Fluopyram (FLU):  
PECsw,sed FOCUS EUR   
 -   
Use in  
fruiting vegetables  
in Europe

|  |
| --- |
| Fluopyram (AE C656948) |
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# FOCUS surface water assessment

Predicted environmental concentrations of the fungicide fluopyram in surface water (PECsw) and sediment (PECsed) were calculated for the use in Europe, employing the tiered FOCUS Surface Water (SW) approach (FOCUS 2001, 2015). All relevant entry routes of a compound into surface water (principally a combination of spray drift and runoff/erosion or drain flow) were considered in these calculations.

Section 1.2 contains information concerning the substance properties of fluopyram used in the calculations.

The uses of fluopyram in relevant crops were assessed according to the Good Agricultural Practice (GAP) in Europe. The GAP translation to individual simulations and their parameters is presented in Section 1.3. Section 1.4 contains any information specific to the assessments at individual FOCUS levels.

Section 1.5 provides results of all exposure assessments in tabular form. In case of multiple application uses, the maximum of single and multiple application concentrations is presented.

Relevant references are listed in Section 1.6.

Any additional results, *e.g.*, the outcomes of single application simulations are listed in Section 1.7.

Summary of the methods employed for the simulations is provided in Section 1.8.

## Report and calculation information

### Meta data

Template version : SWFOCUS-Pv4-dRR-T2.0

PROUTT version : 4.5.10.0

RRP directory : X:\RRP2100266

RRP filename : Z:\\_PROUTT\SP\RRP2100266\RRP2100266\_FLU\_20210628.rrp

### Software

Steps 1-2 calculations were performed according to formulas implemented in FOCUS STEPS 1+2 version 3.2.

Step 3 calculations were performed using the FOCUS SWASH 5.3 suite, including

FOCUS PRZM 4.3.1

FOCUS MACRO 5.5.4

FOCUS TOXSWA 5.5.3

Refinement at Step 4 level was performed with the SWAN tool, version 5.0.1.

### Data structure and archiving

All data related to the calculations are archived and can be obtained in electronic form upon request.

The amount of data generated for each surface water assessment can be quite substantial. Also, for consistency and efficiency reasons, a specific folder structure with special nomenclature is used for storing all assessments. The following information should help in not losing orientation and/or easily finding the information needed.

The whole exposure assessment is stored in a single folder (RRP). At the top level, among others, there are following files:

* \*\_Step12.erm and \*\_Step34.erm – metadata files providing info on which molecules were used for calculations at the respective levels, and assignment of GAP groups and assessments (in human readable form) to their numerical identifiers
* \*.csv – full results (all PECs and TWAs) for Steps 1-2, Step 3, and Step 4 for the simulated scenarios – loading the file to Excel and applying the respective filters can be used for getting information on specific parts of the whole assessment

The folder structure beneath is organized as follows (the assignment of the shortcuts and codes is provided in the report).

DGRxx

* xx= double digit numerical code
* level corresponding to individual GAP groups as defined for the assessment (please note that DGR I as described in this report will be for technical reasons represented as DGR00 in the folder structure; decrement the reported DGR number to get the correct number in the file hierarchy)

DGRxx\Fs3

DGRxx\Fs4

* the results for Step  3 and Step 4 are stored in separated folder trees

DGRxx\Fs3\PMTyy

DGRxx\Fs4\PMTyy

* yy = double digit numerical code, with continuous numbering across DGRs
* level corresponding to the individual assessments defined within the individual GAP groups (please note that PMT I as described in this report will be for technical reasons represented as PMT00 in the folder structure; decrement the reported PMT number to get the correct number in the file hierarchy)

DGRxx\Fs3\PMTyy\RzzAAA01

DGRxx\Fs3\PMTyy\RzzAAA0N

* zz = double digit numerical code with continuous numbering across DGRs
* N = number of applications in case multiple application simulation was performed; single application simulation is always performed
* AAA = 3-character code identifying the parent substance
* these folders contain the respective SWASH projects with the input/output data
* additional files, e.g., graphical outputs may be available

DGRxx\Fs4\PMTyy\RzzAAA01\Step04LM

DGRxx\Fs4\PMTyy\RzzAAA0N\Step04LM

* for Step 4, the same logic is employed but the underlying project structure contains the folders corresponding to the applied mitigation measures
* the simulations are organized according to the buffers employed
  + DGRxx\Fs4\PMTyy\RzzAAA0N\Step04LM\10m
* at lower levels, various possibilities are provided
  + DriftOnly folders concern only drift mitigation
  + N-prefixed folders (N00, N50, …) indicate the level of drift reducing nozzles considered
* for all folders, the SWAN tpf files are provided for easier reference

## Substance data

The assessment presented in this report is based on substance parameters whose derivation is described in detail in the modelling core info document M-466153-01-1 (EnSa-13-0445, Kley 2013; see Section 1.6 for detailed reference).

For this assessment the **geometric mean Koc** have been used for fluopyram.

### Substance input parameters at FOCUS Steps 1-2 level

Table 1.2‑1 summarises the substance related parameters used for fluopyram in the calculations at FOCUS SW Steps 1-2 level.

Table 1.2‑1: Substance parameters used at FOCUS Steps 1-2 level

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Fluopyram |
| Molar mass  Water solubility  Koc  Degradation  Soil  Total system  Water  Sediment  Max occurrence  Water / sediment  Soil | (g/mol)  (mg/L)  (mL/g)  (days)  (days)  (days)  (days)  (%)  (%) | 396.72  16  273 a)  123.05  1032  1032  1000  100  100 |
| a) geometric mean Koc as required by Greece authorities | | |

### Substance input parameters at Steps 3/4 level

Substance parameters which were used for the calculations at the Step 3/4 level are summarised in Table 1.2‑2.

Table 1.2‑2: Substance parameters used for fluopyram at Step 3/4 level

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Parent |
| Substance  SWASH code |  | Fluopyram  FLU |
| **General**  Molar mass  Water solubility (temp.)  Vapour pressure (temp.) | (g/mol)  (mg/L)  (Pa) | 396.72  16 (20 °C)  0 (20 °C) |
| **Crop processes**  Coefficient for uptake by plant (TSCF)  Wash-off factor | (-)  (1/m) | 0  50 |
| **Sorption**  KOC  KOM  Freundlich exponent (1/n) | (mL/g)  (mL/g)  (-) | 273 a)  158.35  0.8269 |
| **Transformation**  DT50 in soil  temperature  moisture content (pF)  formation fraction in soil  DT50 in water  temperature  formation fraction in water  DT50 in sediment  temperature  formation fraction in sediment  DT50 on canopy | (days)  (°C)  (log(cm))  (-)  (days)  (°C)  (-)  (days)  (°C)  (-)  (days) | 123.05  20  2  -  1000  20  -  1000  20  -  10 |
| **Exponent for the effect of moisture**  PRZM and TOXSWA (Walker exp.)  MACRO (calibrated value) | (-)  (-) | 0.7  0.49 |
| **Effect of temperature**  TOXSWA (molar activation energy)  MACRO (effect of temperature)  PRZM (Q10) | (kJ/mol)  (1/K)  (-) | 65.4  0.0948  2.58 |
| a) geometric mean Koc | | |

## Application and GAP

Intended GAPs for the use of fluopyram in Europe were analysed and consolidated according to regulatory and modelling requirements. As a result, one or more uses may be covered by a single modelling GAP row (DGR). The translation of the regulatory GAP for modelling purposes is shown in Table 1.3‑1.

Table 1.3‑1: GAP translation for modelling purposes

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| GAP group ID | GAP group name (DGR) and use IDs | Covered crop(s) | Growth stage | Max. apps | Interval (days) | Rate (kg a.s./ha) |
| DGR I | fruiting vegetables I  2-9; 11-17; 156-180; 182; 184-188; 190-217; 219; 221-228 | fruiting vegetables | BBCH 51 - 89 | 2 | 10 | 2 × 0.1 |
| DGR II | fruiting vegetables II  18; 19; 22; 23; 26; 44; 47; 48; 51-54; 57-59; 62; 63; 66-69; 72-74; 76; 80; 82-87; 88; 89; 99; 103-106; 121; 122; 127-130; 132-139; 141; 143-147; 149; 153; 233-235; 243; 247; 250-253; 259-261; 272; 276; 279; 280; 283; 284; 290; 293 | fruiting vegetables | BBCH 51 - 89 | 1 | - | 1 × 0.1 |
| DGR III | fruiting vegetables III  20; 21; 24; 25; 27-43; 45; 46; 49; 50; 56; 61; 64; 65; 70; 71; 75; 77; 78; 97; 101; 107-120; 124; 126; 151; 155; 240; 241; 245; 249; 266-268; 277; 278; 281; 282 | fruiting vegetables | BBCH 51 - 89 | 2 | 10 | 2 × 0.15 |
| DGR IV | fruiting vegetables IV | fruiting vegetables | BBCH 51 - 89 | 1 | - | 1 × 0.15 |
| DGR V | fruiting vegetables V  90-95; 287 | fruiting vegetables | BBCH 51 - 89 | 2 | 7 | 2 × 0.15 |

### Steps 1-2

The implementation of the modelling GAP (Table 1.3‑1) at Steps 1-2 level is shown in Table 1.3‑2. One or more calculations (modelling tasks, PMT) are necessary to fully cover the use assessed. The number and name of the respective DGR is provided for easier reference.

Table 1.3‑2: FOCUS Steps 1-2 specific data for the GAPs assessed

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Run IDs (DGR / PMT) | GAP group name (DGR) | Assessment name (PMT) | FOCUS crop (crop group) | Season | Crop  cover |
| DGR I PMT I | fruiting vegetables I | spring | Vegetables, fruiting (Arable crops) | Spring (Mar. - May) | full canopy |
| DGR I PMT II | fruiting vegetables I | summer | Vegetables, fruiting (Arable crops) | Summer (Jun. - Sep.) | full canopy |
| DGR II PMT III | fruiting vegetables II | spring | Vegetables, fruiting (Arable crops) | Spring (Mar. - May) | full canopy |
| DGR II PMT IV | fruiting vegetables II | summer | Vegetables, fruiting (Arable crops) | Summer (Jun. - Sep.) | full canopy |
| DGR III PMT V | fruiting vegetables III | spring | Vegetables, fruiting (Arable crops) | Spring (Mar. - May) | full canopy |
| DGR III PMT VI | fruiting vegetables III | summer | Vegetables, fruiting (Arable crops) | Summer (Jun. - Sep.) | full canopy |
| DGR IV PMT VII | fruiting vegetables IV | spring | Vegetables, fruiting (Arable crops) | Spring (Mar. - May) | full canopy |
| DGR IV PMT VIII | fruiting vegetables IV | summer | Vegetables, fruiting (Arable crops) | Summer (Jun. - Sep.) | full canopy |
| DGR V PMT IX | fruiting vegetables V | spring | Vegetables, fruiting (Arable crops) | Spring (Mar. - May) | full canopy |
| DGR V PMT X | fruiting vegetables V | summer | Vegetables, fruiting (Arable crops) | Summer (Jun. - Sep.) | full canopy |

### Step 3

This section provides the implementation of the modelling GAP (Table 1.3‑1) at Step 3 level. Also here, one or more calculations (modelling tasks, PMT) are necessary to fully cover the use assessed. The number and name of the respective DGR is provided for easier reference.

Please note that PMTs at Steps 1-2 and Step 3 do not necessarily fully correspond to each other due to inherent differences in the models.

The application dates for this assessment were set with the help of the tool AppDate 3.06 (Klein 2019), which proposes dates for specific crop stages (given as BBCH code) based on the crop development as defined in the FOCUS model scenarios for groundwater and surface water.

Application windows were chosen based on the BBCH growth stage for the use of fluopyram. The BBCH range of the use pattern for tomatoes is large (BBCH 51 - 89). Therefore, two application windows were assessed with a run (PMT) using the earliest growth stage (BBCH 51) and a run using the latest growth stage (BBCH 89). The start of the early application window and the end of the late application window were determined from absolute application dates for fruiting vegetables (covering tomatoes) at BBCH 51 and BBCH 89 according to AppDate. The length of the application window was determined according to FOCUS (2001, 2015) considering the number of applications and the minimum application interval. The actual date of application within the windows was determined by the Pesticide Application Timer (PAT) incorporated in FOCUS SWASH 5.3. The PAT calculator eliminates a significant number of potential application dates due to the requirement that at least 10 mm of precipitation be received within ten days following application.

The summary of all Step 3 PMTs is provided in Table 1.3‑3. The detailed information on individual uses is given in subsections that follow.

Table 1.3‑3: Overview of FOCUS Step 3 assessments

|  |  |  |  |
| --- | --- | --- | --- |
| Run IDs (DGR / PMT) | GAP group name (DGR) | Assessment name (PMT) | FOCUS crop (crop group) |
| DGR I PMT I | fruiting vegetables I | BBCH 51 | Vegetables, fruiting (Arable crops) |
| DGR I PMT II | fruiting vegetables I | BBCH 89 | Vegetables, fruiting (Arable crops) |
| DGR II PMT III | fruiting vegetables II | BBCH 51 | Vegetables, fruiting (Arable crops) |
| DGR II PMT IV | fruiting vegetables II | BBCH 89 | Vegetables, fruiting (Arable crops) |
| DGR III PMT V | fruiting vegetables III | BBCH 51 | Vegetables, fruiting (Arable crops) |
| DGR III PMT VI | fruiting vegetables III | BBCH 89 | Vegetables, fruiting (Arable crops) |
| DGR IV PMT VII | fruiting vegetables IV | BBCH 51 | Vegetables, fruiting (Arable crops) |
| DGR IV PMT VIII | fruiting vegetables IV | BBCH 89 | Vegetables, fruiting (Arable crops) |
| DGR V PMT IX | fruiting vegetables V | BBCH 51 | Vegetables, fruiting (Arable crops) |
| DGR V PMT X | fruiting vegetables V | BBCH 89 | Vegetables, fruiting (Arable crops) |

#### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.3‑4: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 51 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 15-May - 24-Jun  19-May - 28-Jun  15-Jun - 25-Jul  26-May - 05-Jul |

Table 1.3‑5: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR I / PMT I fruiting vegetables I BBCH 51 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 2 × 0.1 kg a.s./ha, 10d int. | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 40 days for all scenarios (min = 40 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 15-May/24-Jun  (135/175) | 19-May  31-May | R2  Stream  R3  Stream  R4  Stream | 19-May/28-Jun  (139/179)  15-Jun/25-Jul  (166/206)  26-May/05-Jul  (146/186) | 20-May  03-Jun  18-Jun  11-Jul  27-May  06-Jun |

#### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.3‑6: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 89 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 29-Jun - 08-Aug  19-Jul - 28-Aug  14-Jul - 23-Aug  04-Jun - 14-Jul |

Table 1.3‑7: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR I / PMT II fruiting vegetables I BBCH 89 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 2 × 0.1 kg a.s./ha, 10d int. | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 40 days for all scenarios (min = 40 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 29-Jun/08-Aug  (180/220) | 30-Jun  17-Jul | R2  Stream  R3  Stream  R4  Stream | 19-Jul/28-Aug  (200/240)  14-Jul/23-Aug  (195/235)  04-Jun/14-Jul  (155/195) | 31-Jul  10-Aug  17-Jul  30-Jul  05-Jun  23-Jun |

#### Fruiting vegetables II - BBCH 51 - 0.1 kg a.s./ha (DGR II / PMT III)

Table 1.3‑8: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 51 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 15-May - 14-Jun  19-May - 18-Jun  15-Jun - 15-Jul  26-May - 25-Jun |

Table 1.3‑9: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR II / PMT III fruiting vegetables II BBCH 51 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 0.1 kg a.s./ha | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 30 days for all scenarios (min = 30 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 15-May/14-Jun  (135/165) | 19-May | R2  Stream  R3  Stream  R4  Stream | 19-May/18-Jun  (139/169)  15-Jun/15-Jul  (166/196)  26-May/25-Jun  (146/176) | 20-May  18-Jun  27-May |

#### Fruiting vegetables II - BBCH 89 - 0.1 kg a.s./ha (DGR II / PMT IV)

Table 1.3‑10: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 89 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 09-Jul - 08-Aug  29-Jul - 28-Aug  24-Jul - 23-Aug  14-Jun - 14-Jul |

Table 1.3‑11: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR II / PMT IV fruiting vegetables II BBCH 89 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 0.1 kg a.s./ha | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 30 days for all scenarios (min = 30 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 09-Jul/08-Aug  (190/220) | 17-Jul | R2  Stream  R3  Stream  R4  Stream | 29-Jul/28-Aug  (210/240)  24-Jul/23-Aug  (205/235)  14-Jun/14-Jul  (165/195) | 05-Aug  24-Jul  23-Jun |

#### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.3‑12: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 51 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 15-May - 24-Jun  19-May - 28-Jun  15-Jun - 25-Jul  26-May - 05-Jul |

Table 1.3‑13: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR III / PMT V fruiting vegetables III BBCH 51 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 2 × 0.15 kg a.s./ha, 10d int. | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 40 days for all scenarios (min = 40 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 15-May/24-Jun  (135/175) | 19-May  31-May | R2  Stream  R3  Stream  R4  Stream | 19-May/28-Jun  (139/179)  15-Jun/25-Jul  (166/206)  26-May/05-Jul  (146/186) | 20-May  03-Jun  18-Jun  11-Jul  27-May  06-Jun |

#### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.3‑14: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 89 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 29-Jun - 08-Aug  19-Jul - 28-Aug  14-Jul - 23-Aug  04-Jun - 14-Jul |

Table 1.3‑15: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR III / PMT VI fruiting vegetables III BBCH 89 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 2 × 0.15 kg a.s./ha, 10d int. | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 40 days for all scenarios (min = 40 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 29-Jun/08-Aug  (180/220) | 30-Jun  17-Jul | R2  Stream  R3  Stream  R4  Stream | 19-Jul/28-Aug  (200/240)  14-Jul/23-Aug  (195/235)  04-Jun/14-Jul  (155/195) | 31-Jul  10-Aug  17-Jul  30-Jul  05-Jun  23-Jun |

#### Fruiting vegetables IV - BBCH 51 - 0.15 kg a.s./ha (DGR IV / PMT VII)

Table 1.3‑16: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 51 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 15-May - 14-Jun  19-May - 18-Jun  15-Jun - 15-Jul  26-May - 25-Jun |

Table 1.3‑17: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR IV / PMT VII fruiting vegetables IV BBCH 51 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 0.15 kg a.s./ha | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 30 days for all scenarios (min = 30 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 15-May/14-Jun  (135/165) | 19-May | R2  Stream  R3  Stream  R4  Stream | 19-May/18-Jun  (139/169)  15-Jun/15-Jul  (166/196)  26-May/25-Jun  (146/176) | 20-May  18-Jun  27-May |

#### Fruiting vegetables IV - BBCH 89 - 0.15 kg a.s./ha (DGR IV / PMT VIII)

Table 1.3‑18: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 89 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 09-Jul - 08-Aug  29-Jul - 28-Aug  24-Jul - 23-Aug  14-Jun - 14-Jul |

Table 1.3‑19: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR IV / PMT VIII fruiting vegetables IV BBCH 89 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 0.15 kg a.s./ha | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 30 days for all scenarios (min = 30 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 09-Jul/08-Aug  (190/220) | 17-Jul | R2  Stream  R3  Stream  R4  Stream | 29-Jul/28-Aug  (210/240)  24-Jul/23-Aug  (205/235)  14-Jun/14-Jul  (165/195) | 05-Aug  24-Jul  23-Jun |

#### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.3‑20: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 51 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 15-May - 21-Jun  19-May - 25-Jun  15-Jun - 22-Jul  26-May - 02-Jul |

Table 1.3‑21: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR V / PMT IX fruiting vegetables V BBCH 51 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 2 × 0.15 kg a.s./ha, 7d int. | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 37 days for all scenarios (min = 37 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 15-May/21-Jun  (135/172) | 19-May  31-May | R2  Stream  R3  Stream  R4  Stream | 19-May/25-Jun  (139/176)  15-Jun/22-Jul  (166/203)  26-May/02-Jul  (146/183) | 20-May  27-May  18-Jun  25-Jun  27-May  06-Jun |

#### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.3‑22: Summarised FOCUS Step 3 application data (PAT settings)

| Assessment name | Scenario | Application window used in modelling |
| --- | --- | --- |
| BBCH 89 | D6 Ditch  R2 Stream  R3 Stream  R4 Stream | 02-Jul - 08-Aug  22-Jul - 28-Aug  17-Jul - 23-Aug  07-Jun - 14-Jul |

Table 1.3‑23: Full FOCUS Step 3 application data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Run IDs GAP group name (DGR) Assessment name (PMT)** | | | DGR V / PMT X fruiting vegetables V BBCH 89 | | |
| **FOCUS model crop (crop group)** | | | Vegetables, fruiting (Arable crops) | | |
| **Use pattern** | | | 2 × 0.15 kg a.s./ha, 7d int. | | |
| **Appl. method (Run-off CAM, depth inc.)** | | | Ground spray (2 - appln foliar linear, 4 cm) | | |
| **PAT start date**  **(relative to crop event or absolute)** | | | absolute | | |
| **PAT window range** | | | 37 days for all scenarios (min = 37 days) | | |
| Drainage scenarios | PAT  start/end date  (Julian day) | Application date | Runoff scenarios | PAT  start/end date  (Julian day) | Application date |
| D6  Ditch | 02-Jul/08-Aug  (183/220) | 06-Jul  17-Jul | R2  Stream  R3  Stream  R4  Stream | 22-Jul/28-Aug  (203/240)  17-Jul/23-Aug  (198/235)  07-Jun/14-Jul  (158/195) | 05-Aug  12-Aug  17-Jul  24-Jul  12-Jun  23-Jun |

## Assessment specific information

### FOCUS Steps 1-2

Standard procedures and settings were used for Steps 1-2 assessment.

### FOCUS Step 3

Standard procedures and settings were used for Step 3 assessment.

### FOCUS Steps 4

At Step 4, the following mitigation settings were used according to the FOCUS Landscape and Mitigation Factors report (FOCUS 2007). The relevant parameters are summarised in Table 1.4‑1 and Table 1.4‑2.

Table 1.4‑1: Mitigation approaches used

|  |  |  |
| --- | --- | --- |
| Buffer length | Mitigation type | Drift reduction nozzles |
| 0 m  5 m  10 m  20 m | Spray drift  Spray drift  Spray drift & RunOff  Spray drift & RunOff | 0 %, 50 %, 75 %, 90 % |

Table 1.4‑2: Runoff mitigation parameters used for the assessment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Fractional reduction in:** | 10 m | 20 m |  |  |
| **Runoff: Volume**  **Flux**  **Erosion: Mass**  **Flux** | 0.60  0.60  0.85  0.85 | 0.80  0.80  0.95  0.95 |  |  |

## Results

### FOCUS Steps 1-2

The PEC values were calculated for fluopyram according to the equations implemented in the “STEPS 1-2 in FOCUS” calculator.

#### Parent substance fluopyram

##### Fruiting vegetables I - spring - 2 × 100g a.s./ha, 10d int. (DGR I / PMT I)

Table 1.5‑1: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name spring (DGR I / PMT I)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 50.7 |  | RunOff | 49.9 | 137 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 4.09 |  | Drainage | 3.95 | 10.8 |  |
| Southern Europe | Mar. - May (Spring) | 6.88 |  | Drainage | 6.72 | 18.4 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables I - summer - 2 × 100g a.s./ha, 10d int. (DGR I / PMT II)

Table 1.5‑2: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name summer (DGR I / PMT II)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 50.7 |  | RunOff | 49.9 | 137 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 4.09 |  | Drainage | 3.95 | 10.8 |  |
| Southern Europe | Jun. - Sep. (Summer) | 5.48 |  | Drainage | 5.33 | 14.6 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables II - spring - 1 × 100g a.s./ha (DGR II / PMT III)

Table 1.5‑3: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables II, assessment name spring (DGR II / PMT III)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 25.4 |  | RunOff | 24.9 | 68.5 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 2.17 | \* | Drainage | 2.09 | 5.75 | \* |
| Southern Europe | Mar. - May (Spring) | 3.61 | \* | Drainage | 3.52 | 9.66 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables II - summer - 1 × 100g a.s./ha (DGR II / PMT IV)

Table 1.5‑4: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables II, assessment name summer (DGR II / PMT IV)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 25.4 |  | RunOff | 24.9 | 68.5 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 2.17 | \* | Drainage | 2.09 | 5.75 | \* |
| Southern Europe | Jun. - Sep. (Summer) | 2.89 | \* | Drainage | 2.80 | 7.70 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - spring - 2 × 150g a.s./ha, 10d int. (DGR III / PMT V)

Table 1.5‑5: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name spring (DGR III / PMT V)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 6.13 |  | Drainage | 5.92 | 16.3 |  |
| Southern Europe | Mar. - May (Spring) | 10.3 |  | Drainage | 10.1 | 27.7 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - summer - 2 × 150g a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.5‑6: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name summer (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 6.13 |  | Drainage | 5.92 | 16.3 |  |
| Southern Europe | Jun. - Sep. (Summer) | 8.22 |  | Drainage | 8.00 | 22.0 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables IV - spring - 1 × 150g a.s./ha (DGR IV / PMT VII)

Table 1.5‑7: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables IV, assessment name spring (DGR IV / PMT VII)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 38.0 |  | RunOff | 37.4 | 103 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 3.26 | \* | Drainage | 3.14 | 8.62 | \* |
| Southern Europe | Mar. - May (Spring) | 5.41 | \* | Drainage | 5.27 | 14.5 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables IV - summer - 1 × 150g a.s./ha (DGR IV / PMT VIII)

Table 1.5‑8: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables IV, assessment name summer (DGR IV / PMT VIII)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 38.0 |  | RunOff | 37.4 | 103 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 3.26 | \* | Drainage | 3.14 | 8.62 | \* |
| Southern Europe | Jun. - Sep. (Summer) | 4.33 | \* | Drainage | 4.21 | 11.6 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - spring - 2 × 150g a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.5‑9: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name spring (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 6.17 |  | Drainage | 5.96 | 16.4 |  |
| Southern Europe | Mar. - May (Spring) | 10.4 |  | Drainage | 10.1 | 27.9 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - summer - 2 × 150g a.s./ha, 7d int. (DGR V / PMT X)

Table 1.5‑10: FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name summer (DGR V / PMT X)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 6.17 |  | Drainage | 5.96 | 16.4 |  |
| Southern Europe | Jun. - Sep. (Summer) | 8.28 |  | Drainage | 8.05 | 22.1 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

### FOCUS Step 3

Step 3 calculations were conducted for fluopyram employing the models of the FOCUS SW suite. Reported values represent loadings *via* all relevant entry routes.

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.5‑11: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.672 |  | Drainage | 0.156 | 0.832 |  |
| R2 | Stream | 0.905 |  | RunOff | 0.051 | 1.74 |  |
| R3 | Stream | 1.96 |  | RunOff | 0.229 | 1.93 |  |
| R4 | Stream | 3.34 |  | RunOff | 0.239 | 1.53 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.5‑12: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 2.00 |  | Drainage | 0.459 | 2.15 |  |
| R2 | Stream | 0.562 | \* | Spray drift | 0.060 | 1.90 |  |
| R3 | Stream | 2.15 |  | RunOff | 0.208 | 1.98 |  |
| R4 | Stream | 2.39 |  | RunOff | 0.213 | 1.50 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables II - BBCH 51 - 0.1 kg a.s./ha (DGR II / PMT III)

Table 1.5‑13: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables II, assessment name BBCH 51 (DGR II / PMT III)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.633 | \* | Spray drift | 0.069 | 0.402 | \* |
| R2 | Stream | 0.561 | \* | Spray drift | 0.022 | 0.710 | \* |
| R3 | Stream | 1.10 | \* | RunOff | 0.103 | 0.833 | \* |
| R4 | Stream | 1.32 | \* | RunOff | 0.094 | 0.620 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables II - BBCH 89 - 0.1 kg a.s./ha (DGR II / PMT IV)

Table 1.5‑14: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables II, assessment name BBCH 89 (DGR II / PMT IV)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 1.27 | \* | Drainage | 0.260 | 1.27 | \* |
| R2 | Stream | 0.562 | \* | Spray drift | 0.027 | 1.17 | \* |
| R3 | Stream | 1.28 | \* | RunOff | 0.132 | 1.32 | \* |
| R4 | Stream | 1.71 | \* | RunOff | 0.119 | 0.910 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.5‑15: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 1.00 |  | Drainage | 0.235 | 1.21 |  |
| R2 | Stream | 1.45 |  | RunOff | 0.082 | 2.53 |  |
| R3 | Stream | 3.06 |  | RunOff | 0.350 | 2.79 |  |
| R4 | Stream | 5.13 |  | RunOff | 0.356 | 2.29 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.5‑16: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 2.94 |  | Drainage | 0.687 | 3.10 |  |
| R2 | Stream | 0.843 | \* | RunOff | 0.094 | 2.49 |  |
| R3 | Stream | 3.34 |  | RunOff | 0.322 | 2.91 |  |
| R4 | Stream | 3.65 |  | RunOff | 0.328 | 2.23 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables IV - BBCH 51 - 0.15 kg a.s./ha (DGR IV / PMT VII)

Table 1.5‑17: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables IV, assessment name BBCH 51 (DGR IV / PMT VII)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.950 | \* | Spray drift | 0.105 | 0.588 | \* |
| R2 | Stream | 0.842 | \* | Spray drift | 0.034 | 1.02 | \* |
| R3 | Stream | 1.75 | \* | RunOff | 0.159 | 1.25 | \* |
| R4 | Stream | 2.00 | \* | RunOff | 0.139 | 0.922 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables IV - BBCH 89 - 0.15 kg a.s./ha (DGR IV / PMT VIII)

Table 1.5‑18: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables IV, assessment name BBCH 89 (DGR IV / PMT VIII)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 1.86 | \* | Drainage | 0.405 | 1.90 | \* |
| R2 | Stream | 0.843 | \* | Spray drift | 0.042 | 1.53 | \* |
| R3 | Stream | 2.04 | \* | RunOff | 0.205 | 1.93 | \* |
| R4 | Stream | 2.69 | \* | RunOff | 0.185 | 1.35 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.5‑19: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 1.00 |  | Drainage | 0.234 | 1.20 |  |
| R2 | Stream | 1.49 |  | RunOff | 0.084 | 2.15 |  |
| R3 | Stream | 4.26 |  | RunOff | 0.397 | 2.77 |  |
| R4 | Stream | 5.13 |  | RunOff | 0.356 | 2.29 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.5‑20: FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 3.09 |  | Drainage | 0.724 | 3.26 |  |
| R2 | Stream | 0.878 |  | RunOff | 0.111 | 2.75 |  |
| R3 | Stream | 4.22 |  | RunOff | 0.412 | 3.30 |  |
| R4 | Stream | 4.52 |  | RunOff | 0.383 | 2.44 |  |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

### FOCUS Step 4 PECsw

FOCUS Step 4 calculations considering various mitigation measures for runoff and spray drift were conducted based on the Step 3 results. This section provides the summary of results in tabular form. Where applicable, the maximum of single and multiple application uses are shown.

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.5‑21: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* |  |  |
| 50 % | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* |  |  |
| 75 % | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* |  |  |
| 90 % | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* | *0.672* |  |  |
| None | R2 Stream | *0.905* | *0.905* | *0.905* | *0.905* | *0.412* | *0.216* |  |  |
| 50 % | *0.905* | *0.905* | *0.905* | *0.905* | *0.412* | *0.216* |  |  |
| 75 % | *0.905* | *0.905* | *0.905* | *0.905* | *0.412* | *0.216* |  |  |
| 90 % | *0.905* | *0.905* | *0.905* | *0.905* | *0.412* | *0.216* |  |  |
| None | R3 Stream | *1.96* | *1.96* | *1.96* | *1.96* | *0.896* | *0.470* |  |  |
| 50 % | *1.96* | *1.96* | *1.96* | *1.96* | *0.896* | *0.470* |  |  |
| 75 % | *1.96* | *1.96* | *1.96* | *1.96* | *0.896* | *0.470* |  |  |
| 90 % | *1.96* | *1.96* | *1.96* | *1.96* | *0.896* | *0.470* |  |  |
| None | R4 Stream | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.797* |  |  |
| 50 % | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.797* |  |  |
| 75 % | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.797* |  |  |
| 90 % | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.797* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.5‑22: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* |  |  |
| 50 % | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* |  |  |
| 75 % | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* |  |  |
| 90 % | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* | *2.00* |  |  |
| None | R2 Stream | 0.562 | *0.464* | *0.464* | *0.464* | *0.211* | *0.110* |  |  |
| 50 % | *0.464* | *0.464* | *0.464* | *0.464* | *0.211* | *0.110* |  |  |
| 75 % | *0.464* | *0.464* | *0.464* | *0.464* | *0.211* | *0.110* |  |  |
| 90 % | *0.464* | *0.464* | *0.464* | *0.464* | *0.211* | *0.110* |  |  |
| None | R3 Stream | *2.15* | *2.15* | *2.15* | *2.15* | *0.979* | *0.514* |  |  |
| 50 % | *2.15* | *2.15* | *2.15* | *2.15* | *0.979* | *0.514* |  |  |
| 75 % | *2.15* | *2.15* | *2.15* | *2.15* | *0.979* | *0.514* |  |  |
| 90 % | *2.15* | *2.15* | *2.15* | *2.15* | *0.979* | *0.514* |  |  |
| None | R4 Stream | *2.39* | *2.39* | *2.39* | *2.39* | *1.09* | *0.569* |  |  |
| 50 % | *2.39* | *2.39* | *2.39* | *2.39* | *1.09* | *0.569* |  |  |
| 75 % | *2.39* | *2.39* | *2.39* | *2.39* | *1.09* | *0.569* |  |  |
| 90 % | *2.39* | *2.39* | *2.39* | *2.39* | *1.09* | *0.569* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables II - BBCH 51 - 0.1 kg a.s./ha (DGR II / PMT III)

Table 1.5‑23: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables II, assessment name BBCH 51 (DGR II / PMT III)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.633 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| 50 % | 0.319 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| 75 % | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| 90 % | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| None | R2 Stream | 0.561 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| 50 % | 0.369 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| 75 % | 0.369 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| 90 % | 0.369 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| None | R3 Stream | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| 50 % | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| 75 % | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| 90 % | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| None | R4 Stream | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |
| 50 % | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |
| 75 % | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |
| 90 % | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |

##### Fruiting vegetables II - BBCH 89 - 0.1 kg a.s./ha (DGR II / PMT IV)

Table 1.5‑24: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables II, assessment name BBCH 89 (DGR II / PMT IV)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 |  |  |
| 50 % | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 |  |  |
| 75 % | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 |  |  |
| 90 % | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 |  |  |
| None | R2 Stream | 0.562 | 0.205 | 0.201 | 0.201 | 0.109 | 0.057 |  |  |
| 50 % | 0.281 | 0.201 | 0.201 | 0.201 | 0.091 | 0.048 |  |  |
| 75 % | 0.201 | 0.201 | 0.201 | 0.201 | 0.091 | 0.048 |  |  |
| 90 % | 0.201 | 0.201 | 0.201 | 0.201 | 0.091 | 0.048 |  |  |
| None | R3 Stream | 1.28 | 1.28 | 1.28 | 1.28 | 0.584 | 0.306 |  |  |
| 50 % | 1.28 | 1.28 | 1.28 | 1.28 | 0.584 | 0.306 |  |  |
| 75 % | 1.28 | 1.28 | 1.28 | 1.28 | 0.584 | 0.306 |  |  |
| 90 % | 1.28 | 1.28 | 1.28 | 1.28 | 0.584 | 0.306 |  |  |
| None | R4 Stream | 1.71 | 1.71 | 1.71 | 1.71 | 0.779 | 0.408 |  |  |
| 50 % | 1.71 | 1.71 | 1.71 | 1.71 | 0.779 | 0.408 |  |  |
| 75 % | 1.71 | 1.71 | 1.71 | 1.71 | 0.779 | 0.408 |  |  |
| 90 % | 1.71 | 1.71 | 1.71 | 1.71 | 0.779 | 0.408 |  |  |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.5‑25: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| 50 % | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| 75 % | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| 90 % | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| None | R2 Stream | *1.45* | *1.45* | *1.45* | *1.45* | *0.659* | *0.346* |  |  |
| 50 % | *1.45* | *1.45* | *1.45* | *1.45* | *0.659* | *0.346* |  |  |
| 75 % | *1.45* | *1.45* | *1.45* | *1.45* | *0.659* | *0.346* |  |  |
| 90 % | *1.45* | *1.45* | *1.45* | *1.45* | *0.659* | *0.346* |  |  |
| None | R3 Stream | *3.06* | *3.06* | *3.06* | *3.06* | *1.40* | *0.731* |  |  |
| 50 % | *3.06* | *3.06* | *3.06* | *3.06* | *1.40* | *0.731* |  |  |
| 75 % | *3.06* | *3.06* | *3.06* | *3.06* | *1.40* | *0.731* |  |  |
| 90 % | *3.06* | *3.06* | *3.06* | *3.06* | *1.40* | *0.731* |  |  |
| None | R4 Stream | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| 50 % | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| 75 % | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| 90 % | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.5‑26: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* |  |  |
| 50 % | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* |  |  |
| 75 % | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* |  |  |
| 90 % | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* | *2.94* |  |  |
| None | R2 Stream | 0.843 | *0.741* | *0.741* | *0.741* | *0.336* | *0.176* |  |  |
| 50 % | *0.741* | *0.741* | *0.741* | *0.741* | *0.336* | *0.176* |  |  |
| 75 % | *0.741* | *0.741* | *0.741* | *0.741* | *0.336* | *0.176* |  |  |
| 90 % | *0.741* | *0.741* | *0.741* | *0.741* | *0.336* | *0.176* |  |  |
| None | R3 Stream | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.799* |  |  |
| 50 % | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.799* |  |  |
| 75 % | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.799* |  |  |
| 90 % | *3.34* | *3.34* | *3.34* | *3.34* | *1.52* | *0.799* |  |  |
| None | R4 Stream | *3.65* | *3.65* | *3.65* | *3.65* | *1.66* | *0.871* |  |  |
| 50 % | *3.65* | *3.65* | *3.65* | *3.65* | *1.66* | *0.871* |  |  |
| 75 % | *3.65* | *3.65* | *3.65* | *3.65* | *1.66* | *0.871* |  |  |
| 90 % | *3.65* | *3.65* | *3.65* | *3.65* | *1.66* | *0.871* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables IV - BBCH 51 - 0.15 kg a.s./ha (DGR IV / PMT VII)

Table 1.5‑27: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables IV, assessment name BBCH 51 (DGR IV / PMT VII)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.950 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 50 % | 0.479 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 75 % | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 90 % | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| None | R2 Stream | 0.842 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 50 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 75 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 90 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| None | R3 Stream | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 50 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 75 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 90 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| None | R4 Stream | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 50 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 75 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 90 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |

##### Fruiting vegetables IV - BBCH 89 - 0.15 kg a.s./ha (DGR IV / PMT VIII)

Table 1.5‑28: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables IV, assessment name BBCH 89 (DGR IV / PMT VIII)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |  |  |
| 50 % | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |  |  |
| 75 % | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |  |  |
| 90 % | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 | 1.86 |  |  |
| None | R2 Stream | 0.843 | 0.320 | 0.320 | 0.320 | 0.163 | 0.085 |  |  |
| 50 % | 0.421 | 0.320 | 0.320 | 0.320 | 0.145 | 0.076 |  |  |
| 75 % | 0.320 | 0.320 | 0.320 | 0.320 | 0.145 | 0.076 |  |  |
| 90 % | 0.320 | 0.320 | 0.320 | 0.320 | 0.145 | 0.076 |  |  |
| None | R3 Stream | 2.04 | 2.04 | 2.04 | 2.04 | 0.928 | 0.487 |  |  |
| 50 % | 2.04 | 2.04 | 2.04 | 2.04 | 0.928 | 0.487 |  |  |
| 75 % | 2.04 | 2.04 | 2.04 | 2.04 | 0.928 | 0.487 |  |  |
| 90 % | 2.04 | 2.04 | 2.04 | 2.04 | 0.928 | 0.487 |  |  |
| None | R4 Stream | 2.69 | 2.69 | 2.69 | 2.69 | 1.22 | 0.641 |  |  |
| 50 % | 2.69 | 2.69 | 2.69 | 2.69 | 1.22 | 0.641 |  |  |
| 75 % | 2.69 | 2.69 | 2.69 | 2.69 | 1.22 | 0.641 |  |  |
| 90 % | 2.69 | 2.69 | 2.69 | 2.69 | 1.22 | 0.641 |  |  |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.5‑29: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| 50 % | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| 75 % | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| 90 % | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* | *1.00* |  |  |
| None | R2 Stream | *1.49* | *1.49* | *1.49* | *1.49* | *0.676* | *0.354* |  |  |
| 50 % | *1.49* | *1.49* | *1.49* | *1.49* | *0.676* | *0.354* |  |  |
| 75 % | *1.49* | *1.49* | *1.49* | *1.49* | *0.676* | *0.354* |  |  |
| 90 % | *1.49* | *1.49* | *1.49* | *1.49* | *0.676* | *0.354* |  |  |
| None | R3 Stream | *4.26* | *4.26* | *4.26* | *4.26* | *1.94* | *1.02* |  |  |
| 50 % | *4.26* | *4.26* | *4.26* | *4.26* | *1.94* | *1.02* |  |  |
| 75 % | *4.26* | *4.26* | *4.26* | *4.26* | *1.94* | *1.02* |  |  |
| 90 % | *4.26* | *4.26* | *4.26* | *4.26* | *1.94* | *1.02* |  |  |
| None | R4 Stream | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| 50 % | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| 75 % | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| 90 % | *5.13* | *5.13* | *5.13* | *5.13* | *2.33* | *1.22* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.5‑30: FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* |  |  |
| 50 % | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* |  |  |
| 75 % | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* |  |  |
| 90 % | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* | *3.09* |  |  |
| None | R2 Stream | *0.878* | *0.878* | *0.878* | *0.878* | *0.399* | *0.209* |  |  |
| 50 % | *0.878* | *0.878* | *0.878* | *0.878* | *0.399* | *0.209* |  |  |
| 75 % | *0.878* | *0.878* | *0.878* | *0.878* | *0.399* | *0.209* |  |  |
| 90 % | *0.878* | *0.878* | *0.878* | *0.878* | *0.399* | *0.209* |  |  |
| None | R3 Stream | *4.22* | *4.22* | *4.22* | *4.22* | *1.92* | *1.01* |  |  |
| 50 % | *4.22* | *4.22* | *4.22* | *4.22* | *1.92* | *1.01* |  |  |
| 75 % | *4.22* | *4.22* | *4.22* | *4.22* | *1.92* | *1.01* |  |  |
| 90 % | *4.22* | *4.22* | *4.22* | *4.22* | *1.92* | *1.01* |  |  |
| None | R4 Stream | *4.52* | *4.52* | *4.52* | *4.52* | *2.06* | *1.08* |  |  |
| 50 % | *4.52* | *4.52* | *4.52* | *4.52* | *2.06* | *1.08* |  |  |
| 75 % | *4.52* | *4.52* | *4.52* | *4.52* | *2.06* | *1.08* |  |  |
| 90 % | *4.52* | *4.52* | *4.52* | *4.52* | *2.06* | *1.08* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

### FOCUS Step 4 PECsed

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.5‑31: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *0.832* | *0.819* | *0.817* | *0.816* | *0.817* | *0.816* |  |  |
| 50 % | *0.823* | *0.817* | *0.816* | *0.815* | *0.816* | *0.815* |  |  |
| 75 % | *0.819* | *0.816* | *0.815* | *0.815* | *0.815* | *0.815* |  |  |
| 90 % | *0.816* | *0.815* | *0.815* | *0.815* | *0.815* | *0.815* |  |  |
| None | R2 Stream | *1.74* | *1.73* | *1.73* | *1.73* | *0.438* | *0.200* |  |  |
| 50 % | *1.73* | *1.73* | *1.73* | *1.73* | *0.437* | *0.199* |  |  |
| 75 % | *1.73* | *1.73* | *1.73* | *1.73* | *0.436* | *0.199* |  |  |
| 90 % | *1.73* | *1.73* | *1.73* | *1.72* | *0.435* | *0.198* |  |  |
| None | R3 Stream | *1.93* | *1.91* | *1.90* | *1.90* | *0.671* | *0.343* |  |  |
| 50 % | *1.91* | *1.90* | *1.90* | *1.90* | *0.668* | *0.341* |  |  |
| 75 % | *1.91* | *1.90* | *1.90* | *1.90* | *0.666* | *0.341* |  |  |
| 90 % | *1.90* | *1.90* | *1.90* | *1.90* | *0.665* | *0.340* |  |  |
| None | R4 Stream | *1.53* | *1.52* | *1.52* | *1.51* | *0.700* | *0.376* |  |  |
| 50 % | *1.52* | *1.52* | *1.51* | *1.51* | *0.698* | *0.375* |  |  |
| 75 % | *1.52* | *1.51* | *1.51* | *1.51* | *0.697* | *0.374* |  |  |
| 90 % | *1.51* | *1.51* | *1.51* | *1.51* | *0.696* | *0.374* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.5‑32: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *2.15* | *2.13* | *2.13* | *2.13* | *2.13* | *2.13* |  |  |
| 50 % | *2.14* | *2.13* | *2.13* | *2.13* | *2.13* | *2.13* |  |  |
| 75 % | *2.13* | *2.13* | *2.13* | *2.13* | *2.13* | *2.13* |  |  |
| 90 % | *2.13* | *2.13* | *2.13* | *2.13* | *2.13* | *2.13* |  |  |
| None | R2 Stream | *1.90* | *1.90* | *1.89* | *1.89* | *0.411* | *0.176* |  |  |
| 50 % | *1.90* | *1.89* | *1.89* | *1.89* | *0.410* | *0.175* |  |  |
| 75 % | *1.89* | *1.89* | *1.89* | *1.89* | *0.410* | *0.175* |  |  |
| 90 % | *1.89* | *1.89* | *1.89* | *1.89* | *0.410* | *0.175* |  |  |
| None | R3 Stream | *1.98* | *1.95* | *1.94* | *1.93* | *0.712* | *0.367* |  |  |
| 50 % | *1.95* | *1.94* | *1.93* | *1.93* | *0.707* | *0.364* |  |  |
| 75 % | *1.94* | *1.93* | *1.93* | *1.93* | *0.705* | *0.363* |  |  |
| 90 % | *1.93* | *1.93* | *1.93* | *1.93* | *0.703* | *0.362* |  |  |
| None | R4 Stream | *1.50* | *1.49* | *1.49* | *1.49* | *0.664* | *0.356* |  |  |
| 50 % | *1.49* | *1.49* | *1.49* | *1.48* | *0.662* | *0.355* |  |  |
| 75 % | *1.49* | *1.48* | *1.48* | *1.48* | *0.661* | *0.354* |  |  |
| 90 % | *1.49* | *1.48* | *1.48* | *1.48* | *0.660* | *0.354* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables II - BBCH 51 - 0.1 kg a.s./ha (DGR II / PMT III)

Table 1.5‑33: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables II, assessment name BBCH 51 (DGR II / PMT III)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.402 | 0.393 | 0.392 | 0.391 | 0.392 | 0.391 |  |  |
| 50 % | 0.396 | 0.392 | 0.391 | 0.390 | 0.391 | 0.390 |  |  |
| 75 % | 0.393 | 0.391 | 0.390 | 0.390 | 0.390 | 0.390 |  |  |
| 90 % | 0.391 | 0.390 | 0.390 | 0.390 | 0.390 | 0.390 |  |  |
| None | R2 Stream | 0.710 | 0.705 | 0.704 | 0.703 | 0.181 | 0.083 |  |  |
| 50 % | 0.706 | 0.704 | 0.703 | 0.703 | 0.181 | 0.083 |  |  |
| 75 % | 0.704 | 0.703 | 0.703 | 0.703 | 0.180 | 0.083 |  |  |
| 90 % | 0.703 | 0.703 | 0.703 | 0.702 | 0.180 | 0.082 |  |  |
| None | R3 Stream | 0.833 | 0.813 | 0.807 | 0.803 | 0.306 | 0.158 |  |  |
| 50 % | 0.817 | 0.806 | 0.803 | 0.801 | 0.302 | 0.156 |  |  |
| 75 % | 0.809 | 0.803 | 0.801 | 0.800 | 0.300 | 0.155 |  |  |
| 90 % | 0.803 | 0.801 | 0.800 | 0.800 | 0.299 | 0.154 |  |  |
| None | R4 Stream | 0.620 | 0.617 | 0.615 | 0.615 | 0.286 | 0.153 |  |  |
| 50 % | 0.617 | 0.615 | 0.615 | 0.614 | 0.285 | 0.153 |  |  |
| 75 % | 0.616 | 0.615 | 0.614 | 0.614 | 0.285 | 0.153 |  |  |
| 90 % | 0.615 | 0.614 | 0.614 | 0.614 | 0.284 | 0.152 |  |  |

##### Fruiting vegetables II - BBCH 89 - 0.1 kg a.s./ha (DGR II / PMT IV)

Table 1.5‑34: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables II, assessment name BBCH 89 (DGR II / PMT IV)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.27 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| 50 % | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| 75 % | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| 90 % | 1.26 | 1.26 | 1.26 | 1.25 | 1.26 | 1.25 |  |  |
| None | R2 Stream | 1.17 | 1.16 | 1.16 | 1.16 | 0.239 | 0.099 |  |  |
| 50 % | 1.16 | 1.16 | 1.16 | 1.16 | 0.239 | 0.099 |  |  |
| 75 % | 1.16 | 1.16 | 1.16 | 1.16 | 0.238 | 0.099 |  |  |
| 90 % | 1.16 | 1.16 | 1.16 | 1.16 | 0.238 | 0.099 |  |  |
| None | R3 Stream | 1.32 | 1.30 | 1.30 | 1.30 | 0.440 | 0.222 |  |  |
| 50 % | 1.31 | 1.30 | 1.30 | 1.29 | 0.438 | 0.221 |  |  |
| 75 % | 1.30 | 1.30 | 1.29 | 1.29 | 0.436 | 0.220 |  |  |
| 90 % | 1.30 | 1.29 | 1.29 | 1.29 | 0.435 | 0.219 |  |  |
| None | R4 Stream | 0.910 | 0.903 | 0.901 | 0.900 | 0.404 | 0.217 |  |  |
| 50 % | 0.905 | 0.901 | 0.900 | 0.900 | 0.403 | 0.217 |  |  |
| 75 % | 0.902 | 0.900 | 0.900 | 0.900 | 0.403 | 0.216 |  |  |
| 90 % | 0.900 | 0.900 | 0.899 | 0.899 | 0.402 | 0.216 |  |  |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.5‑35: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *1.21* | *1.19* | *1.18* | *1.18* | *1.18* | *1.18* |  |  |
| 50 % | *1.19* | *1.18* | *1.18* | *1.18* | *1.18* | *1.18* |  |  |
| 75 % | *1.19* | *1.18* | *1.18* | *1.18* | *1.18* | *1.18* |  |  |
| 90 % | *1.18* | *1.18* | *1.18* | *1.18* | *1.18* | *1.18* |  |  |
| None | R2 Stream | *2.53* | *2.52* | *2.51* | *2.51* | *0.657* | *0.304* |  |  |
| 50 % | *2.52* | *2.51* | *2.51* | *2.51* | *0.655* | *0.302* |  |  |
| 75 % | *2.52* | *2.51* | *2.51* | *2.51* | *0.654* | *0.301* |  |  |
| 90 % | *2.51* | *2.51* | *2.51* | *2.51* | *0.653* | *0.301* |  |  |
| None | R3 Stream | *2.79* | *2.76* | *2.75* | *2.75* | *0.990* | *0.509* |  |  |
| 50 % | *2.77* | *2.75* | *2.75* | *2.75* | *0.984* | *0.506* |  |  |
| 75 % | *2.76* | *2.75* | *2.75* | *2.74* | *0.981* | *0.504* |  |  |
| 90 % | *2.75* | *2.75* | *2.74* | *2.74* | *0.980* | *0.504* |  |  |
| None | R4 Stream | *2.29* | *2.27* | *2.27* | *2.27* | *1.05* | *0.565* |  |  |
| 50 % | *2.28* | *2.27* | *2.27* | *2.26* | *1.05* | *0.564* |  |  |
| 75 % | *2.27* | *2.27* | *2.26* | *2.26* | *1.05* | *0.563* |  |  |
| 90 % | *2.27* | *2.26* | *2.26* | *2.26* | *1.05* | *0.562* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.5‑36: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *3.10* | *3.07* | *3.07* | *3.07* | *3.07* | *3.07* |  |  |
| 50 % | *3.08* | *3.07* | *3.07* | *3.07* | *3.07* | *3.07* |  |  |
| 75 % | *3.07* | *3.07* | *3.07* | *3.07* | *3.07* | *3.07* |  |  |
| 90 % | *3.07* | *3.07* | *3.07* | *3.07* | *3.07* | *3.07* |  |  |
| None | R2 Stream | *2.49* | *2.48* | *2.48* | *2.48* | *0.556* | *0.246* |  |  |
| 50 % | *2.48* | *2.48* | *2.48* | *2.48* | *0.555* | *0.245* |  |  |
| 75 % | *2.48* | *2.48* | *2.48* | *2.48* | *0.555* | *0.245* |  |  |
| 90 % | *2.48* | *2.48* | *2.48* | *2.48* | *0.555* | *0.244* |  |  |
| None | R3 Stream | *2.91* | *2.86* | *2.85* | *2.84* | *1.07* | *0.552* |  |  |
| 50 % | *2.87* | *2.85* | *2.84* | *2.84* | *1.06* | *0.549* |  |  |
| 75 % | *2.85* | *2.84* | *2.84* | *2.84* | *1.06* | *0.547* |  |  |
| 90 % | *2.84* | *2.84* | *2.84* | *2.84* | *1.05* | *0.546* |  |  |
| None | R4 Stream | *2.23* | *2.21* | *2.21* | *2.21* | *0.991* | *0.532* |  |  |
| 50 % | *2.22* | *2.21* | *2.21* | *2.20* | *0.988* | *0.531* |  |  |
| 75 % | *2.21* | *2.20* | *2.20* | *2.20* | *0.987* | *0.530* |  |  |
| 90 % | *2.21* | *2.20* | *2.20* | *2.20* | *0.986* | *0.530* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables IV - BBCH 51 - 0.15 kg a.s./ha (DGR IV / PMT VII)

Table 1.5‑37: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables IV, assessment name BBCH 51 (DGR IV / PMT VII)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.588 | 0.575 | 0.573 | 0.572 | 0.573 | 0.572 |  |  |
| 50 % | 0.579 | 0.573 | 0.572 | 0.571 | 0.572 | 0.571 |  |  |
| 75 % | 0.575 | 0.572 | 0.571 | 0.571 | 0.571 | 0.571 |  |  |
| 90 % | 0.572 | 0.571 | 0.571 | 0.571 | 0.571 | 0.571 |  |  |
| None | R2 Stream | 1.02 | 1.02 | 1.02 | 1.01 | 0.271 | 0.126 |  |  |
| 50 % | 1.02 | 1.02 | 1.01 | 1.01 | 0.270 | 0.125 |  |  |
| 75 % | 1.02 | 1.01 | 1.01 | 1.01 | 0.269 | 0.125 |  |  |
| 90 % | 1.01 | 1.01 | 1.01 | 1.01 | 0.269 | 0.125 |  |  |
| None | R3 Stream | 1.25 | 1.22 | 1.21 | 1.21 | 0.468 | 0.242 |  |  |
| 50 % | 1.23 | 1.21 | 1.21 | 1.20 | 0.462 | 0.240 |  |  |
| 75 % | 1.21 | 1.21 | 1.20 | 1.20 | 0.460 | 0.238 |  |  |
| 90 % | 1.21 | 1.20 | 1.20 | 1.20 | 0.458 | 0.237 |  |  |
| None | R4 Stream | 0.922 | 0.917 | 0.915 | 0.914 | 0.426 | 0.229 |  |  |
| 50 % | 0.918 | 0.915 | 0.914 | 0.914 | 0.425 | 0.228 |  |  |
| 75 % | 0.916 | 0.914 | 0.914 | 0.913 | 0.425 | 0.228 |  |  |
| 90 % | 0.914 | 0.913 | 0.913 | 0.913 | 0.424 | 0.228 |  |  |

##### Fruiting vegetables IV - BBCH 89 - 0.15 kg a.s./ha (DGR IV / PMT VIII)

Table 1.5‑38: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables IV, assessment name BBCH 89 (DGR IV / PMT VIII)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.90 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |  |  |
| 50 % | 1.90 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |  |  |
| 75 % | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |  |  |
| 90 % | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 | 1.89 |  |  |
| None | R2 Stream | 1.53 | 1.53 | 1.53 | 1.53 | 0.323 | 0.136 |  |  |
| 50 % | 1.53 | 1.53 | 1.53 | 1.53 | 0.322 | 0.136 |  |  |
| 75 % | 1.53 | 1.53 | 1.53 | 1.53 | 0.322 | 0.136 |  |  |
| 90 % | 1.53 | 1.53 | 1.53 | 1.53 | 0.322 | 0.136 |  |  |
| None | R3 Stream | 1.93 | 1.90 | 1.90 | 1.89 | 0.658 | 0.334 |  |  |
| 50 % | 1.91 | 1.90 | 1.89 | 1.89 | 0.654 | 0.332 |  |  |
| 75 % | 1.90 | 1.89 | 1.89 | 1.89 | 0.652 | 0.331 |  |  |
| 90 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.651 | 0.330 |  |  |
| None | R4 Stream | 1.35 | 1.34 | 1.34 | 1.34 | 0.603 | 0.325 |  |  |
| 50 % | 1.34 | 1.34 | 1.34 | 1.34 | 0.602 | 0.324 |  |  |
| 75 % | 1.34 | 1.34 | 1.34 | 1.34 | 0.601 | 0.323 |  |  |
| 90 % | 1.34 | 1.34 | 1.34 | 1.34 | 0.600 | 0.323 |  |  |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.5‑39: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *1.20* | *1.18* | *1.17* | *1.17* | *1.17* | *1.17* |  |  |
| 50 % | *1.18* | *1.17* | *1.17* | *1.17* | *1.17* | *1.17* |  |  |
| 75 % | *1.18* | *1.17* | *1.17* | *1.17* | *1.17* | *1.17* |  |  |
| 90 % | *1.17* | *1.17* | *1.17* | *1.17* | *1.17* | *1.17* |  |  |
| None | R2 Stream | *2.15* | *2.13* | *2.13* | *2.13* | *0.605* | *0.288* |  |  |
| 50 % | *2.14* | *2.13* | *2.13* | *2.13* | *0.603* | *0.287* |  |  |
| 75 % | *2.13* | *2.13* | *2.13* | *2.13* | *0.602* | *0.286* |  |  |
| 90 % | *2.13* | *2.13* | *2.13* | *2.13* | *0.602* | *0.286* |  |  |
| None | R3 Stream | *2.77* | *2.71* | *2.69* | *2.68* | *1.07* | *0.557* |  |  |
| 50 % | *2.73* | *2.69* | *2.68* | *2.68* | *1.06* | *0.552* |  |  |
| 75 % | *2.70* | *2.68* | *2.68* | *2.68* | *1.05* | *0.549* |  |  |
| 90 % | *2.68* | *2.68* | *2.67* | *2.67* | *1.05* | *0.547* |  |  |
| None | R4 Stream | *2.29* | *2.27* | *2.27* | *2.27* | *1.05* | *0.565* |  |  |
| 50 % | *2.28* | *2.27* | *2.27* | *2.26* | *1.05* | *0.564* |  |  |
| 75 % | *2.27* | *2.27* | *2.26* | *2.26* | *1.05* | *0.563* |  |  |
| 90 % | *2.27* | *2.26* | *2.26* | *2.26* | *1.05* | *0.562* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.5‑40: FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | *3.26* | *3.24* | *3.24* | *3.24* | *3.24* | *3.24* |  |  |
| 50 % | *3.25* | *3.24* | *3.24* | *3.24* | *3.24* | *3.24* |  |  |
| 75 % | *3.24* | *3.24* | *3.24* | *3.24* | *3.24* | *3.24* |  |  |
| 90 % | *3.24* | *3.24* | *3.24* | *3.23* | *3.24* | *3.23* |  |  |
| None | R2 Stream | *2.75* | *2.74* | *2.74* | *2.74* | *0.632* | *0.282* |  |  |
| 50 % | *2.75* | *2.74* | *2.74* | *2.74* | *0.631* | *0.281* |  |  |
| 75 % | *2.74* | *2.74* | *2.74* | *2.74* | *0.631* | *0.281* |  |  |
| 90 % | *2.74* | *2.74* | *2.74* | *2.74* | *0.631* | *0.281* |  |  |
| None | R3 Stream | *3.30* | *3.24* | *3.23* | *3.22* | *1.20* | *0.619* |  |  |
| 50 % | *3.25* | *3.23* | *3.22* | *3.21* | *1.19* | *0.615* |  |  |
| 75 % | *3.23* | *3.22* | *3.21* | *3.21* | *1.19* | *0.612* |  |  |
| 90 % | *3.22* | *3.21* | *3.21* | *3.21* | *1.18* | *0.611* |  |  |
| None | R4 Stream | *2.44* | *2.42* | *2.41* | *2.41* | *1.09* | *0.586* |  |  |
| 50 % | *2.42* | *2.41* | *2.41* | *2.41* | *1.09* | *0.584* |  |  |
| 75 % | *2.41* | *2.41* | *2.41* | *2.40* | *1.09* | *0.584* |  |  |
| 90 % | *2.41* | *2.41* | *2.40* | *2.40* | *1.09* | *0.583* |  |  |
| \* Maximum values coming from multiple applications are marked in italics | | | | | | | | | |

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Substance data:

|  |
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## Additional results

### FOCUS Steps 1-2 (single application)

Results of Steps 1-2 calculations considering single application only are presented in this section.

#### Parent substance fluopyram

##### Fruiting vegetables I - spring - 2 × 100g a.s./ha, 10d int. (DGR I / PMT I)

Table 1.7‑1: Single application FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name spring (DGR I / PMT I)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 50.7 |  | RunOff | 49.9 | 137 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 2.17 | \* | Drainage | 2.09 | 5.75 | \* |
| Southern Europe | Mar. - May (Spring) | 3.61 | \* | Drainage | 3.52 | 9.66 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables I - summer - 2 × 100g a.s./ha, 10d int. (DGR I / PMT II)

Table 1.7‑2: Single application FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name summer (DGR I / PMT II)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 50.7 |  | RunOff | 49.9 | 137 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 2.17 | \* | Drainage | 2.09 | 5.75 | \* |
| Southern Europe | Jun. - Sep. (Summer) | 2.89 | \* | Drainage | 2.80 | 7.70 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - spring - 2 × 150g a.s./ha, 10d int. (DGR III / PMT V)

Table 1.7‑3: Single application FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name spring (DGR III / PMT V)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 3.26 | \* | Drainage | 3.14 | 8.62 | \* |
| Southern Europe | Mar. - May (Spring) | 5.41 | \* | Drainage | 5.27 | 14.5 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - summer - 2 × 150g a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.7‑4: Single application FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name summer (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 3.26 | \* | Drainage | 3.14 | 8.62 | \* |
| Southern Europe | Jun. - Sep. (Summer) | 4.33 | \* | Drainage | 4.21 | 11.6 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - spring - 2 × 150g a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.7‑5: Single application FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name spring (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Mar. - May (Spring) | 3.26 | \* | Drainage | 3.14 | 8.62 | \* |
| Southern Europe | Mar. - May (Spring) | 5.41 | \* | Drainage | 5.27 | 14.5 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - summer - 2 × 150g a.s./ha, 7d int. (DGR V / PMT X)

Table 1.7‑6: Single application FOCUS Steps 1-2 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name summer (DGR V / PMT X)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 1 | - | 76.1 |  | RunOff | 74.8 | 206 |  |
| Step 2 |  |  |  |  |  |  |  |
| Northern Europe | Jun. - Sep. (Summer) | 3.26 | \* | Drainage | 3.14 | 8.62 | \* |
| Southern Europe | Jun. - Sep. (Summer) | 4.33 | \* | Drainage | 4.21 | 11.6 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

### FOCUS Step 3 (single application)

Results of Step 3 calculations considering single application only are presented in this section.

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.7‑7: Single application FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.633 | \* | Spray drift | 0.069 | 0.402 | \* |
| R2 | Stream | 0.561 | \* | Spray drift | 0.022 | 0.710 | \* |
| R3 | Stream | 1.10 | \* | RunOff | 0.103 | 0.833 | \* |
| R4 | Stream | 1.32 | \* | RunOff | 0.094 | 0.620 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.7‑8: Single application FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.735 | \* | Drainage | 0.169 | 0.879 | \* |
| R2 | Stream | 0.562 | \* | Spray drift | 0.027 | 1.17 | \* |
| R3 | Stream | 1.19 | \* | RunOff | 0.137 | 1.06 | \* |
| R4 | Stream | 1.82 | \* | RunOff | 0.138 | 0.909 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.7‑9: Single application FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.950 | \* | Spray drift | 0.105 | 0.588 | \* |
| R2 | Stream | 0.842 | \* | Spray drift | 0.034 | 1.02 | \* |
| R3 | Stream | 1.75 | \* | RunOff | 0.159 | 1.25 | \* |
| R4 | Stream | 2.00 | \* | RunOff | 0.139 | 0.922 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.7‑10: Single application FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 1.08 | \* | Drainage | 0.256 | 1.28 | \* |
| R2 | Stream | 0.843 | \* | Spray drift | 0.042 | 1.53 | \* |
| R3 | Stream | 1.89 | \* | RunOff | 0.213 | 1.56 | \* |
| R4 | Stream | 2.86 | \* | RunOff | 0.211 | 1.38 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.7‑11: Single application FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 0.950 | \* | Spray drift | 0.105 | 0.588 | \* |
| R2 | Stream | 0.842 | \* | Spray drift | 0.034 | 1.02 | \* |
| R3 | Stream | 1.75 | \* | RunOff | 0.159 | 1.25 | \* |
| R4 | Stream | 2.00 | \* | RunOff | 0.139 | 0.922 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.7‑12: Single application FOCUS Step 3 PECsw and PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Scenario  FOCUS | Waterbody | Max PECsw (μg/L)\* | | Dominant entry route | 21d-PECsw,twa (µg/L)\*\* | Max PECsed (μg/kg)\* | |
| Step 3 |  |  |  |  |  |  |  |
| D6 | Ditch | 1.28 | \* | Drainage | 0.297 | 1.47 | \* |
| R2 | Stream | 0.843 | \* | Spray drift | 0.042 | 1.53 | \* |
| R3 | Stream | 1.89 | \* | RunOff | 0.213 | 1.56 | \* |
| R4 | Stream | 2.83 | \* | RunOff | 0.187 | 1.36 | \* |
| \* Single applications are marked.  \*\* TWA interval as required by ecotox | | | | | | | |

### FOCUS Step 3 PECsw (single – multiple comparison)

This section contains side-by-side comparison of Step 3 results for single and multiple applications for relevant calculated uses.

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.7‑13: FOCUS Step 3 PECsw for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsw (µg/L) | Multiple PECsw (µg/L) |
| D6 | Ditch | 0.633 | 0.672 |
| R2 | Stream | 0.561 | 0.905 |
| R3 | Stream | 1.10 | 1.96 |
| R4 | Stream | 1.32 | 3.34 |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.7‑14: FOCUS Step 3 PECsw for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsw (µg/L) | Multiple PECsw (µg/L) |
| D6 | Ditch | 0.735 | 2.00 |
| R2 | Stream | 0.562 | 0.486 |
| R3 | Stream | 1.19 | 2.15 |
| R4 | Stream | 1.82 | 2.39 |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.7‑15: FOCUS Step 3 PECsw for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsw (µg/L) | Multiple PECsw (µg/L) |
| D6 | Ditch | 0.950 | 1.00 |
| R2 | Stream | 0.842 | 1.45 |
| R3 | Stream | 1.75 | 3.06 |
| R4 | Stream | 2.00 | 5.13 |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.7‑16: FOCUS Step 3 PECsw for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsw (µg/L) | Multiple PECsw (µg/L) |
| D6 | Ditch | 1.08 | 2.94 |
| R2 | Stream | 0.843 | 0.741 |
| R3 | Stream | 1.89 | 3.34 |
| R4 | Stream | 2.86 | 3.65 |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.7‑17: FOCUS Step 3 PECsw for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsw (µg/L) | Multiple PECsw (µg/L) |
| D6 | Ditch | 0.950 | 1.00 |
| R2 | Stream | 0.842 | 1.49 |
| R3 | Stream | 1.75 | 4.26 |
| R4 | Stream | 2.00 | 5.13 |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.7‑18: FOCUS Step 3 PECsw for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsw (µg/L) | Multiple PECsw (µg/L) |
| D6 | Ditch | 1.28 | 3.09 |
| R2 | Stream | 0.843 | 0.878 |
| R3 | Stream | 1.89 | 4.22 |
| R4 | Stream | 2.83 | 4.52 |

### FOCUS Step 3 PECsed (single – multiple comparison)

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.7‑19: FOCUS Step 3 PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsed (µg/kg) | Multiple PECsed (µg/kg) |
| D6 | Ditch | 0.402 | 0.832 |
| R2 | Stream | 0.710 | 1.74 |
| R3 | Stream | 0.833 | 1.93 |
| R4 | Stream | 0.620 | 1.53 |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.7‑20: FOCUS Step 3 PECsed for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsed (µg/kg) | Multiple PECsed (µg/kg) |
| D6 | Ditch | 0.879 | 2.15 |
| R2 | Stream | 1.17 | 1.90 |
| R3 | Stream | 1.06 | 1.98 |
| R4 | Stream | 0.909 | 1.50 |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.7‑21: FOCUS Step 3 PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsed (µg/kg) | Multiple PECsed (µg/kg) |
| D6 | Ditch | 0.588 | 1.21 |
| R2 | Stream | 1.02 | 2.53 |
| R3 | Stream | 1.25 | 2.79 |
| R4 | Stream | 0.922 | 2.29 |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.7‑22: FOCUS Step 3 PECsed for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsed (µg/kg) | Multiple PECsed (µg/kg) |
| D6 | Ditch | 1.28 | 3.10 |
| R2 | Stream | 1.53 | 2.49 |
| R3 | Stream | 1.56 | 2.91 |
| R4 | Stream | 1.38 | 2.23 |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.7‑23: FOCUS Step 3 PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsed (µg/kg) | Multiple PECsed (µg/kg) |
| D6 | Ditch | 0.588 | 1.20 |
| R2 | Stream | 1.02 | 2.15 |
| R3 | Stream | 1.25 | 2.77 |
| R4 | Stream | 0.922 | 2.29 |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.7‑24: FOCUS Step 3 PECsed for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |
| --- | --- | --- | --- |
| Scenario | Waterbody | Single PECsed (µg/kg) | Multiple PECsed (µg/kg) |
| D6 | Ditch | 1.47 | 3.26 |
| R2 | Stream | 1.53 | 2.75 |
| R3 | Stream | 1.56 | 3.30 |
| R4 | Stream | 1.36 | 2.44 |

### FOCUS Step4 PECsw (single application)

PECsw results of Step 4 calculations considering single application only are presented in this section.

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.7‑25: Single application FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.633 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| 50 % | 0.319 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| 75 % | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| 90 % | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 | 0.310 |  |  |
| None | R2 Stream | 0.561 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| 50 % | 0.369 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| 75 % | 0.369 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| 90 % | 0.369 | 0.369 | 0.369 | 0.369 | 0.168 | 0.088 |  |  |
| None | R3 Stream | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| 50 % | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| 75 % | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| 90 % | 1.10 | 1.10 | 1.10 | 1.10 | 0.502 | 0.263 |  |  |
| None | R4 Stream | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |
| 50 % | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |
| 75 % | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |
| 90 % | 1.32 | 1.32 | 1.32 | 1.32 | 0.598 | 0.314 |  |  |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.7‑26: Single application FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 |  |  |
| 50 % | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 |  |  |
| 75 % | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 |  |  |
| 90 % | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 | 0.735 |  |  |
| None | R2 Stream | 0.562 | 0.205 | 0.200 | 0.200 | 0.109 | 0.057 |  |  |
| 50 % | 0.281 | 0.200 | 0.200 | 0.200 | 0.091 | 0.047 |  |  |
| 75 % | 0.200 | 0.200 | 0.200 | 0.200 | 0.091 | 0.047 |  |  |
| 90 % | 0.200 | 0.200 | 0.200 | 0.200 | 0.091 | 0.047 |  |  |
| None | R3 Stream | 1.19 | 1.19 | 1.19 | 1.19 | 0.542 | 0.284 |  |  |
| 50 % | 1.19 | 1.19 | 1.19 | 1.19 | 0.542 | 0.284 |  |  |
| 75 % | 1.19 | 1.19 | 1.19 | 1.19 | 0.542 | 0.284 |  |  |
| 90 % | 1.19 | 1.19 | 1.19 | 1.19 | 0.542 | 0.284 |  |  |
| None | R4 Stream | 1.82 | 1.82 | 1.82 | 1.82 | 0.829 | 0.435 |  |  |
| 50 % | 1.82 | 1.82 | 1.82 | 1.82 | 0.829 | 0.435 |  |  |
| 75 % | 1.82 | 1.82 | 1.82 | 1.82 | 0.829 | 0.435 |  |  |
| 90 % | 1.82 | 1.82 | 1.82 | 1.82 | 0.829 | 0.435 |  |  |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.7‑27: Single application FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.950 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 50 % | 0.479 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 75 % | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 90 % | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| None | R2 Stream | 0.842 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 50 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 75 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 90 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| None | R3 Stream | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 50 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 75 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 90 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| None | R4 Stream | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 50 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 75 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 90 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.7‑28: Single application FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |  |  |
| 50 % | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |  |  |
| 75 % | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |  |  |
| 90 % | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 | 1.08 |  |  |
| None | R2 Stream | 0.843 | 0.319 | 0.319 | 0.319 | 0.163 | 0.085 |  |  |
| 50 % | 0.421 | 0.319 | 0.319 | 0.319 | 0.145 | 0.076 |  |  |
| 75 % | 0.319 | 0.319 | 0.319 | 0.319 | 0.145 | 0.076 |  |  |
| 90 % | 0.319 | 0.319 | 0.319 | 0.319 | 0.145 | 0.076 |  |  |
| None | R3 Stream | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| 50 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| 75 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| 90 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| None | R4 Stream | 2.86 | 2.86 | 2.86 | 2.86 | 1.30 | 0.682 |  |  |
| 50 % | 2.86 | 2.86 | 2.86 | 2.86 | 1.30 | 0.682 |  |  |
| 75 % | 2.86 | 2.86 | 2.86 | 2.86 | 1.30 | 0.682 |  |  |
| 90 % | 2.86 | 2.86 | 2.86 | 2.86 | 1.30 | 0.682 |  |  |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.7‑29: Single application FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.950 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 50 % | 0.479 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 75 % | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| 90 % | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 | 0.461 |  |  |
| None | R2 Stream | 0.842 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 50 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 75 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| 90 % | 0.589 | 0.589 | 0.589 | 0.589 | 0.268 | 0.141 |  |  |
| None | R3 Stream | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 50 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 75 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| 90 % | 1.75 | 1.75 | 1.75 | 1.75 | 0.797 | 0.418 |  |  |
| None | R4 Stream | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 50 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 75 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |
| 90 % | 2.00 | 2.00 | 2.00 | 2.00 | 0.910 | 0.477 |  |  |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.7‑30: Single application FOCUS Step 4 PECsw results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsw  (µg/L) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |  |  |
| 50 % | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |  |  |
| 75 % | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |  |  |
| 90 % | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 |  |  |
| None | R2 Stream | 0.843 | 0.319 | 0.319 | 0.319 | 0.163 | 0.085 |  |  |
| 50 % | 0.421 | 0.319 | 0.319 | 0.319 | 0.145 | 0.076 |  |  |
| 75 % | 0.319 | 0.319 | 0.319 | 0.319 | 0.145 | 0.076 |  |  |
| 90 % | 0.319 | 0.319 | 0.319 | 0.319 | 0.145 | 0.076 |  |  |
| None | R3 Stream | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| 50 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| 75 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| 90 % | 1.89 | 1.89 | 1.89 | 1.89 | 0.862 | 0.452 |  |  |
| None | R4 Stream | 2.83 | 2.83 | 2.83 | 2.83 | 1.29 | 0.674 |  |  |
| 50 % | 2.83 | 2.83 | 2.83 | 2.83 | 1.29 | 0.674 |  |  |
| 75 % | 2.83 | 2.83 | 2.83 | 2.83 | 1.29 | 0.674 |  |  |
| 90 % | 2.83 | 2.83 | 2.83 | 2.83 | 1.29 | 0.674 |  |  |

### FOCUS Step4 PECsed (single application)

PECsed results of Step 4 calculations considering single application only are presented in this section.

#### Parent substance fluopyram

##### Fruiting vegetables I - BBCH 51 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT I)

Table 1.7‑31: Single application FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 51 (DGR I / PMT I)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.402 | 0.393 | 0.392 | 0.391 | 0.392 | 0.391 |  |  |
| 50 % | 0.396 | 0.392 | 0.391 | 0.390 | 0.391 | 0.390 |  |  |
| 75 % | 0.393 | 0.391 | 0.390 | 0.390 | 0.390 | 0.390 |  |  |
| 90 % | 0.391 | 0.390 | 0.390 | 0.390 | 0.390 | 0.390 |  |  |
| None | R2 Stream | 0.710 | 0.705 | 0.704 | 0.703 | 0.181 | 0.083 |  |  |
| 50 % | 0.706 | 0.704 | 0.703 | 0.703 | 0.181 | 0.083 |  |  |
| 75 % | 0.704 | 0.703 | 0.703 | 0.703 | 0.180 | 0.083 |  |  |
| 90 % | 0.703 | 0.703 | 0.703 | 0.702 | 0.180 | 0.082 |  |  |
| None | R3 Stream | 0.833 | 0.813 | 0.807 | 0.803 | 0.306 | 0.158 |  |  |
| 50 % | 0.817 | 0.806 | 0.803 | 0.801 | 0.302 | 0.156 |  |  |
| 75 % | 0.809 | 0.803 | 0.801 | 0.800 | 0.300 | 0.155 |  |  |
| 90 % | 0.803 | 0.801 | 0.800 | 0.800 | 0.299 | 0.154 |  |  |
| None | R4 Stream | 0.620 | 0.617 | 0.615 | 0.615 | 0.286 | 0.153 |  |  |
| 50 % | 0.617 | 0.615 | 0.615 | 0.614 | 0.285 | 0.153 |  |  |
| 75 % | 0.616 | 0.615 | 0.614 | 0.614 | 0.285 | 0.153 |  |  |
| 90 % | 0.615 | 0.614 | 0.614 | 0.614 | 0.284 | 0.152 |  |  |

##### Fruiting vegetables I - BBCH 89 - 2 × 0.1 kg a.s./ha, 10d int. (DGR I / PMT II)

Table 1.7‑32: Single application FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables I, assessment name BBCH 89 (DGR I / PMT II)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.879 | 0.869 | 0.867 | 0.866 | 0.867 | 0.866 |  |  |
| 50 % | 0.872 | 0.867 | 0.866 | 0.865 | 0.866 | 0.865 |  |  |
| 75 % | 0.868 | 0.866 | 0.865 | 0.865 | 0.865 | 0.865 |  |  |
| 90 % | 0.866 | 0.865 | 0.865 | 0.865 | 0.865 | 0.865 |  |  |
| None | R2 Stream | 1.17 | 1.16 | 1.16 | 1.16 | 0.239 | 0.099 |  |  |
| 50 % | 1.16 | 1.16 | 1.16 | 1.16 | 0.238 | 0.099 |  |  |
| 75 % | 1.16 | 1.16 | 1.16 | 1.16 | 0.238 | 0.099 |  |  |
| 90 % | 1.16 | 1.16 | 1.16 | 1.16 | 0.238 | 0.099 |  |  |
| None | R3 Stream | 1.06 | 1.04 | 1.04 | 1.03 | 0.392 | 0.203 |  |  |
| 50 % | 1.05 | 1.04 | 1.03 | 1.03 | 0.389 | 0.202 |  |  |
| 75 % | 1.04 | 1.03 | 1.03 | 1.03 | 0.387 | 0.201 |  |  |
| 90 % | 1.03 | 1.03 | 1.03 | 1.03 | 0.386 | 0.200 |  |  |
| None | R4 Stream | 0.909 | 0.902 | 0.900 | 0.899 | 0.404 | 0.217 |  |  |
| 50 % | 0.903 | 0.900 | 0.899 | 0.899 | 0.403 | 0.216 |  |  |
| 75 % | 0.901 | 0.899 | 0.899 | 0.898 | 0.403 | 0.216 |  |  |
| 90 % | 0.899 | 0.898 | 0.898 | 0.898 | 0.402 | 0.216 |  |  |

##### Fruiting vegetables III - BBCH 51 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT V)

Table 1.7‑33: Single application FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 51 (DGR III / PMT V)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.588 | 0.575 | 0.573 | 0.572 | 0.573 | 0.572 |  |  |
| 50 % | 0.579 | 0.573 | 0.572 | 0.571 | 0.572 | 0.571 |  |  |
| 75 % | 0.575 | 0.572 | 0.571 | 0.571 | 0.571 | 0.571 |  |  |
| 90 % | 0.572 | 0.571 | 0.571 | 0.571 | 0.571 | 0.571 |  |  |
| None | R2 Stream | 1.02 | 1.02 | 1.02 | 1.01 | 0.271 | 0.126 |  |  |
| 50 % | 1.02 | 1.02 | 1.01 | 1.01 | 0.270 | 0.125 |  |  |
| 75 % | 1.02 | 1.01 | 1.01 | 1.01 | 0.269 | 0.125 |  |  |
| 90 % | 1.01 | 1.01 | 1.01 | 1.01 | 0.269 | 0.125 |  |  |
| None | R3 Stream | 1.25 | 1.22 | 1.21 | 1.21 | 0.468 | 0.242 |  |  |
| 50 % | 1.23 | 1.21 | 1.21 | 1.20 | 0.462 | 0.240 |  |  |
| 75 % | 1.21 | 1.21 | 1.20 | 1.20 | 0.460 | 0.238 |  |  |
| 90 % | 1.21 | 1.20 | 1.20 | 1.20 | 0.458 | 0.237 |  |  |
| None | R4 Stream | 0.922 | 0.917 | 0.915 | 0.914 | 0.426 | 0.229 |  |  |
| 50 % | 0.918 | 0.915 | 0.914 | 0.914 | 0.425 | 0.228 |  |  |
| 75 % | 0.916 | 0.914 | 0.914 | 0.913 | 0.425 | 0.228 |  |  |
| 90 % | 0.914 | 0.913 | 0.913 | 0.913 | 0.424 | 0.228 |  |  |

##### Fruiting vegetables III - BBCH 89 - 2 × 0.15 kg a.s./ha, 10d int. (DGR III / PMT VI)

Table 1.7‑34: Single application FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables III, assessment name BBCH 89 (DGR III / PMT VI)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.28 | 1.27 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| 50 % | 1.27 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| 75 % | 1.27 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| 90 % | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 | 1.26 |  |  |
| None | R2 Stream | 1.53 | 1.53 | 1.53 | 1.53 | 0.323 | 0.136 |  |  |
| 50 % | 1.53 | 1.53 | 1.53 | 1.52 | 0.322 | 0.136 |  |  |
| 75 % | 1.53 | 1.53 | 1.52 | 1.52 | 0.322 | 0.136 |  |  |
| 90 % | 1.53 | 1.52 | 1.52 | 1.52 | 0.322 | 0.136 |  |  |
| None | R3 Stream | 1.56 | 1.54 | 1.53 | 1.53 | 0.588 | 0.307 |  |  |
| 50 % | 1.54 | 1.53 | 1.53 | 1.53 | 0.584 | 0.305 |  |  |
| 75 % | 1.53 | 1.53 | 1.52 | 1.52 | 0.582 | 0.303 |  |  |
| 90 % | 1.53 | 1.52 | 1.52 | 1.52 | 0.580 | 0.303 |  |  |
| None | R4 Stream | 1.38 | 1.36 | 1.36 | 1.36 | 0.614 | 0.328 |  |  |
| 50 % | 1.37 | 1.36 | 1.36 | 1.36 | 0.611 | 0.326 |  |  |
| 75 % | 1.36 | 1.36 | 1.36 | 1.35 | 0.609 | 0.326 |  |  |
| 90 % | 1.36 | 1.36 | 1.35 | 1.35 | 0.608 | 0.325 |  |  |

##### Fruiting vegetables V - BBCH 51 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT IX)

Table 1.7‑35: Single application FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 51 (DGR V / PMT IX)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 0.588 | 0.575 | 0.573 | 0.572 | 0.573 | 0.572 |  |  |
| 50 % | 0.579 | 0.573 | 0.572 | 0.571 | 0.572 | 0.571 |  |  |
| 75 % | 0.575 | 0.572 | 0.571 | 0.571 | 0.571 | 0.571 |  |  |
| 90 % | 0.572 | 0.571 | 0.571 | 0.571 | 0.571 | 0.571 |  |  |
| None | R2 Stream | 1.02 | 1.02 | 1.02 | 1.01 | 0.271 | 0.126 |  |  |
| 50 % | 1.02 | 1.02 | 1.01 | 1.01 | 0.270 | 0.125 |  |  |
| 75 % | 1.02 | 1.01 | 1.01 | 1.01 | 0.269 | 0.125 |  |  |
| 90 % | 1.01 | 1.01 | 1.01 | 1.01 | 0.269 | 0.125 |  |  |
| None | R3 Stream | 1.25 | 1.22 | 1.21 | 1.21 | 0.468 | 0.242 |  |  |
| 50 % | 1.23 | 1.21 | 1.21 | 1.20 | 0.462 | 0.240 |  |  |
| 75 % | 1.21 | 1.21 | 1.20 | 1.20 | 0.460 | 0.238 |  |  |
| 90 % | 1.21 | 1.20 | 1.20 | 1.20 | 0.458 | 0.237 |  |  |
| None | R4 Stream | 0.922 | 0.917 | 0.915 | 0.914 | 0.426 | 0.229 |  |  |
| 50 % | 0.918 | 0.915 | 0.914 | 0.914 | 0.425 | 0.228 |  |  |
| 75 % | 0.916 | 0.914 | 0.914 | 0.913 | 0.425 | 0.228 |  |  |
| 90 % | 0.914 | 0.913 | 0.913 | 0.913 | 0.424 | 0.228 |  |  |

##### Fruiting vegetables V - BBCH 89 - 2 × 0.15 kg a.s./ha, 7d int. (DGR V / PMT X)

Table 1.7‑36: Single application FOCUS Step 4 PECsed results for fluopyram, GAP group name fruiting vegetables V, assessment name BBCH 89 (DGR V / PMT X)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| PECsed  (µg/kg) | Scenario | Step 4 fluopyram | | | | | | | |
| Nozzle reduction | Vegetated strip (m) | None | None | None | None | 10 m | 20 m |  |  |
| No spray buffer (m) | 0 m | 5 m | 10 m | 20 m | 10 m | 20 m |  |  |
| None | D6 Ditch | 1.47 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |  |  |
| 50 % | 1.46 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |  |  |
| 75 % | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |  |  |
| 90 % | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |  |  |
| None | R2 Stream | 1.53 | 1.53 | 1.53 | 1.53 | 0.323 | 0.136 |  |  |
| 50 % | 1.53 | 1.53 | 1.53 | 1.52 | 0.322 | 0.136 |  |  |
| 75 % | 1.53 | 1.53 | 1.52 | 1.52 | 0.322 | 0.136 |  |  |
| 90 % | 1.53 | 1.52 | 1.52 | 1.52 | 0.322 | 0.136 |  |  |
| None | R3 Stream | 1.56 | 1.54 | 1.53 | 1.53 | 0.588 | 0.307 |  |  |
| 50 % | 1.54 | 1.53 | 1.53 | 1.53 | 0.584 | 0.305 |  |  |
| 75 % | 1.53 | 1.53 | 1.52 | 1.52 | 0.582 | 0.303 |  |  |
| 90 % | 1.53 | 1.52 | 1.52 | 1.52 | 0.580 | 0.303 |  |  |
| None | R4 Stream | 1.36 | 1.34 | 1.34 | 1.34 | 0.606 | 0.324 |  |  |
| 50 % | 1.35 | 1.34 | 1.34 | 1.33 | 0.603 | 0.322 |  |  |
| 75 % | 1.34 | 1.33 | 1.33 | 1.33 | 0.601 | 0.322 |  |  |
| 90 % | 1.34 | 1.33 | 1.33 | 1.33 | 0.600 | 0.321 |  |  |

## Methods

The estimation of predicted environmental concentrations in surface water has been defined by the FOCUS Surface Water Group as a tiered approach with 4 steps (FOCUS 2001, 2015). Generally, the various possible entry routes of a substance into surface water like spray drift (90th percentile spray drift rates), runoff, erosion and drainage are considered. The most conservative Step 1 accounts for an “all at once” worst-case loading into a static standard ditch. Step 2 accounts for a more realistic loading based on sequential application patterns into the static ditch, while no specific scenarios are defined. At Step 3, an exposure assessment using realistic worst-case scenarios is performed, taking into account agronomic and climatic conditions relevant to the crop and a selection of typical water bodies. Finally, Step 4 estimates PECs based on specific local situations or with specific mitigation measures in place. It should be used on a case-by-case basis if Step 3 fails.

The relevant entry paths can differ based on the intended application type, *e.g.*, spray drift is not relevant for seed treatments. The following text provides the general overview of the assessment process.

### Steps 1-2

For Steps 1-2 estimations a standard ditch is defined (Table 1.8‑1). The distance between crop and water is fixed to 1 m for arable crops and 3 m for orchards, hops, and vine.

Table 1.8‑1: Standard ditch as defined in Steps 1-2

|  |  |
| --- | --- |
| Water depth | 30 cm |
| Sediment depth | 5 cm |
| Sediment organic carbon | 5 % |
| Sediment bulk density (wet weight) | 0.8 g/cm3 |
| Area ratio of field : water body | 10 |

#### Step 1

The input of pesticides into surface water by spray drift and runoff / erosion / drainage is evaluated as a single worst-case entry event. Correspondingly, multiple applications are treated as single entry event carrying the total amount applied. After entry into the surface water body, possible drift loadings, calculated internally as the 90th percentile values based on the drift tables published by Rautmann *et al.* (2001), are distributed according to the compound’s Koc value between water and sediment (within 1 day). The runoff / erosion / drainage entry (10 % of the applied amount) is distributed instantaneously between water and sediment at the time of loading, according to the Koc. The degradation in the water and in the sediment compartment follows single first-order kinetics.

#### Step 2

The possible pesticide input by spray drift is evaluated by a series of individual loadings according to the number of applications. Drift loadings are calculated internally as the 90th percentile values based on the drift values published by Rautmann *et al.* (2001).

The substance input by runoff / erosion / drainage (2 – 5 % of the soil residue at time of event) follows 4 days after the final application. Drift inputs are distributed between water and sediment assuming simplified partitioning kinetics for the portion of substance in water available for sorption. The runoff / erosion / drainage entry is distributed instantaneously between water and sediment at the time of loading according to the Koc. The degradation in the water and in the sediment compartment follows single first-order kinetics.

### Step 3

#### Scenarios

For Step 3 the FOCUS Surface Water Scenarios Group defined ten realistic worst case scenarios (Figure 1) which collectively represent the agronomic (soil, slope, crop) and climatic (temperature, rainfall) conditions in the EU. Table 1.8‑2 summarises key agro-climatic characteristics of the scenarios. There are six scenarios with entry *via* drain flow (scenarios D1 to D6) and four scenarios with entry *via* runoff (scenarios R1 to R4). All scenarios can consider exposure *via* spray drift. FOCUS (2001, 2015) provides maps that give an indication of the distribution of each scenario within Europe. Not all scenarios are relevant for all countries.

Three typical water bodies (pond, ditch, and stream) with specific residence times and upstream catchments areas were defined and are associated with the scenarios. Table 1.8‑3 and Table 1.8‑4 give the properties of these surface water bodies, including the sediment. Each water body is characterised by a specific base flow which is related to its upstream catchments area. In the stream scenario (with the largest catchment area) it is assumed that the pesticide is applied simultaneously on the adjacent field and on a certain part of the catchment. For more detailed information, see Table 1.8‑3.

Figure 1: Locations of the weather stations that are associated with the FOCUS Surface Water Step 3 scenarios



Table 1.8‑2: Characteristics of the FOCUS Surface Water Step 3 scenarios

| Name | Mean annual temp. | Annual rainfall | Topsoil texture classification | Organic carbon | Slope | Associated water bodies | Weather station |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | (°C) | (mm) |  | (%) | (%) |  |  |
| D1 | 6.1 | 556 | Silty clay | 2.0 | 0 – 0.5 | Ditch, stream | Lanna |
| D2 | 9.7 | 642 | Clay | 3.3 | 0.5 – 2 | Ditch, stream | Brimstone |
| D3 | 9.9 | 747 | Sand | 2.3 | 0 – 0.5 | Ditch | Vredepeel |
| D4 | 8.2 | 659 | Loam | 1.4 | 0.5 – 2 | Pond, stream | Skousbo |
| D5 | 11.8 | 651 | Loam | 2.1 | 2 – 4 | Pond, stream | La Jaillière |
| D6 | 16.7 | 683 | Clay loam | 1.2 | 0 – 0.5 | Ditch | Thiva |
| R1 | 10.0 | 744 | Silt loam | 1.2 | 3 | Pond, stream | Weiherbach |
| R2 | 14.8 | 1402 | Sandy loam | 4 | 20 a) | Stream | Porto |
| R3 | 13.6 | 682 | Clay loam | 1 | 10 a) | Stream | Bologna |
| R4 | 14.0 | 756 | Sandy clay loam | 0.6 | 5 | Stream | Roujan |
| a) Terraced to 5 % | | | | | | | |

Table 1.8‑3: Characteristics of the water bodies in the FOCUS Step 3 scenarios

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Water body | Width | Length | Default buffer | Min. water depth | Average residence time | Upstream catchments |
|  | (m) | (m) | (m) a) | (m) | (days) | (ha) b) |
| Pond | 30 | 30 | 1 | 1 | 50 | 0.45 (0 %) |
| Ditch | 1 | 100 | 0.5 | 0.3 | 5 | 2 (0 %) |
| Stream | 1 | 100 | 2 | 0.3 | 0.1 | 100 (20 %) |
| a) Distance from the top of the bank to the water body  b) In brackets: percentage of the upstream catchments area that is assumed to be treated | | | | | | |

Table 1.8‑4: Sediment characteristics of the water bodies in the FOCUS Surface Water Step 3 scenarios

|  |  |
| --- | --- |
| Thickness of sediment layer | 5 cm |
| Organic carbon content of the sediment | 5 % |
| Dry bulk density of the sediment | 0.8 g/cm³ |
| Porosity of the sediment | 60 % |

#### Methods and tools

FOCUS Step 3 calculations are performed with the software tool FOCUS-SWASH (Surface WAter Scenarios Help), developed by the FOCUS Surface Water Scenarios Group. FOCUS-SWASH consists of a database holding all information on substances, applications and scenarios, and of a software shell that controls and starts the deterministic simulation models MACRO, PRZM and TOXSWA.

The drain flow fluxes from the treated field to the water body are calculated with the one-dimensional leaching model MACRO, assuming a tile drain system. The flow to the drains is implemented as sink term in the vertical flow equation, using seepage potential theory. As MACRO also considers macro pores, the flow to the drains may originate from matrix and macropore flow. MACRO considers a six-year warm-up period and a subsequent 16-month assessment period with annual application. The calculated drainage volumes and drainage mass fluxes of the pesticide are exported to an M2T file that is used as input file for TOXSWA when running the drain flow scenarios.

The runoff and erosion loadings to the water body are calculated by the 1D leaching model PRZM, based on USDA curve number methodology and on a watershed-scale variant of the Universal Soil Loss Equation. Chemical Application Method (CAM) values (Table 1.8‑5) are used in order to specify initial soil distribution resulting from the application method. PRZM runs a 20-year simulation with annual application. A representative 12-month period is selected as assessment period. The calculated runoff volumes, the mass of eroded particles, and the mass fluxes of the pesticide with runoff and erosion, are exported to a P2T file that is used as input file for TOXSWA when running the runoff scenarios.

Table 1.8‑5: Chemical Application Method (CAM) values and their descriptions

|  |  |
| --- | --- |
| CAM | Description |
| 1 | Soil applied, default application depth = 4 cm; distribution: linearly decreasing with depth (FOCUS default) |
| 2 | Crop canopy, default soil incorporation depth for non-foliar intercepted chemical is 4 cm; distribution: linearly decreasing with depth |
| 3 | Non-linear foliar using exponential filtration, same default soil incorporation as in CAM 2 (option not used in FOCUS) |
| 4 | Soil applied, user defined incorporation depth; distribution: uniform with depth |
| 5 | Soil applied, user defined incorporation depth; distribution: linearly increasing with depth |
| 6 | Soil applied, user defined incorporation depth; distribution: linearly decreasing with depth |
| 7 | Soil applied, T-band granular application, user defined incorporation depth |
| 8 | Soil applied, chemical incorporated entirely into depth specified by user |

Both leaching models account for plant uptake of substances. They correct degradation rates for variable soil temperature and soil moisture, using an Arrhenius-type equation and the Walker equation, respectively. Crop interception is calculated dynamically on the basis of maximum interception capacity and actual leaf area index. Intercepted substance degrades on the canopy, but may also reach the soil surface by wash-off.

The entry *via* spray drift is calculated by the FOCUS Drift Calculator, an integral part of FOCUS-SWASH. The Drift Calculator is based on 90th percentile worst case spray drift rates, and takes into account the variable deposition over the width of the water body. The entry *via* spray drift is directly added to the water phase within TOXSWA.

The behaviour of a compound in the aquatic system is simulated with the TOXSWA model. TOXSWA considers water and sediment layer, both implemented as one-dimensional domains connected by an interface. Thereby the water layer has a horizontal extension and the sediment a vertical one. TOXSWA handles transient hydrology and pesticide fluxes resulting from runoff, erosion and drain flow calculated by the models described above with drift loadings provided by the Drift Calculator.

#### Time weighted averages (TWA)

For more specific comparisons of exposure and its effects, time weighted average PEC values (TWA values) are calculated, for weighting periods of 1 to 100 days, by Steps in FOCUS (Step 2) and TOXSWA (Step 3). The reported values are the maximum TWA for each scenario, determined by moving a respective time window over the whole assessment period.

### Step 4

At Step 4, the mitigation according to the FOCUS Landscape and Mitigation Factors report (FOCUS 2007) is assessed. For this purpose, calculations using mitigation measures for drift and runoff can be defined.

The reduction of drift is generally assessed according to the 90th percentile drift values published by Rautmann *et al.* (2001). For the stream scenarios, the drift percentages given to TOXSWA in FOCUS SWASH are 120 % of the standard values to include an additional 20 % of area treated in the upstream catchment.

Vegetated filter strips, which intercept runoff water and eroded sediment prior to entry into surface water, are considered as an appropriate mitigation option for runoff following the recommendations of the FOCUS Landscape and Mitigation Working Group (FOCUS 2007). Buffer strips reduce runoff loadings by reducing the runoff water volume (*i.e.*, by partial infiltration of runoff water into the ground) as well as by a reduction of the runoff flux (*i.e.*, by sorption and other processes resulting in a reduction of the concentration of the chemical in the runoff).

Based on published European runoff trials which showed high variability in the runoff reduction efficiency, the FOCUS Landscape and Mitigation Working Group gives some recommendations for the efficiency of 10-12 m and 18-20 m buffer strips using the 90th percentile worst-case values.

Following these recommendations for the efficiency of vegetated filter strips to reduce runoff water volume, runoff flux, erosion mass and erosion flux of a given substance, Step 4 simulations were carried out in this report.

In the SWASH shell developed by FOCUS, TOXSWA uses the hourly runoff volumes produced by PRZM to determine the edge-of-field runoff volume entering the adjacent water body and to determine the volume of water entering the water body from the upgradient or surrounding catchment area.

Two types of water bodies are associated with runoff scenarios: ponds and streams. The pond is assumed to be completely surrounded by crop (*i.e.*, the catchment is 100 % cropped) while the stream is assumed to have an upgradient catchment that is 20 % cropped. When a buffer zone is introduced at Step 4 to mitigate runoff, any adjustment of the runoff volume in a \*.p2t file will alter both the edge-of-field runoff volume as well as the catchment runoff volume. Reduction in the amount of edge-of-field runoff volume is assumed to affect only the runoff of the cropped portion of the upgradient catchment. Based on this logic, the reduced runoff volume can be calculated as

|  |  |  |
| --- | --- | --- |
|  |  |  |

where RV is the hourly runoff volume in P2T file, Af is the area of treated field (1 ha), Ac is the area of upgradient catchment (4.5 ha for pond, 100 ha for stream), F is fraction of catchment treated (1 for pond, 0.2 for stream) and frv is the fractional reduction in runoff volume due to the vegetated filter strip. When the stream and pond specific data are inserted in the above formula one finds that the runoff volume is reduced by 1 - frv for the pond and by 1 - 0.208 frv for the stream.

The other fluxes given in the P2T file, that is “Runoff flux“, “Erosion mass“ and “Erosion flux“ are reduced by 1 ‑ fX where X stands for the respective reduction factor (FOCUS 2007, Goerlitz *et al.* 2007).