M03\_GW 0.0000 0.23823 0.0000

1914 Target\_M03\_GW 0.0000 0.23362 0.0000

1915 Target\_M03\_GW 0.0000 0.12763 0.0000

1916 Target\_M03\_GW 0.0000 0.29599 0.0000

1917 Target\_M03\_GW 0.0000 0.08595 0.0000

1918 Target\_M03\_GW 0.0000 0.11813 0.0000

1919 Target\_M03\_GW 0.0000 0.18968 0.0000

1920 Target\_M03\_GW 0.0000 0.22936 0.0000

1921 Target\_M03\_GW 0.0000 0.05328 0.0000

1922 Target\_M03\_GW 0.0000 0.02617 0.0000

1923 Target\_M03\_GW 0.0000 0.08505 0.0000

1924 Target\_M03\_GW 0.0000 0.10271 0.0000

1925 Target\_M03\_GW 0.0000 0.06101 0.0000

1926 Target\_M03\_GW 0.0000 0.09332 0.0000

\* Leaching summary per summary period:

\* ----------------------------------------------------------------------------------------------------------------------------------

\* Rank Identifier Percent DateSta DateEnd ConLeaTgt Year

\* (-) (%) (ug/L) (a)

1 ConLea\_Spiroxamine\_GW 2.50 01-Jan-1907 31-Dec-1907 0.00 1907

2 ConLea\_Spiroxamine\_GW 7.50 01-Jan-1908 31-Dec-1908 0.00 1908

3 ConLea\_Spiroxamine\_GW 12.50 01-Jan-1909 31-Dec-1909 0.00 1909

4 ConLea\_Spiroxamine\_GW 17.50 01-Jan-1910 31-Dec-1910 0.00 1910

5 ConLea\_Spiroxamine\_GW 22.50 01-Jan-1911 31-Dec-1911 0.00 1911

6 ConLea\_Spiroxamine\_GW 27.50 01-Jan-1912 31-Dec-1912 0.00 1912

7 ConLea\_Spiroxamine\_GW 32.50 01-Jan-1913 31-Dec-1913 0.00 1913

8 ConLea\_Spiroxamine\_GW 37.50 01-Jan-1914 31-Dec-1914 0.00 1914

9 ConLea\_Spiroxamine\_GW 42.50 01-Jan-1915 31-Dec-1915 0.00 1915

10 ConLea\_Spiroxamine\_GW 47.50 01-Jan-1916 31-Dec-1916 0.00 1916

11 ConLea\_Spiroxamine\_GW 52.50 01-Jan-1917 31-Dec-1917 0.00 1917

12 ConLea\_Spiroxamine\_GW 57.50 01-Jan-1918 31-Dec-1918 0.00 1918

13 ConLea\_Spiroxamine\_GW 62.50 01-Jan-1919 31-Dec-1919 0.00 1919

14 ConLea\_Spiroxamine\_GW 67.50 01-Jan-1920 31-Dec-1920 0.00 1920

15 ConLea\_Spiroxamine\_GW 72.50 01-Jan-1921 31-Dec-1921 0.00 1921

16 ConLea\_Spiroxamine\_GW 77.50 01-Jan-1922 31-Dec-1922 0.00 1922

17 ConLea\_Spiroxamine\_GW 82.50 01-Jan-1923 31-Dec-1923 0.00 1923

18 ConLea\_Spiroxamine\_GW 87.50 01-Jan-1924 31-Dec-1924 0.00 1924

19 ConLea\_Spiroxamine\_GW 92.50 01-Jan-1925 31-Dec-1925 0.00 1925

20 ConLea\_Spiroxamine\_GW 97.50 01-Jan-1926 31-Dec-1926 0.00 1926

\* Rank Identifier Percent DateSta DateEnd ConLeaTgt Year

\* (-) (%) (ug/L) (a)

1 ConLea\_M01\_GW 2.50 01-Jan-1907 31-Dec-1907 0.00 1907

2 ConLea\_M01\_GW 7.50 01-Jan-1908 31-Dec-1908 0.00 1908

3 ConLea\_M01\_GW 12.50 01-Jan-1909 31-Dec-1909 0.00 1909

4 ConLea\_M01\_GW 17.50 01-Jan-1910 31-Dec-1910 0.00 1910

5 ConLea\_M01\_GW 22.50 01-Jan-1911 31-Dec-1911 0.00 1911

6 ConLea\_M01\_GW 27.50 01-Jan-1912 31-Dec-1912 0.00 1912

7 ConLea\_M01\_GW 32.50 01-Jan-1913 31-Dec-1913 0.00 1913

8 ConLea\_M01\_GW 37.50 01-Jan-1914 31-Dec-1914 0.00 1914

9 ConLea\_M01\_GW 42.50 01-Jan-1915 31-Dec-1915 0.00 1915

10 ConLea\_M01\_GW 47.50 01-Jan-1916 31-Dec-1916 0.00 1916

11 ConLea\_M01\_GW 52.50 01-Jan-1917 31-Dec-1917 0.00 1917

12 ConLea\_M01\_GW 57.50 01-Jan-1918 31-Dec-1918 0.00 1918

13 ConLea\_M01\_GW 62.50 01-Jan-1919 31-Dec-1919 0.00 1919

14 ConLea\_M01\_GW 67.50 01-Jan-1920 31-Dec-1920 0.00 1920

15 ConLea\_M01\_GW 72.50 01-Jan-1921 31-Dec-1921 0.00 1921

16 ConLea\_M01\_GW 77.50 01-Jan-1922 31-Dec-1922 0.00 1922

17 ConLea\_M01\_GW 82.50 01-Jan-1923 31-Dec-1923 0.00 1923

18 ConLea\_M01\_GW 87.50 01-Jan-1924 31-Dec-1924 0.00 1924

19 ConLea\_M01\_GW 92.50 01-Jan-1925 31-Dec-1925 0.00 1925

20 ConLea\_M01\_GW 97.50 01-Jan-1926 31-Dec-1926 0.00 1926

\* Rank Identifier Percent DateSta DateEnd ConLeaTgt Year

\* (-) (%) (ug/L) (a)

1 ConLea\_M02\_GW 2.50 01-Jan-1907 31-Dec-1907 0.00 1907

2 ConLea\_M02\_GW 7.50 01-Jan-1908 31-Dec-1908 0.00 1908

3 ConLea\_M02\_GW 12.50 01-Jan-1909 31-Dec-1909 0.00 1909

4 ConLea\_M02\_GW 17.50 01-Jan-1910 31-Dec-1910 0.00 1910

5 ConLea\_M02\_GW 22.50 01-Jan-1911 31-Dec-1911 0.00 1911

6 ConLea\_M02\_GW 27.50 01-Jan-1912 31-Dec-1912 0.00 1912

7 ConLea\_M02\_GW 32.50 01-Jan-1913 31-Dec-1913 0.00 1913

8 ConLea\_M02\_GW 37.50 01-Jan-1914 31-Dec-1914 0.00 1914

9 ConLea\_M02\_GW 42.50 01-Jan-1915 31-Dec-1915 0.00 1915

10 ConLea\_M02\_GW 47.50 01-Jan-1916 31-Dec-1916 0.00 1916

11 ConLea\_M02\_GW 52.50 01-Jan-1917 31-Dec-1917 0.00 1917

12 ConLea\_M02\_GW 57.50 01-Jan-1918 31-Dec-1918 0.00 1918

13 ConLea\_M02\_GW 62.50 01-Jan-1919 31-Dec-1919 0.00 1919

14 ConLea\_M02\_GW 67.50 01-Jan-1920 31-Dec-1920 0.00 1920

15 ConLea\_M02\_GW 72.50 01-Jan-1921 31-Dec-1921 0.00 1921

16 ConLea\_M02\_GW 77.50 01-Jan-1922 31-Dec-1922 0.00 1922

17 ConLea\_M02\_GW 82.50 01-Jan-1923 31-Dec-1923 0.00 1923

18 ConLea\_M02\_GW 87.50 01-Jan-1924 31-Dec-1924 0.00 1924

19 ConLea\_M02\_GW 92.50 01-Jan-1925 31-Dec-1925 0.00 1925

20 ConLea\_M02\_GW 97.50 01-Jan-1926 31-Dec-1926 0.00 1926

\* Rank Identifier Percent DateSta DateEnd ConLeaTgt Year

\* (-) (%) (ug/L) (a)

1 ConLea\_M03\_GW 2.50 01-Jan-1907 31-Dec-1907 0.00 1907

2 ConLea\_M03\_GW 7.50 01-Jan-1908 31-Dec-1908 0.00 1908

3 ConLea\_M03\_GW 12.50 01-Jan-1909 31-Dec-1909 0.00 1909

4 ConLea\_M03\_GW 17.50 01-Jan-1910 31-Dec-1910 0.00 1910

5 ConLea\_M03\_GW 22.50 01-Jan-1911 31-Dec-1911 0.00 1911

6 ConLea\_M03\_GW 27.50 01-Jan-1912 31-Dec-1912 0.00 1912

7 ConLea\_M03\_GW 32.50 01-Jan-1913 31-Dec-1913 0.00 1913

8 ConLea\_M03\_GW 37.50 01-Jan-1914 31-Dec-1914 0.00 1914

9 ConLea\_M03\_GW 42.50 01-Jan-1915 31-Dec-1915 0.00 1915

10 ConLea\_M03\_GW 47.50 01-Jan-1916 31-Dec-1916 0.00 1916

11 ConLea\_M03\_GW 52.50 01-Jan-1917 31-Dec-1917 0.00 1917

12 ConLea\_M03\_GW 57.50 01-Jan-1918 31-Dec-1918 0.00 1918

13 ConLea\_M03\_GW 62.50 01-Jan-1919 31-Dec-1919 0.00 1919

14 ConLea\_M03\_GW 67.50 01-Jan-1920 31-Dec-1920 0.00 1920

15 ConLea\_M03\_GW 72.50 01-Jan-1921 31-Dec-1921 0.00 1921

16 ConLea\_M03\_GW 77.50 01-Jan-1922 31-Dec-1922 0.00 1922

17 ConLea\_M03\_GW 82.50 01-Jan-1923 31-Dec-1923 0.00 1923

18 ConLea\_M03\_GW 87.50 01-Jan-1924 31-Dec-1924 0.00 1924

19 ConLea\_M03\_GW 92.50 01-Jan-1925 31-Dec-1925 0.00 1925

20 ConLea\_M03\_GW 97.50 01-Jan-1926 31-Dec-1926 0.00 1926

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\* PEARL REPORT: Leaching

\* Start date : 01-Jan-1901

\* End date : 31-Dec-1926

\* Target depth : 1.00 m

\* Annual application to the soil surface at 15-Apr; dosage = 0.0600 kg.ha-1

\* Leaching summary for compound Spiroxamine\_GW

\* Molar mass (g.mol-1) : 297.5

\* Saturated vapour pressure (Pa) : 0.970E-02; measured at (C) 20.0

\* Solubility in water (mg.L-1) : 470. ; measured at (C) 20.0

\* Half-life (d) in soil : 45.0; measured at (C) 20.0

\* Kom (coef. for sorption on soil organic matter) (L.kg-1) : 1400.0

\* KF (overall sorption coefficient of the soil target layer) (L.kg-1) : 18.5

\* Freundlich exponent (-) : 0.82

\* 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-1907 211.526 0.0000000 0.000

2 01-Jan-1908 31-Dec-1908 55.100 0.0000000 0.000

3 01-Jan-1909 31-Dec-1909 223.512 0.0000000 0.000

4 01-Jan-1910 31-Dec-1910 202.354 0.0000000 0.000

5 01-Jan-1911 31-Dec-1911 288.776 0.0000000 0.000

6 01-Jan-1912 31-Dec-1912 214.862 0.0000000 0.000

7 01-Jan-1913 31-Dec-1913 238.227 0.0000000 0.000

8 01-Jan-1914 31-Dec-1914 233.616 0.0000000 0.000

9 01-Jan-1915 31-Dec-1915 127.629 0.0000000 0.000

10 01-Jan-1916 31-Dec-1916 295.987 0.0000000 0.000

11 01-Jan-1917 31-Dec-1917 85.955 0.0000000 0.000

12 01-Jan-1918 31-Dec-1918 118.126 0.0000000 0.000

13 01-Jan-1919 31-Dec-1919 189.678 0.0000000 0.000

14 01-Jan-1920 31-Dec-1920 229.364 0.0000000 0.000

15 01-Jan-1921 31-Dec-1921 53.285 0.0000000 0.000

16 01-Jan-1922 31-Dec-1922 26.169 0.0000000 0.000

17 01-Jan-1923 31-Dec-1923 85.048 0.0000000 0.000

18 01-Jan-1924 31-Dec-1924 102.715 0.0000000 0.000

19 01-Jan-1925 31-Dec-1925 61.010 0.0000000 0.000

20 01-Jan-1926 31-Dec-1926 93.324 0.0000000 0.000

\* The average concentration of Spiroxamine\_GW closest to the 80th percentile is 0.000000 ug/L

\* Leaching summary for compound M01\_GW

\* Molar mass (g.mol-1) : 269.4

\* Saturated vapour pressure (Pa) : 0.00 ; measured at (C) 20.0

\* Solubility in water (mg.L-1) : 14.8 ; measured at (C) 20.0

\* Half-life (d) in soil : 33.9; measured at (C) 20.0

\* Kom (coef. for sorption on soil organic matter) (L.kg-1) : 2794.0

\* KF (overall sorption coefficient of the soil target layer) (L.kg-1) : 36.9

\* Freundlich exponent (-) : 0.85

\* 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-1907 211.526 0.0000000 0.000

2 01-Jan-1908 31-Dec-1908 55.100 0.0000000 0.000

3 01-Jan-1909 31-Dec-1909 223.512 0.0000000 0.000

4 01-Jan-1910 31-Dec-1910 202.354 0.0000000 0.000

5 01-Jan-1911 31-Dec-1911 288.776 0.0000000 0.000

6 01-Jan-1912 31-Dec-1912 214.862 0.0000000 0.000

7 01-Jan-1913 31-Dec-1913 238.227 0.0000000 0.000

8 01-Jan-1914 31-Dec-1914 233.616 0.0000000 0.000

9 01-Jan-1915 31-Dec-1915 127.629 0.0000000 0.000

10 01-Jan-1916 31-Dec-1916 295.987 0.0000000 0.000

11 01-Jan-1917 31-Dec-1917 85.955 0.0000000 0.000

12 01-Jan-1918 31-Dec-1918 118.126 0.0000000 0.000

13 01-Jan-1919 31-Dec-1919 189.678 0.0000000 0.000

14 01-Jan-1920 31-Dec-1920 229.364 0.0000000 0.000

15 01-Jan-1921 31-Dec-1921 53.285 0.0000000 0.000

16 01-Jan-1922 31-Dec-1922 26.169 0.0000000 0.000

17 01-Jan-1923 31-Dec-1923 85.048 0.0000000 0.000

18 01-Jan-1924 31-Dec-1924 102.715 0.0000000 0.000

19 01-Jan-1925 31-Dec-1925 61.010 0.0000000 0.000

20 01-Jan-1926 31-Dec-1926 93.324 0.0000000 0.000

\* The average concentration of M01\_GW closest to the 80th percentile is 0.000000 ug/L

\* Leaching summary for compound M02\_GW

\* Molar mass (g.mol-1) : 255.4

\* Saturated vapour pressure (Pa) : 0.970E-02; measured at (C) 20.0

\* Solubility in water (mg.L-1) : 46.6 ; measured at (C) 20.0

\* Half-life (d) in soil : 33.4; measured at (C) 20.0

\* Kom (coef. for sorption on soil organic matter) (L.kg-1) : 2416.0

\* KF (overall sorption coefficient of the soil target layer) (L.kg-1) : 31.9

\* Freundlich exponent (-) : 0.88

\* 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-1907 211.526 0.0000000 0.000

2 01-Jan-1908 31-Dec-1908 55.100 0.0000000 0.000

3 01-Jan-1909 31-Dec-1909 223.512 0.0000000 0.000

4 01-Jan-1910 31-Dec-1910 202.354 0.0000000 0.000

5 01-Jan-1911 31-Dec-1911 288.776 0.0000000 0.000

6 01-Jan-1912 31-Dec-1912 214.862 0.0000000 0.000

7 01-Jan-1913 31-Dec-1913 238.227 0.0000000 0.000

8 01-Jan-1914 31-Dec-1914 233.616 0.0000000 0.000

9 01-Jan-1915 31-Dec-1915 127.629 0.0000000 0.000

10 01-Jan-1916 31-Dec-1916 295.987 0.0000000 0.000

11 01-Jan-1917 31-Dec-1917 85.955 0.0000000 0.000

12 01-Jan-1918 31-Dec-1918 118.126 0.0000000 0.000

13 01-Jan-1919 31-Dec-1919 189.678 0.0000000 0.000

14 01-Jan-1920 31-Dec-1920 229.364 0.0000000 0.000

15 01-Jan-1921 31-Dec-1921 53.285 0.0000000 0.000

16 01-Jan-1922 31-Dec-1922 26.169 0.0000000 0.000

17 01-Jan-1923 31-Dec-1923 85.048 0.0000000 0.000

18 01-Jan-1924 31-Dec-1924 102.715 0.0000000 0.000

19 01-Jan-1925 31-Dec-1925 61.010 0.0000000 0.000

20 01-Jan-1926 31-Dec-1926 93.324 0.0000000 0.000

\* The average concentration of M02\_GW closest to the 80th percentile is 0.000000 ug/L

\* Leaching summary for compound M03\_GW

\* Molar mass (g.mol-1) : 313.5

\* Saturated vapour pressure (Pa) : 0.348E-05; measured at (C) 20.0

\* Solubility in water (mg.L-1) : 0.760 ; measured at (C) 20.0

\* Half-life (d) in soil : 21.0; measured at (C) 20.0

\* Kom (coef. for sorption on soil organic matter) (L.kg-1) : 492.0

\* KF (overall sorption coefficient of the soil target layer) (L.kg-1) : 6.49

\* Freundlich exponent (-) : 0.88

\* 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-1907 211.526 0.0000000 0.000

2 01-Jan-1908 31-Dec-1908 55.100 0.0000000 0.000

3 01-Jan-1909 31-Dec-1909 223.512 0.0000000 0.000

4 01-Jan-1910 31-Dec-1910 202.354 0.0000000 0.000

5 01-Jan-1911 31-Dec-1911 288.776 0.0000000 0.000

6 01-Jan-1912 31-Dec-1912 214.862 0.0000000 0.000

7 01-Jan-1913 31-Dec-1913 238.227 0.0000000 0.000

8 01-Jan-1914 31-Dec-1914 233.616 0.0000000 0.000

9 01-Jan-1915 31-Dec-1915 127.629 0.0000000 0.000

10 01-Jan-1916 31-Dec-1916 295.987 0.0000000 0.000

11 01-Jan-1917 31-Dec-1917 85.955 0.0000000 0.000

12 01-Jan-1918 31-Dec-1918 118.126 0.0000000 0.000

13 01-Jan-1919 31-Dec-1919 189.678 0.0000000 0.000

14 01-Jan-1920 31-Dec-1920 229.364 0.0000000 0.000

15 01-Jan-1921 31-Dec-1921 53.285 0.0000000 0.000

16 01-Jan-1922 31-Dec-1922 26.169 0.0000000 0.000

17 01-Jan-1923 31-Dec-1923 85.048 0.0000000 0.000

18 01-Jan-1924 31-Dec-1924 102.715 0.0000000 0.000

19 01-Jan-1925 31-Dec-1925 61.010 0.0000000 0.000

20 01-Jan-1926 31-Dec-1926 93.324 0.0000000 0.000

\* The average concentration of M03\_GW 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 24

\* ExposureType Groundwater

\* Scenario data subset FOCUS Groundwater version 5

\* Location CHATEAUDUN

\* Meteo\_station chat-m

\* Soil\_type CHAT-S\_Soil

\* Crop\_calendar CHAT-WCEREALS

\* Substance Spiroxamine\_GW

\* Application\_scheme spiro\_WC\_Chat

\* Irrigation\_scheme No

\* Deposition\_scheme No

\* Result\_Spiroxamine\_GW 0.000000

\* Result\_M01\_GW 0.000000

\* Result\_M02\_GW 0.000000

\* Result\_M03\_GW 0.000000

\* End of PEARL REPORT: Project\_Summary

\* ----------------------------------------------------------------------------------------------------------------------------------

\*

\* The run time was 4 minutes and 26 seconds

* 1. PECsw calculations

(FOCUS SWASH 5.3)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Use No. | | | 1-4 | 3-4 |
| Crop | | | Winter cereals | Spring cereals |
| Application rate  [g a.i./ha] | | | Prothioconazole: 160  Spiroxamine: 300 | Prothioconazole: 160  Spiroxamine: 300 |
| Number of applications/interval [d] | | | 1 / - | 1 / - |
| Season | | | Early | |
| Run ID | Prothioconazole | | ULTRACENT\_WC\_Early | ULTRACENT\_SC\_Early |
| Spiroxamine | | Spiro\_ULTRA\_WC\_Early | Spiro\_ULTRA\_SC\_Early |
| Season | | | Late | |
| Run ID | | Prothioconazole | ULTRACENT\_WC\_Late | - |
| Spiroxamine | Spiro\_ULTRA\_WC\_Late | - |

**Example output file: prothioconazole, winter cereals, D1\_Ditch**

\* ------------------------------------------------------------------------------

\* TOXSWA REPORT: Header

\* Results from the TOXSWA model (c) Wageningen University & Research

\* FOCUS TOXSWA version : 5.5.3

\* TOXSWA model version : 3.3.6

\* TOXSWA created on : 17-Dec-2017

\* Working directory : C:\Swashprojects\ULTRACENT460EC\TOXSWA

\* Run ID : 518

\* Input file generated on : 13-06-2024

\* ------------------------------------------------------------------------------

\* Scenario : D1\_Ditch

\* Meteo Station : Lanna

\* Substance : Prothioconazole

\* Flow Type : Transient

\* Water Body Type : D1\_DITCH

\* Application Scheme : FOCUS\_EXAMPLE

\* Simulation Period : 01-Jan-1982 to 30-Apr-1983

\* --------------------------------------------------------------------------------

\* End of TOXSWA REPORT: Header

\* --------------------------------------------------------------------------------

\* --------------------------------------------------------------------------------

\* TOXSWA REPORT: Substance properties and substance loadings

\* Summary for the following substances

\* Substance 1: Prothioconazole

\* Molar mass (g.mol-1) : 344.3

\* Saturated vapour pressure (Pa) : 0.400E-06 measured at (C) : 20.0

\* Water solubility (mg.L-1) : 0.300E+03 measured at (C) : 20.0

\* Half-life in water, lumped (d): 1.00 at reference temperature (C) : 20.0

\* Half-life in sediment (d) : 2.80 at reference temperature (C) : 20.0

\* Kom susp.solids (Freundlich coef. for sorption on organic matter) (L.kg-1) : 1023.78

\* Freundlich exponent (-) : 0.90

\* Kom sediment (Freundlich coef. for sorption on organic matter) (L.kg-1) : 1023.78

\* Freundlich exponent (-) : 0.90

\* Kmp (coef. for sorption on macrophytes-dry weight) (L.kg-1) : 0.00

\* Metabolite molar fraction formed in water: Prothioconazole -> desthio\_SW 0.32

\* Metabolite molar fraction formed in sediment: Prothioconazole -> desthio\_SW 0.27

\* Substance 2: desthio\_SW

\* Molar mass (g.mol-1) : 312.2

\* Saturated vapour pressure (Pa) : 0.000E+00 measured at (C) : 20.0

\* Water solubility (mg.L-1) : 0.300E+03 measured at (C) : 20.0

\* Half-life in water, lumped (d): 1000.00 at reference temperature (C) : 20.0

\* Half-life in sediment (d) : 1000.00 at reference temperature (C) : 20.0

\* Kom susp.solids (Freundlich coef. for sorption on organic matter) (L.kg-1) : 333.76

\* Freundlich exponent (-) : 0.81

\* Kom sediment (Freundlich coef. for sorption on organic matter) (L.kg-1) : 333.76

\* Freundlich exponent (-) : 0.81

\* Kmp (coef. for sorption on macrophytes-dry weight) (L.kg-1) : 0.00

\* Summary for the substance loadings

\* Application pattern and deposition by drift on water surface

\* Appl.No Date/Hour Mass (g ai.ha-1) Areic mean deposition (mg.m-2)

1 29-Mar-1982-09h00 160.0000 0.3083

\* Lateral entry: drainage Simulated by: MACRO

\* Soil metabolite: desthio\_SW

\* Maximum hourly fluxes from lateral entries

\* Year Type Water/Substance Flux Date

1982 Water 0.5005 mm.m-2.hr-1 20-Dec-1982-13h30

1982 Drainage Prothioconazole < 1e-6 mg.m-2.hr-1 01-Jan-1982-00h00

1982 Drainage Prothioconazole < 1e-6 ug.L-1 01-Jan-1982-00h00

1982 Drainage desthio\_SW 0.000594 mg.m-2.hr-1 24-Nov-1982-11h30

1982 Drainage desthio\_SW 1.327 ug.L-1 24-Nov-1982-11h30

1983 Water 0.2093 mm.m-2.hr-1 21-Mar-1983-10h30

1983 Drainage Prothioconazole < 1e-6 mg.m-2.hr-1 01-Jan-1983-00h00

1983 Drainage Prothioconazole < 1e-6 ug.L-1 01-Jan-1983-00h00

1983 Drainage desthio\_SW 0.000154 mg.m-2.hr-1 21-Mar-1983-10h30

1983 Drainage desthio\_SW 1.025 ug.L-1 01-Jan-1983-01h30

\*

\* End of TOXSWA REPORT: Substance properties and substance loadings

\*--------------------------------------------------------------------------------

\*--------------------------------------------------------------------------------

\* TOXSWA REPORT: Water and mass balances

\* Table: Water balance of the water body

\* Key to the table

\* --------------------------------------------------------------------------------

\* DelSto Change in volume present in water layer (m3)

\* VolPrc Volume entered in water body by precipitaton (m3)

\* VolDra Volume entered in water body by drainage (m3)

\* VolRun Volume entered in water body by runoff (m3)

\* VolUps Volume flowed into water body across upstream boundary (m3)

\* VolDwn Volume flowed out of water body across downstream boundary (m3)

\* --------------------------------------------------------------------------------

\* Monthly water balance terms (m3) in water system of 100.00 m

\* --------------------------------------------------------------------------------------------

\* Year Month Identifier DelSto VolPrc VolDra VolRun VolUps VolDwn

\* --------------------------------------------------------------------------------------------

1982 Jan BalWatLay -0.2070 0.0000 44.0942 0.0000 108.8204 153.2128

1982 Feb BalWatLay 0.1250 0.0000 222.1861 0.0000 462.7556 684.8955

1982 Mar BalWatLay 0.0420 0.0000 616.0876 0.0000 1252.5586 1868.7187

1982 Apr BalWatLay -0.2040 0.0000 282.6228 0.0000 585.3169 868.3693

1982 May BalWatLay -0.0030 0.0000 26.3185 0.0000 73.1128 99.5148

1982 Jun BalWatLay 0.0000 0.0000 0.0000 0.0000 19.8000 19.8000

1982 Jul BalWatLay 0.0000 0.0000 0.0000 0.0000 20.4600 20.4600

1982 Aug BalWatLay 0.0000 0.0000 0.0000 0.0000 20.4600 20.4600

1982 Sep BalWatLay 0.0000 0.0000 0.0000 0.0000 19.8000 19.8000

1982 Oct BalWatLay 0.0000 0.0000 0.0000 0.0000 20.4600 20.4600

1982 Nov BalWatLay 0.6080 0.0000 395.7630 0.0000 810.6484 1205.6135

1982 Dec BalWatLay -0.2780 0.0000 660.4822 0.0000 1341.7827 2002.8398

1983 Jan BalWatLay -0.1490 0.0000 153.5138 0.0000 327.6423 481.4309

1983 Feb BalWatLay -0.1810 0.0000 32.0642 0.0000 82.7302 115.0363

1983 Mar BalWatLay 0.2390 0.0000 201.6234 0.0000 423.5254 625.0389

1983 Apr BalWatLay -0.0030 0.0000 149.0120 0.0000 317.8310 466.9279

\* --------------------------------------------------------------------------------------------

\* Annual water balance terms (m3) in water system of 100.00 m

\* (year may be incomplete)

\* ----------------------------------------------------------------------------------------------------

\* Year Identifier DelSto VolPrc VolDra VolRun VolUps VolDwn

\* ----------------------------------------------------------------------------------------------------

1982 BalWatLay 0.0830 0.0000 2247.5544 0.0000 4735.9757 6984.1446

1983 BalWatLay -0.0940 0.0000 536.2134 0.0000 1151.7289 1688.4339

\* ----------------------------------------------------------------------------------------------------

\* Table: Mass balance of substance in the water layer

\* Key to the table

\* --------------------------------------------------------------------------------

\* DelMas Change in mass present in water layer system (g)

\* MasIni Mass initially present in water layer (g)

\* MasDrf Loading of water body by drift (g)

\* MasAtmDep Loading of water body by atmopheric deposition (g)

\* MasDra Loading of water body by drainage (g)

\* MasRnf Loading of water body by run-off (g)

\* MasSedIn Mass penetrated into sediment (g)

\* MasSedOut Mass transferred out of sediment (g)

\* MasDwn Mass flowed across downstream boundary end (g)

\* MasUps Mass flowed across upstream boundary (g)

\* MasTra Mass transformed in water layer (g)

\* MasFor Mass formed in water layer (g)

\* MasVol Mass volatilised from water layer (g)

\* --------------------------------------------------------------------------------

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------

\* Monthly mass balance terms (g) in entire water layer of water body system of 100.00 m for substance: Prothioconazole

\* Year Month DelMas MasIni MasDrf MasAtmDep MasDra MasRnf MasSedIn MasSedOut MasDwn MasUps MasTra MasFor MasVol

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------

1982 Jan 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Feb 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Mar 0.0016 0.0000 0.0308 0.0000 0.0000 0.0000 -0.0023 0.0001 -0.0227 0.0000 -0.0043 0.0000 0.0000

1982 Apr -0.0016 0.0016 0.0000 0.0000 0.0000 0.0000 0.0000 0.0010 -0.0021 0.0000 -0.0004 0.0000 0.0000

1982 May -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 -0.0000 0.0000 -0.0000 0.0000 0.0000

1982 Jun -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 -0.0000 0.0000 -0.0000 0.0000 0.0000

1982 Jul -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 -0.0000 0.0000 -0.0000 0.0000 0.0000

1982 Aug -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 -0.0000 0.0000 -0.0000 0.0000 0.0000

1982 Sep -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 -0.0000 0.0000 0.0000

1982 Oct -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Nov -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Dec -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Jan -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Feb -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Mar -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Apr -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------

\* Monthly mass balance terms (g) in entire water layer of water body system of 100.00 m for substance: desthio\_SW

\* Year Month DelMas MasIni MasDrf MasAtmDep MasDra MasRnf MasSedIn MasSedOut MasDwn MasUps MasTra MasFor MasVol

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------

1982 Jan 0.0025 0.0000 0.0000 0.0000 0.0275 0.0000 -0.0028 0.0000 -0.0221 0.0000 -0.0000 0.0000 0.0000

1982 Feb 0.0016 0.0025 0.0000 0.0000 0.1567 0.0000 -0.0021 0.0000 -0.1530 0.0000 -0.0000 0.0000 0.0000

1982 Mar 0.0010 0.0041 0.0000 0.0000 0.5040 0.0000 -0.0024 0.0000 -0.5018 0.0000 -0.0000 0.0012 0.0000

1982 Apr -0.0018 0.0051 0.0000 0.0000 0.2043 0.0000 -0.0005 0.0000 -0.2058 0.0000 -0.0000 0.0001 0.0000

1982 May -0.0010 0.0034 0.0000 0.0000 0.0173 0.0000 -0.0003 0.0003 -0.0183 0.0000 -0.0000 0.0000 0.0000

1982 Jun -0.0011 0.0023 0.0000 0.0000 0.0000 0.0000 0.0000 0.0008 -0.0019 0.0000 -0.0000 0.0000 0.0000

1982 Jul -0.0005 0.0012 0.0000 0.0000 0.0000 0.0000 0.0000 0.0006 -0.0011 0.0000 -0.0000 0.0000 0.0000

1982 Aug -0.0002 0.0007 0.0000 0.0000 0.0000 0.0000 0.0000 0.0005 -0.0007 0.0000 -0.0000 0.0000 0.0000

1982 Sep -0.0001 0.0005 0.0000 0.0000 0.0000 0.0000 0.0000 0.0004 -0.0005 0.0000 -0.0000 0.0000 0.0000

1982 Oct -0.0001 0.0004 0.0000 0.0000 0.0000 0.0000 0.0000 0.0003 -0.0004 0.0000 -0.0000 0.0000 0.0000

1982 Nov 0.0080 0.0003 0.0000 0.0000 0.4828 0.0000 -0.0040 0.0001 -0.4709 0.0000 -0.0000 0.0000 0.0000

1982 Dec -0.0017 0.0083 0.0000 0.0000 0.7297 0.0000 -0.0030 0.0000 -0.7284 0.0000 -0.0000 0.0000 0.0000

1983 Jan -0.0011 0.0065 0.0000 0.0000 0.1470 0.0000 -0.0012 0.0000 -0.1469 0.0000 -0.0000 0.0000 0.0000

1983 Feb -0.0021 0.0055 0.0000 0.0000 0.0283 0.0000 -0.0002 0.0002 -0.0303 0.0000 -0.0000 0.0000 0.0000

1983 Mar 0.0011 0.0034 0.0000 0.0000 0.1490 0.0000 -0.0010 0.0002 -0.1471 0.0000 -0.0000 0.0000 0.0000

1983 Apr -0.0006 0.0045 0.0000 0.0000 0.0986 0.0000 -0.0003 0.0000 -0.0989 0.0000 -0.0000 0.0000 0.0000

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------------

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------

\* Annual mass balance terms (g) in water layer of water body system of 100.00 m for substance: Prothioconazole

\* (years may be incomplete

\* Year DelMas MasIni MasDrf MasAtmDep MasDra MasRnf MasSedIn MasSedOut MasDwn MasUps MasTra MasFor MasVol

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------

1982 0.0000 0.0000 0.0308 0.0000 0.0000 0.0000 -0.0023 0.0010 -0.0249 0.0000 -0.0047 0.0000 0.0000

1983 -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------

\* Annual mass balance terms (g) in water layer of water body system of 100.00 m for substance: desthio\_SW

\* (years may be incomplete

\* Year DelMas MasIni MasDrf MasAtmDep MasDra MasRnf MasSedIn MasSedOut MasDwn MasUps MasTra MasFor MasVol

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------

1982 0.0065 0.0000 0.0000 0.0000 2.1223 0.0000 -0.0151 0.0030 -2.1048 0.0000 -0.0002 0.0014 0.0000

1983 -0.0027 0.0065 0.0000 0.0000 0.4229 0.0000 -0.0027 0.0004 -0.4231 0.0000 -0.0001 0.0000 0.0000

\* ----------------------------------------------------------------------------------------------------------------------------------------------------------------

\* Table: Mass balance of substance in the sediment

\* Key to the table

\* --------------------------------------------------------------------------------

\* DelMasSed Change in mass present in sediment system (g)

\* MasIniSed Mass initially present in sediment (g)

\* MasErs Loading of sediment by erosion (g)

\* MasWatIn Mass transferred to water layer (g)

\* MasWatOut Mass transferred from water layer (g)

\* MasDwnSed Mass flowed across boundary to deeper layers (g)

\* MasTraSed Mass transformed in sediment (g)

\* MasFor Mass formed in sediment (g)

\* --------------------------------------------------------------------------------

\* ----------------------------------------------------------------------------------------------------------

\* Monthly mass balance terms (g) in sediment of water body system of 100.00 m for substance: Prothioconazole

\* Year Month DelMasSed MasIniSed MasErs MasWatIn MasWatOut MasDwnSed MasTra MasFor

\* ----------------------------------------------------------------------------------------------------------

1982 Jan 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Feb 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Mar 0.0020 0.0000 0.0000 -0.0001 0.0023 0.0000 -0.0002 0.0000

1982 Apr -0.0019 0.0020 0.0000 -0.0010 0.0000 0.0000 -0.0010 0.0000

1982 May -0.0001 0.0001 0.0000 -0.0000 0.0000 0.0000 -0.0001 0.0000

1982 Jun -0.0000 0.0000 0.0000 -0.0000 0.0000 0.0000 -0.0000 0.0000

1982 Jul -0.0000 0.0000 0.0000 -0.0000 0.0000 0.0000 -0.0000 0.0000

1982 Aug -0.0000 0.0000 0.0000 -0.0000 0.0000 0.0000 -0.0000 0.0000

1982 Sep -0.0000 0.0000 0.0000 -0.0000 0.0000 0.0000 -0.0000 0.0000

1982 Oct -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 -0.0000 0.0000

1982 Nov -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1982 Dec -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Jan -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Feb -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Mar -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

1983 Apr -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

\* ----------------------------------------------------------------------------------------------------------

\* Monthly mass balance terms (g) in sediment of water body system of 100.00 m for substance: desthio\_SW

\* Year Month DelMasSed MasIniSed MasErs MasWatIn MasWatOut MasDwnSed MasTra MasFor

\* ----------------------------------------------------------------------------------------------------------

1982 Jan 0.0028 0.0000 0.0000 0.0000 0.0028 0.0000 -0.0000 0.0000

1982 Feb 0.0021 0.0028 0.0000 0.0000 0.0021 0.0000 -0.0000 0.0000

1982 Mar 0.0024 0.0049 0.0000 0.0000 0.0024 0.0000 -0.0000 0.0001

1982 Apr 0.0007 0.0073 0.0000 -0.0000 0.0005 0.0000 -0.0000 0.0002

1982 May -0.0000 0.0080 0.0000 -0.0003 0.0003 0.0000 -0.0001 0.0000

1982 Jun -0.0008 0.0079 0.0000 -0.0008 0.0000 0.0000 -0.0001 0.0000

1982 Jul -0.0007 0.0071 0.0000 -0.0006 0.0000 0.0000 -0.0001 0.0000

1982 Aug -0.0006 0.0064 0.0000 -0.0005 0.0000 0.0000 -0.0001 0.0000

1982 Sep -0.0004 0.0058 0.0000 -0.0004 0.0000 0.0000 -0.0001 0.0000

1982 Oct -0.0003 0.0054 0.0000 -0.0003 0.0000 0.0000 -0.0000 0.0000

1982 Nov 0.0039 0.0050 0.0000 -0.0001 0.0040 0.0000 -0.0000 0.0000

1982 Dec 0.0030 0.0089 0.0000 0.0000 0.0030 0.0000 -0.0000 0.0000

1983 Jan 0.0011 0.0119 0.0000 0.0000 0.0012 0.0000 -0.0001 0.0000

1983 Feb -0.0000 0.0130 0.0000 -0.0002 0.0002 0.0000 -0.0001 0.0000

1983 Mar 0.0008 0.0130 0.0000 -0.0002 0.0010 0.0000 -0.0001 0.0000

1983 Apr 0.0002 0.0137 0.0000 -0.0000 0.0003 0.0000 -0.0001 0.0000

\* ----------------------------------------------------------------------------------------------------------

\* --------------------------------------------------------------------------------------------------------

\* Annual mass balance terms (g) in sediment of water body system of 100.00 m for substance: Prothioconazole

\* (years may be incomplete

\* Year DelMasSed MasIniSed MasErs MasWatIn MasWatOut MasDwnSed MasTraSed MasForSed

\* --------------------------------------------------------------------------------------------------------

1982 0.0000 0.0000 0.0000 -0.0010 0.0023 0.0000 -0.0013 0.0000

1983 -0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000

\* --------------------------------------------------------------------------------------------------------

\* Annual mass balance terms (g) in sediment of water body system of 100.00 m for substance: desthio\_SW

\* (years may be incomplete

\* Year DelMasSed MasIniSed MasErs MasWatIn MasWatOut MasDwnSed MasTraSed MasForSed

\* --------------------------------------------------------------------------------------------------------

1982 0.0119 0.0000 0.0000 -0.0030 0.0151 0.0000 -0.0006 0.0003

1983 0.0021 0.0000 0.0000 -0.0004 0.0027 0.0000 -0.0002 0.0000

\* --------------------------------------------------------------------------------------------------------

\*

\* End of TOXSWA REPORT: Water and mass balances

\*--------------------------------------------------------------------------------

\* --------------------------------------------------------------------------------

\* TOXSWA REPORT: Exposure in water body

\*

\* Table: Annual maximum exposure concentrations in water layer of substance: Prothioconazole

\* In segment from 90.00 to 100.00 m in water body

\* --------------------------------------------------------------------------------

\* Year Concentration Date Daynr

\* g.L-1 (since start simulation)

\* --------------------------------------------------------------------------------

1982 1.015 29-Mar-1982-09h00 88

1983 < 1e-6 06-Jan-1983-23h00 371

\* Table: Annual maximum exposure concentrations in water layer of substance: desthio\_SW

\* In segment from 90.00 to 100.00 m in water body

\* --------------------------------------------------------------------------------

\* Year Concentration Date Daynr

\* g.L-1 (since start simulation)

\* --------------------------------------------------------------------------------

1982 0.4385 24-Nov-1982-14h00 328

1983 0.3309 01-Jan-1983-00h00 366

\*

\* Tables: Maximum exposure concentrations in water layer

\* In segment from 90.00 to 100.00 m in water body

\* Actual concentrations PECsw as well as PECsed refer to momentary concentrations

\* occurring 1, 2 etc days after the global maximum concentration.

\* The Time Weighted Average Exposure Concentrations (TWAEC) have been calculated

\* for a moving time frame and have been allocated to the last moment of the period considered

\* Table: PEC in water layer of substance: Prothioconazole

\* --------------------------------------------------------------------------------

\* Concentration Date Daynr

\* g.L-1 (since start simulation)

\* --------------------------------------------------------------------------------

Global max 1.015 29-Mar-1982-09h00 88

(incl. suspend.solids 1.017 29-Mar-1982-09h00 88)

PECsw\_1\_day 0.6265 30-Mar-1982-09h00 89

PECsw\_2 days 0.2452 31-Mar-1982-09h00 90

PECsw\_3\_days 0.08269 01-Apr-1982-09h00 91

PECsw\_4\_days 0.03353 02-Apr-1982-09h00 92

PECsw\_7\_days 0.01015 05-Apr-1982-09h00 95

PECsw\_14\_days 0.000350 12-Apr-1982-09h00 102

PECsw\_21\_days 0.000422 19-Apr-1982-09h00 109

PECsw\_28\_days 0.000393 26-Apr-1982-09h00 116

PECsw\_42\_days 0.000044 10-May-1982-09h00 130

PECsw\_50\_days 0.000032 18-May-1982-09h00 138

PECsw\_100\_days < 1e-6 07-Jul-1982-09h00 188

\* --------------------------------------------------------------------------------

\* Legend: - in table means PECsw is later than end of simulated period: 30-Apr-1983

\* Table: Maximum Time Weighted Averaged Exposure Concentrations substance: Prothioconazole

\* --------------------------------------------------------------------------------

\* Concentration Date Daynr

\* g.L-1 (since start simulation)

\* --------------------------------------------------------------------------------

TWAECsw\_1\_day 0.8155 30-Mar-1982-09h00 89

TWAECsw\_2\_days 0.6177 31-Mar-1982-09h00 90

TWAECsw\_3\_days 0.4615 01-Apr-1982-09h00 91

TWAECsw\_4\_days 0.3593 02-Apr-1982-09h00 92

TWAECsw\_7\_days 0.2127 05-Apr-1982-09h00 95

TWAECsw\_14\_days 0.1081 12-Apr-1982-09h00 102

TWAECsw\_21\_days 0.07224 19-Apr-1982-09h00 109

TWAECsw\_28\_days 0.05428 26-Apr-1982-09h00 116

TWAECsw\_42\_days 0.03627 10-May-1982-09h00 130

TWAECsw\_50\_days 0.03047 18-May-1982-09h00 138

TWAECsw\_100\_days 0.01524 07-Jul-1982-09h00 188

\* --------------------------------------------------------------------------------

\* Table: PEC in water layer of substance: desthio\_SW

\* --------------------------------------------------------------------------------

\* Concentration Date Daynr

\* g.L-1 (since start simulation)

\* --------------------------------------------------------------------------------

Global max 0.4385 24-Nov-1982-14h00 328

(incl. suspend.solids 0.4394 24-Nov-1982-14h00 328)

PECsw\_1\_day 0.4252 25-Nov-1982-14h00 329

PECsw\_2 days 0.4144 26-Nov-1982-14h00 330

PECsw\_3\_days 0.4260 27-Nov-1982-14h00 331

PECsw\_4\_days 0.4258 28-Nov-1982-14h00 332

PECsw\_7\_days 0.4111 01-Dec-1982-14h00 335

PECsw\_14\_days 0.3990 08-Dec-1982-14h00 342

PECsw\_21\_days 0.3761 15-Dec-1982-14h00 349

PECsw\_28\_days 0.3452 22-Dec-1982-14h00 356

PECsw\_42\_days 0.3223 05-Jan-1983-14h00 370

PECsw\_50\_days 0.3080 13-Jan-1983-14h00 378

PECsw\_100\_days 0.1732 04-Mar-1983-14h00 428

\* --------------------------------------------------------------------------------

\* Legend: - in table means PECsw is later than end of simulated period: 30-Apr-1983

\* Table: Maximum Time Weighted Averaged Exposure Concentrations substance: desthio\_SW

\* --------------------------------------------------------------------------------

\* Concentration Date Daynr

\* g.L-1 (since start simulation)

\* --------------------------------------------------------------------------------

TWAECsw\_1\_day 0.4337 25-Nov-1982-11h00 329

TWAECsw\_2\_days 0.4268 26-Nov-1982-10h00 330

TWAECsw\_3\_days 0.4225 27-Nov-1982-10h00 331

TWAECsw\_4\_days 0.4229 28-Nov-1982-11h00 332

TWAECsw\_7\_days 0.4211 01-Dec-1982-09h00 335

TWAECsw\_14\_days 0.4122 08-Dec-1982-09h00 342

TWAECsw\_21\_days 0.4030 15-Dec-1982-08h00 349

TWAECsw\_28\_days 0.3936 20-Dec-1982-10h00 354

TWAECsw\_42\_days 0.3752 03-Jan-1983-08h00 368

TWAECsw\_50\_days 0.3662 11-Jan-1983-07h00 376

TWAECsw\_100\_days 0.3178 27-Feb-1983-09h00 423

\* --------------------------------------------------------------------------------

\* Tables: Maximum exposure content in sediment

--------------------------------------------------------------------------------

\* In the top 5.00 cm sediment located under

\* the water body segment from 90.00 to 100.00 m,

\* the content is expressed as g substance per kg dry sediment.

\* Table: PEC in sediment of substance: Prothioconazole

\* --------------------------------------------------------------------------------

\* Content Date Daynr

\* g.kg-1 (since start simulation)

\* --------------------------------------------------------------------------------

Global max 0.7484 31-Mar-1982-13h00 90

PECsed\_1\_day 0.6960 01-Apr-1982-13h00 91

PECsed\_2\_days 0.6060 02-Apr-1982-13h00 92

PECsed\_3\_days 0.5233 03-Apr-1982-13h00 93

PECsed\_4\_days 0.4542 04-Apr-1982-13h00 94

PECsed\_7\_days 0.3123 07-Apr-1982-13h00 97

PECsed\_14\_days 0.1473 14-Apr-1982-13h00 104

PECsed\_21\_days 0.08107 21-Apr-1982-13h00 111

PECsed\_28\_days 0.04796 28-Apr-1982-13h00 118

PECsed\_42\_days 0.01249 12-May-1982-13h00 132

PECsed\_50\_days 0.005687 20-May-1982-13h00 140

PECsed\_100\_days 0.000009 09-Jul-1982-13h00 190

\* --------------------------------------------------------------------------------

\* Legend: - in table means PECsed is later than end of simulated period: 30-Apr-1983

\* Table: Maximum Time Weighted Averaged Exposure Content substance: Prothioconazole

\* --------------------------------------------------------------------------------

\* Content Date Daynr

\* g.kg-1 (since start simulation)

\* --------------------------------------------------------------------------------

TWAECsed\_1\_day 0.7419 01-Apr-1982-03h00 91

TWAECsed\_2\_days 0.7233 01-Apr-1982-18h00 91

TWAECsed\_3\_days 0.6967 02-Apr-1982-12h00 92

TWAECsed\_4\_days 0.6662 03-Apr-1982-07h00 93

TWAECsed\_7\_days 0.5751 05-Apr-1982-23h00 95

TWAECsed\_14\_days 0.4191 12-Apr-1982-15h00 102

TWAECsed\_21\_days 0.3231 19-Apr-1982-12h00 109

TWAECsed\_28\_days 0.2607 26-Apr-1982-11h00 116

TWAECsed\_42\_days 0.1848 10-May-1982-09h00 130

TWAECsed\_50\_days 0.1570 18-May-1982-09h00 138

TWAECsed\_100\_days 0.07916 07-Jul-1982-09h00 188

\* --------------------------------------------------------------------------------

\* Table: PEC in sediment of substance: desthio\_SW

\* --------------------------------------------------------------------------------

\* Content Date Daynr

\* g.kg-1 (since start simulation)

\* --------------------------------------------------------------------------------

Global max 5.053 28-Apr-1983-23h00 483

PECsed\_1\_day 5.053 29-Apr-1983-23h00 484

PECsed\_2\_days 5.053 30-Apr-1983-23h00 485

PECsed\_3\_days < 1e-6 01-May-1983-23h00 486

PECsed\_4\_days < 1e-6 02-May-1983-23h00 487

PECsed\_7\_days - - -

PECsed\_14\_days - - -

PECsed\_21\_days - - -

PECsed\_28\_days - - -

PECsed\_42\_days - - -

PECsed\_50\_days - - -

PECsed\_100\_days - - -

\* --------------------------------------------------------------------------------

\* Legend: - in table means PECsed is later than end of simulated period: 30-Apr-1983

\* Table: Maximum Time Weighted Averaged Exposure Content substance: desthio\_SW

\* --------------------------------------------------------------------------------

\* Content Date Daynr

\* g.kg-1 (since start simulation)

\* --------------------------------------------------------------------------------

TWAECsed\_1\_day 5.053 29-Apr-1983-11h00 484

TWAECsed\_2\_days 5.053 29-Apr-1983-22h00 484

TWAECsed\_3\_days 5.053 30-Apr-1983-11h00 485

TWAECsed\_4\_days 5.053 01-May-1983-00h00 486

TWAECsed\_7\_days 5.052 01-May-1983-00h00 486

TWAECsed\_14\_days 5.045 01-May-1983-00h00 486

TWAECsed\_21\_days 5.038 01-May-1983-00h00 486

TWAECsed\_28\_days 5.029 01-May-1983-00h00 486

TWAECsed\_42\_days 4.999 01-May-1983-00h00 486

TWAECsed\_50\_days 4.978 01-May-1983-00h00 486

TWAECsed\_100\_days 4.853 01-May-1983-00h00 486

\* --------------------------------------------------------------------------------

\*

\* End of TOXSWA REPORT: Exposure in water body

\* --------------------------------------------------------------------------------

\* The run time was 8 minutes and 43 seconds

(FOCUS SWAN v5.0.1)

**Winter cereals, early application with 10 m vegetative buffer**

\*-----------------------------------------------------------------

\*

\* SWAN log file

\* Created by SWAN v5.0.1 at 14-Jun-2024, 14:22:22

\*

\* Processing parameter file: C:\SwashProjects\ULTRACENT460EC\Step4\Step4.tpf

\*

\*-----------------------------------------------------------------

\*

Loaded parameter file: C:\SwashProjects\ULTRACENT460EC\Step4\Step4.tpf

Loading source project: C:\SwashProjects\ULTRACENT460EC

Loaded TOXSWA file: 518.txw

Loaded TOXSWA file: 519.txw

Loaded TOXSWA file: 520.txw

Loaded TOXSWA file: 521.txw

Loaded TOXSWA file: 522.txw

Loaded TOXSWA file: 523.txw

Loaded TOXSWA file: 524.txw

Loaded TOXSWA file: 525.txw

Loaded TOXSWA file: 526.txw

Loaded TOXSWA file: 527.txw

Loaded TOXSWA file: 528.txw

Loaded TOXSWA file: 529.txw

Loaded TOXSWA file: 530.txw

Loaded TOXSWA file: 531.txw

Loaded support file: macro00519\_p.m2t

Loaded support file: macro00519\_m.m2t

Loaded support file: macro00519\_p.m2t

Loaded support file: macro00519\_m.m2t

Loaded support file: macro00521\_p.m2t

Loaded support file: macro00521\_m.m2t

Loaded support file: macro00521\_p.m2t

Loaded support file: macro00521\_m.m2t

Loaded support file: macro00522\_p.m2t

Loaded support file: macro00522\_m.m2t

Loaded support file: macro00524\_p.m2t

Loaded support file: macro00524\_m.m2t

Loaded support file: macro00524\_p.m2t

Loaded support file: macro00524\_m.m2t

Loaded support file: macro00526\_p.m2t

Loaded support file: macro00526\_m.m2t

Loaded support file: macro00526\_p.m2t

Loaded support file: macro00526\_m.m2t

Loaded support file: macro00527\_p.m2t

Loaded support file: macro00527\_m.m2t

Loaded support file: 00529-C1.p2t

Loaded support file: 00529-C2.p2t

Loaded support file: 00529-C1.p2t

Loaded support file: 00529-C2.p2t

Loaded support file: 00530-C1.p2t

Loaded support file: 00530-C2.p2t

Loaded support file: 00531-C1.p2t

Loaded support file: 00531-C2.p2t

Load complete

Validating...

Validation complete

\*

\*-----------------------------------------------------------------

\*

\* Run-off mitigation

\*-----------------------------------------------------------------

\*

Reduction run-off mode: ManualReduction

Fractional reduction in run-off volume: 0.6

Fractional reduction in run-off flux: 0.6

Fractional reduction in erosion mass: 0.85

Fractional reduction in erosion flux: 0.85

Run-off mitigation has been applied to: 00529-C1\_pond.p2t

Run-off mitigation has been applied to: 00529-C2\_pond.p2t

Run-off mitigation has been applied to: 00529-C1\_stream.p2t

Run-off mitigation has been applied to: 00529-C2\_stream.p2t

Run-off mitigation has been applied to: 00530-C1.p2t

Run-off mitigation has been applied to: 00530-C2.p2t

Run-off mitigation has been applied to: 00531-C1.p2t

Run-off mitigation has been applied to: 00531-C2.p2t

\*

\*-----------------------------------------------------------------

\*

\* Spray drift mitigation

\*-----------------------------------------------------------------

\*

Nozzle reduction (%): 0

Use Step 3 mass loadings: No

Select buffer width: Yes

Buffer width (m): 10

Enter mass loadings directly: No

Pond mass loading (mg/m ): 0

Ditch mass loading (mg/m ): 0

Stream mass loading (mg/m ): 0

Spray drift mitigation has been applied to: 518.txw

Spray drift mitigation has been applied to: 519.txw

Spray drift mitigation has been applied to: 520.txw

Spray drift mitigation has been applied to: 521.txw

Spray drift mitigation has been applied to: 522.txw

Spray drift mitigation has been applied to: 523.txw

Spray drift mitigation has been applied to: 524.txw

Spray drift mitigation has been applied to: 525.txw

Spray drift mitigation has been applied to: 526.txw

Spray drift mitigation has been applied to: 527.txw

Spray drift mitigation has been applied to: 528.txw

Spray drift mitigation has been applied to: 529.txw

Spray drift mitigation has been applied to: 530.txw

Spray drift mitigation has been applied to: 531.txw

\*

\*-----------------------------------------------------------------

\*

\* Dry deposition after volatilisation

\*-----------------------------------------------------------------

\*

Dry deposition mitigation was not applied to any file

\*

\*-----------------------------------------------------------------

\*

Saving mitigated project: C:\SwashProjects\ULTRACENT460EC\Step4

Saved TOXSWA file: 518.txw

Saved TOXSWA file: 519.txw

Saved TOXSWA file: 520.txw

Saved TOXSWA file: 521.txw

Saved TOXSWA file: 522.txw

Saved TOXSWA file: 523.txw

Saved TOXSWA file: 524.txw

Saved TOXSWA file: 525.txw

Saved TOXSWA file: 526.txw

Saved TOXSWA file: 527.txw

Saved TOXSWA file: 528.txw

Saved TOXSWA file: 529.txw

Saved TOXSWA file: 530.txw

Saved TOXSWA file: 531.txw

Saved m2t file: macro00519\_p\_ditch.m2t

Saved m2t file: macro00519\_m\_ditch.m2t

Saved m2t file: macro00519\_p\_stream.m2t

Saved m2t file: macro00519\_m\_stream.m2t

Saved m2t file: macro00521\_p\_ditch.m2t

Saved m2t file: macro00521\_m\_ditch.m2t

Saved m2t file: macro00521\_p\_stream.m2t

Saved m2t file: macro00521\_m\_stream.m2t

Saved m2t file: macro00522\_p.m2t

Saved m2t file: macro00522\_m.m2t

Saved m2t file: macro00524\_p\_pond.m2t

Saved m2t file: macro00524\_m\_pond.m2t

Saved m2t file: macro00524\_p\_stream.m2t

Saved m2t file: macro00524\_m\_stream.m2t

Saved m2t file: macro00526\_p\_pond.m2t

Saved m2t file: macro00526\_m\_pond.m2t

Saved m2t file: macro00526\_p\_stream.m2t

Saved m2t file: macro00526\_m\_stream.m2t

Saved m2t file: macro00527\_p.m2t

Saved m2t file: macro00527\_m.m2t

Saved p2t file: 00529-C1\_pond.p2t

Saved p2t file: 00529-C2\_pond.p2t

Saved p2t file: 00529-C1\_stream.p2t

Saved p2t file: 00529-C2\_stream.p2t

Saved p2t file: 00530-C1.p2t

Saved p2t file: 00530-C2.p2t

Saved p2t file: 00531-C1.p2t

Saved p2t file: 00531-C2.p2t

Saved updated MACRO/PRZM files. Copying auxiliary files...

Saving files for crop Cereals, winter

Copying .inp files..

Copying C:\SwashProjects\ULTRACENT460EC\PRZM\cereals\_winter\R1-CW-.INP to C:\SwashProjects\ULTRACENT460EC\Step4\PRZM\cereals\_winter\R1-CW-.INP

Copying C:\SwashProjects\ULTRACENT460EC\PRZM\cereals\_winter\R3-CW-.INP to C:\SwashProjects\ULTRACENT460EC\Step4\PRZM\cereals\_winter\R3-CW-.INP

Copying C:\SwashProjects\ULTRACENT460EC\PRZM\cereals\_winter\R4-CW-.INP to C:\SwashProjects\ULTRACENT460EC\Step4\PRZM\cereals\_winter\R4-CW-.INP

Copying .zts files..

Copying C:\SwashProjects\ULTRACENT460EC\PRZM\cereals\_winter\R1-CW-.ZTS to C:\SwashProjects\ULTRACENT460EC\Step4\PRZM\cereals\_winter\R1-CW-.ZTS

Copying C:\SwashProjects\ULTRACENT460EC\PRZM\cereals\_winter\R3-CW-.ZTS to C:\SwashProjects\ULTRACENT460EC\Step4\PRZM\cereals\_winter\R3-CW-.ZTS

Copying C:\SwashProjects\ULTRACENT460EC\PRZM\cereals\_winter\R4-CW-.ZTS to C:\SwashProjects\ULTRACENT460EC\Step4\PRZM\cereals\_winter\R4-CW-.ZTS

Save complete

Copied Bologna.met

Copied Brimstone.met

Copied Lanna.met

Copied La\_Jailliere.met

Copied Roujan.met

Copied Skousbo.met

Copied Thiva.met

Copied Vredepeel.met

Copied Weiherbach.met

Copied ULTRACENT460EC\_report.txt

Generated TOXSWA batch file: C:\SwashProjects\ULTRACENT460EC\Step4\TOXSWA\TOXSWABat.bat

\*

\*-----------------------------------------------------------------

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\* Completed in 1.7 seconds

\*

\*-----------------------------------------------------------------