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# FINAL REGISTRATION REPORT

## Part B

## Section 8

## Environmental Fate

Detailed summary of the risk assessment

Product code: BAS 768 00 F

Product name(s): Revytur

Chemical active substance(s):

Mefentrifluconazole, 25 g/L
Sulfur, 600 g/L

Central Zone

Zonal Rapporteur Member State: Poland

CORE ASSESSMENT

(authorization)

Applicant: BASF

Submission date: August 2023

MS Finalisation date: 11/12/2023

Applicant update: November 2023

# Version history

| When | What |
| --- | --- |
| 03/2023 | Initial dRR – BASF DocID 2023/2005002 |
| 04/2023 | Dossier sent for evaluation |
| 08/2023 | Update dRR – BASF DocID 2023/2036797 |
| 08/2023 | zRMS evaluation of dRR |
| 11/2023 | Applicant update after cMS comments – BASF DocID 2023/2054511 |
| 12/2023 | Final version prepared by zRMS after Commenting period |

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Evaluator comments:
The text highlighted in grey was provided by the evaluator.

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

## 8.1 Critical GAP and overall conclusions

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

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use-No. * | Member state(s) | Crop and/or situation (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I ** | Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group) | Application | | | | Application rate | | | PHI (days) | Remarks: e.g. g safener/ synergist per ha | Conclusion Groundwater |
| | | | | | Method / Kind | Timing / Growth stage of crop & season | Max. number a) per use b) per crop/ season | Min. interval between applications (days) | kg or L product/ha a) max. rate per appl. b) max. total rate per crop/season | g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season | Water L/ha min/max | | | |
| 1 | DE, AT, IE, NL | wheat TRZAW, TRZAS TRZDU, TRZSP | F | *Zymoseptoriatritici - SEPTTR* *Blumeriagraminis - ERYSGR* *Puccinia triticina - PUCCRT* *Puccinia striiformis - PUCCST* | Spraying (SP) | 30 - 59 | a) 2 b) 2 | 14 | a) 4.00 b) 8.00 | a) 0.100* / 2.400** b) 0.200* / 4.800** | 100 / 300 | 35 | | |
| 2 | IE | wheat TRZAW, TRZAS TRZDU, TRZSP | F | *P. tritici-repentis - PYRNTR* | Spraying (SP) | 30 - 59 | a) 2 b) 2 | 14 | a) 4.00 b) 8.00 | a) 0.100* / 2.400** b) 0.200* / 4.800** | 100 / 300 | 35 | | |
| 3 | PL | wheat TRZAW, TRZAS TRZDU, TRZSP | F | *Zymoseptoriatritici - SEPTTR* *Blumeriagraminis - ERYSGR* *Puccinia triticina - PUCCRT* | Spraying (SP) | 30 - 59 | a) 2 b) 2 | 14 | a) 4.00 b) 8.00 | a) 0.100* / 2.400** b) 0.200* / 4.800** | 100 / 300 | 35 | | |
| 4 | DE, AT, IE, NL | barley HORVW, HORVS | F | *Ramularia collo-cygni - RAMUCC* *Pyrenophora teres - PYRNTE* *Puccinia hordei - PUCCHD* *Rhynchosporiumsecalis - RHYNSE* | Spraying (SP) | 30 - 59 | a) 2 b) 2 | 14 | a) 4.00 b) 8.00 | a) 0.100* / 2.400** b) 0.200* / 4.800** | 100 / 300 | 35 | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use-No. * | Member state(s) | Crop and/or situation (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I ** | Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group) | **Application** | | | | **Application rate** | | | PHI (days) | Remarks: e.g. g safener/ synergist per ha | **Conclusion** Groundwater |
| | | | | | Method / Kind | Timing / Growth stage of crop & season | Max. number a) per use b) per crop/ season | Min. interval between applications (days) | kg or L product/ha a) max. rate per appl. b) max. total rate per crop/season | g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season | Water L/ha min/max | | | |
| 5 | DE, AT, IE, NL | triticale TTLWI | F | *Septoria species - SEPTSP* *Blumeriagraminis - ERYSGR* *Puccinia triticina - PUCCRT* *Puccinia striiformis - PUCCST* | Spraying (SP) | 30 - 59 | a) 2<br>b) 2 | 14 | a) 4.00<br>b) 8.00 | a) 0.100* / 2.400**<br>b) 0.200* / 4.800** | 100 / 300 | 35 | | |
| 6 | PL | triticale TTLWI | F | *Septoria species - SEPTSP* *Blumeriagraminis - ERYSGR* *Puccinia triticina - PUCCRT* | Spraying (SP) | 30 - 59 | a) 2<br>b) 2 | 14 | a) 4.00<br>b) 8.00 | a) 0.100* / 2.400**<br>b) 0.200* / 4.800** | 100 / 300 | 35 | | |
| 7 | CZ | wheat TRZAW, TRZAS TRZDU, TRZSP | F | *Zymoseptoriatritici - SEPTTR* *Blumeriagraminis - ERYSGR* *Puccinia triticina - PUCCRT* *Puccinia striiformis - PUCCST* | Spraying (SP) | 30 - 59 | a) 1<br>b) 1 | - | a) 3.00 – 4.00<br>b) 3.00 – 4.00 | a) 0.100* / 2.400**<br>b) 0.100* / 2.400** | 100 / 300 | 35 | | |
| 8 | CZ | barley HORVW, HORVS | F | *Ramularia collo-cygni - RAMUCC* *Pyrenophora teres - PYRNTE* *Puccinia hordei - PUCCHD* *Rhynchosporiumsecalis - RHYNSE* | Spraying (SP) | 30 - 59 | a) 1<br>b) 1 | - | a) 3.00 – 4.00<br>b) 3.00 – 4.00 | a) 0.100* / 2.400**<br>b) 0.100* / 2.400** | 100 / 300 | 35 | | |
| 9 | CZ | triticale TTLWI | F | *Septoria species - SEPTSP* *Blumeriagraminis - ERYSGR* *Puccinia triticina - PUCCRT* *Puccinia striiformis - PUCCST* | Spraying (SP) | 30 - 59 | a) 1<br>b) 1 | - | a) 3.00 – 4.00<br>b) 3.00 – 4.00 | a) 0.100* / 2.400**<br>b) 0.100* / 2.400** | 100 / 300 | 35 | | |

* Mefentrifluconazole

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

Explanation forcolumn 15 “Conclusion”

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

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

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use-No. * | Member state(s) | Crop and/or situation (crop destination / purpose of crop) | F, Fn, Fpn G, Gn, Gpn or I ** | Pests or Group of pests controlled (additionally: developmental stages of the pest or pest group) | **Application** | | | | **Application rate** | | | PHI (days) | Remarks: e.g. g safener/ synergist per ha |
| | | | | | Method / Kind | Timing / Growth stage of crop & season | Max. number a) per use b) per crop/ season | Min. interval between applications (days) | kg or L product/ha a) max. rate per appl. b) max. total rate per crop/season | g or kg as/ha a) max. rate per appl. b) max. total rate per crop/season | Water L/ha min/max | | |
| 1 | EU28 | Cereals | F | Septoria tritici - SEPTTR<br>further control claims are currently under evaluation | Foliar spray | 30-69 | a) 2<br>b) 2 | 14 | a) 1.50<br>b) 3.00 | a) 150g as/ha<br>b) 300 g as/ha | 100 / 300 | 35 | |

* Use number(s) in accordance with the list of all intended GAPs in Part B, Section 0 should be given in column 1
** F: professional field use, Fn: non-professional field use, Fpn: professional and non-professional field use, G: professional greenhouse use, Gn: non-professional greenhouse use, Gpn: professional and non-professional greenhouse use, I: indoor application

**Table 8.1-3: Assessed (critical) uses during approval of sulfur concerning the Section Environmental Fate**

| 1 | 2 | 3 | 4 | 5 | | | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Crop and/or situation (a)** | **Member State or Country** | **Product Name** | **F G or I (b)** | **Pests or Group of pests controlled (c)** | **Formulation** | | **Application** | | | | **Applicationratepertreatment** | | | **PHI (days)** | **Remarks** |
| | | | | | **Type (d-f)** | **Conc.ofa.s. (i)** | **MethodKind (f-h)** | **(l)** | **(m)** | **Interval betweenapps.(min)** | **kga.s./hL min max** | **water(L/ha)min max** | **kg a.s./h min max** | | |
| Cereals-Barley,rye&wheat | Germany | KUMULUSWG | F | Erysiphegraminis | WG | Sulfur80 % (w/w) | Foliarspray | BBCH25-77 | 1-2 | 14 | 1.2-3.2 | 200-400 | 4.8 - 6.4 | 35 | [1][2][3] |
| Cereals-barley, rye&wheat | Germany | NETZSCH-WEFEL STULLN | F | Erysiphegraminis | WG | Sulfur80 % (w/w) | Foliarspray | BBCH 25-27 | 1-2 | 14 | 1.2-3.2 | 200-400 | 4.8 - 6.4 | 35 | [1][2][3] |
| CerealGroup | Germany | THIOVITJET80WG | F | Erysiphegraminis | WG | Sulfur80 % (w/w) | Foliarspray | BBCH 25-27 | 1-2 | 14 | 1.2-3.2 | 200-400 | 4.8 - 6.4 | 35 | [1][2][3] |
| CerealGroup | France | MICROTHIO-LDISPERSS | F | Oidium | WG | Sulfur80 % (w/w) | Foliarspray | BBCH 25-27 | 1-2 | 14 | 1.2-3.2 | 200 - 600 | 4.8 - 6.4 | 35 | [1][2][3] |
| Grapes | Germany | KUMULUSWGNETZ SCH-WEFEL STULLN | F | Uncinulanecator | WG | Sulfur80 % (w/w) | Foliarspray | Tobeginningofripening | 1-8 | 7 | 0.16 - 0.64 | 400-1600 | 2.56 | 28 | [1] |
| Grapes | Germany | KUMULUSWGNETZ SCH-WEFEL STULLN | F | Uncinulanecator | WG | Sulfur80 % (w/w) | Foliarspray | Tobeginningofripening | 1-8 | 7 | 0.5 - 2 | 400-1600 | 8 | 28 | [1][3][4] |
| GrapeGroup | France | THIOVITJET80WG | F | Uncinulanecator | WG | Sulfur80 % (w/w) | Foliarspray | Tobeginningofripening | 1-8 | 7 | 1.28 - 2.56 | 200- 1000 | 2.56 | 28 | [1] |
| GrapeGroup | France | THIOVITJET80WG | F | Uncinulanecator | WG | Sulfur80 % (w/w) | Foliarspray | Tobeginningofripening | 1-8 | 7 | 0.8-4 | 200- 1000 | 8 | 28 | [1][3][4] |
| GrapeGroup | France | MICROTHIO-LDISPERSS | F | AcariosandErinose | WG | Sulfur80 % (w/w) | Foliarspray | Tobeginningofripening | 1-8 | 7 | 0.256 - 1.28 | 200- 1000 | 2.56 | 28 | [1] |
| GrapeGroup | France | MICROTHIO-LDISPERSS | F | AcariosandErinose | WG | Sulfur80 % (w/w) | Foliarspray | Tobeginningofripening | 1-8 | 7 | 0.8 - 4 | 200- 1000 | 8 | 28 | [1][3][4] |

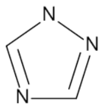
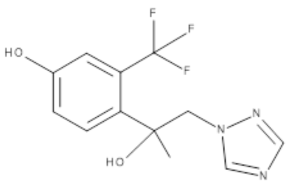
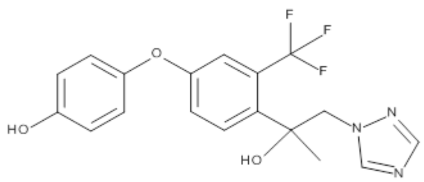
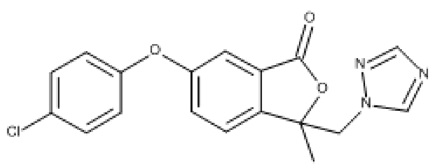
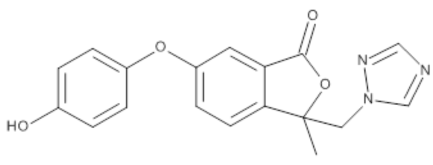
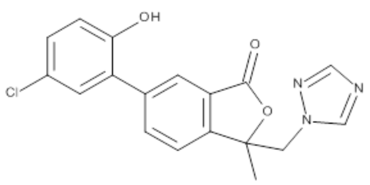
| 1 | 2 | 3 | 4 | 5 | | | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Crop and/or situation (a)** | **Member State or Country** | **Product Name** | **F G or I (b)** | **Pests or Group of pests controlled (c)** | **Formulation** | | **Application** | | | | **Applicationratepertreatment** | | | **PHI (days)** | **Remarks** |
| | | | | | **Type (d-f)** | **Conc.ofa.s. (i)** | **MethodKind (f-h)** | **(l)** | **(m)** | **Interval betweenapps.(min)** | **kga.s./hL min max** | **water(L/ha)min max** | **kg a.s./h min max** | | |
| Grapes | North &SouthEU | Sulphur80WG | F | Powderymildew | WG | 80% (w/w) | spray | Tobeginningofripening | 5 | 7-10 days | 2;700 - 4;000 | 200 - 300 | 2.56 | 28 | [1] |
| Grapes | North &SouthEU | SulphurDust | F | Powderymildew | DP | 98.5 %(w/w) | dust | Tobeginningofripening | 5 | 7-10 days | Notapplicable | Notapplicable | 19.7 - 29.55 | 5 | [1][3][4] |
| Grapes | North &SouthEU | Sulphur80WG | F | Powderymildew | WG | 80% (w/w) | spray | Tobeginningofripening | 5 | 7-10 days | 2;700 - 4;000 | 200 - 300 | 8 | 28 | [1][3][4] |

[1] Adatagapforastudywithsedimentdwellingorganismswasidentifiedandfurtherrefinementisneededfortheriskassessmentforsensitivenon-targetarthropods
[2] Theriskassessmentforherbivorousbirdsneedsrefinement(forapplicationsatearlygrowthstages)
[3] Theriskassessmentforinsectivorousbirdsneedsrefinement(forapplicationratesof6.4kga.s./haincerealsandforapplicationratesof8,19.7and29.5kga.s./haingrapes)
[4] Theriskassessmentformammalsneedsrefinement

## 8.2 Metabolites considered in the assessment

All information provided in this chapter was previously evaluated in the frame of the EU review of mefentrifluconazole (BAS 750F) and were summarized from the EFSA Conclusion on the active substance [*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*].More detailed information were collected from the DAR, when necessary. [*European Commission / RMS UK, Co-RMS AT and FR (2018): Draft Assessment Report prepared according to the Commission Regulation (EU) N° 1107/2009. BAS 750F (Mefentrifluconazole)*].

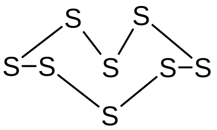
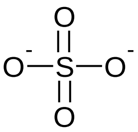
**Table 8.2-1: Metabolites of mefentrifluconazolepotentially relevant for exposure assessment**

| Metabolite | Molar mass [g mol$^{-1}$] | Chemical structure | Maximum observed occurrence in compartments [%] | Exposure assessment required due to |
|---|---|---|---|---|
| M750F001 (1,2,4-triazole) | 69.1 |  | Soil: 5.1[a]<br>Water: 10.2<br>Sediment: 4.9<br>Total w/s system: 15.1 | $PEC_{soil}$: yes[a]<br>$PEC_{gw}$: yes[a]<br>$PEC_{sw}$: yes<br>$PEC_{sed}$: yes |
| M750F003 | 287.2 |  | Soil: 1.8<br>Water: 3.8<br>Sediment: 5.4<br>Total w/s system: 8.5 | $PEC_{soil}$: no<br>$PEC_{gw}$: no<br>$PEC_{sw}$: yes<br>$PEC_{sed}$: yes |
| M750F005 | 379.3 |  | Soil: not detected in soil<br>Water: 32.2 (max. in aqueous photolysis study)<br>Sediment: not detected in sediment<br>Total w/s system: not detected in w/s study | $PEC_{soil}$: no<br>$PEC_{gw}$: no<br>$PEC_{sw}$: yes<br>$PEC_{sed}$: yes |
| M750F006 | 355.8 |  | Soil: not detected in soil<br>Water: 30.7 (max. in aqueous photolysis study)<br>Sediment: not detected in sediment<br>Total w/s system: not detected in w/s study | $PEC_{soil}$: no<br>$PEC_{gw}$: no<br>$PEC_{sw}$: yes<br>$PEC_{sed}$: yes |
| M750F007 | 337.3 |  | Soil: not detected in soil<br>Water: 43.9 (max. in aqueous photolysis study)<br>Sediment: not detected in sediment<br>Total w/s system: not detected in w/s study | $PEC_{soil}$: no<br>$PEC_{gw}$: no<br>$PEC_{sw}$: yes<br>$PEC_{sed}$: yes |
| M750F008 | 355.8 |  | Soil: not detected in soil<br>Water: 7.3 (max. in aqueous photolysis study)<br>Sediment: not detected in sediment<br>Total w/s system: not detected in w/s study | $PEC_{soil}$: no<br>$PEC_{gw}$: no<br>$PEC_{sw}$: yes<br>$PEC_{sed}$: yes |

[a] The metabolite was observed at a single time point above 5% in one soil (max. 5.1% at 90 d with subsequent decline – average of two replicates). For precautionary reasons, it was included in the exposure assessment for soil and groundwater

According to the EFSA Scientific Report (2008) for sulfur, no metabolites are considered to be relevant for exposure and risk assessment in soil. Sulfur transformation in soil is governed by oxidation. Main transformation products are sulfates which are part of the Sulfur cycle. Furthermore, as sulfur is a mineral the consideration of metabolites is not applicable.

**Table 8.2-2: Sulfur and major metabolites potentially relevant for exposure assessment**

| Chemical name (IUPAC) | Molar mass [g mol$^{-1}$] | Chemical structure | Maximum observed occurrence in compartments [%] | Exposure assessment required due to |
|---|---|---|---|---|
| Sulfur | 32.064 (S) |  | Not applicable | $PEC_{soil}$: yes<br>$PEC_{gw}$: ~~no~~ yes<br>$PEC_{sw}$: ~~no~~ yes<br>$PEC_{sed}$: yes |
| Sulfate | 96.06 |  | Not determined | $PEC_{soil}$: no<br>$PEC_{gw}$: yes<br>$PEC_{sw}$: ~~no~~yes<br>$PEC_{sed}$: yes |

## 8.3 Rate of degradation in soil (KCP 9.1.1)

### Mefentrifluconazole

Studies on degradation in soil with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.
All information on mefentrifluconazole provided in this chapter was previously evaluated in the frame of the EU review of mefentrifluconazole and were summarized from the EFSA Conclusion on the active substance[*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*].

EU agreed endpoints for the metabolite 1,2,4-triazole originate from CRD evaluation [*CRD (2014): Triazole Derived Metabolite: 1,2,4-Triazole. Proposed revision to DT50 Summary, Scientific Evaluation and Assessment July 2011, revised September 2011 (after comments from MS and EFSA) and further revised January 2013 (minor clarifications added post-commenting) 24 Oct. 2014*]. All relevant endpoints for 1,2,4-triazole were included in the EFSA Conclusion on the active substance mefentrifluconazole as well.

### Sulfur

Data on the rates of degradation of the active substance sulfur in aerobic soil are available in the context of the last EU evaluation process resulting in the Annex I inclusion of the active substance. Additional data were not required as a result of the review.

A brief summary of the rate of degradation as presented in the EFSA Scientific Report (2008) 221 (sulfur) is given hereafter.

A preliminary remark should be considered on the assessment of persistence of sulfur in soil. The rate of oxidation of elemental sulfur is the process that determines the rate, at which sulfate is available to plants. Oxidation is preceded by a short incubation period allowing the formulated granules to absorb moisture from the soil, and then disintegrate to release sulfur. Oxidation then proceeds quickly and smoothly, the kinetics being a function of temperature, soil pH, organic content of soil, and particle size of elemental sulfur.

The submitted studies on persistence of sulfur in soil were published studies. Due to the absence of raw data, the rapporteur Member State could not validate the studies, but considered them supportive to describe the behaviour of sulfur in the environment, as well as conditions (pH, temperature,), that influenced sulfur fate. It has been shown that the oxidation rate of sulfur increases with the particle size of the elemental sulfur used, and with temperature. The view of the Member State experts was that because of the complexity of the processes governing the oxidation rate of elemental sulfur and some deficiencies in the laboratory studies, including the lack of information on the method of calculation of the oxidation rates, the results of these studies should not be used quantitatively (i.e. derived “$DT_{50}$”) in the exposure assessment. It was also agreed that taking into account the natural background concentration of sulfur in the top 15 cm layer of agricultural soils of 50-1000 mg S/kg soil, reliable “$DT_{50}$” values for elemental sulfur are not necessary to finalise the assessment.

## 8.3.1 Aerobic degradation in soil (KCP 9.1.1.1)

### 8.3.1.1 Mefentrifluconazoleand its metabolites

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

| Mefentrifluconazole, laboratory studies, dark aerobic conditions | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Soil name/ Soil type [a]** | **pH** | **t. [°C] / MWHC [%]** | **$DT_{50}$ / $DT_{90}$ [d] Trigger endpoints, not normalised** | **$DT_{50}$ [d] 20 °C pF2/10kPa [d]** | **$\chi^2$ (trigger / modelling) [%]** | **Kinetic model (trigger / modelling)** | **Evaluated on EU level** |
| Li10 loamy sand (tr) | 6.1 [b] | 20/ 40 | >1000/ >1000<br>α: 0.0656, β: 8.43 | 477.1 | 0.3 / 1.6 | FOMC / SFO | Yes, EFSA (2018) |
| Indiana loam (tr) | 5.8 [b] | 20/ 40 | >1000/ >1000<br>α: 0.0762, β: 21.13 | 366 | 0.8 / 1.2 | FOMC / SFO | Yes, EFSA (2018) |
| LUFA 5M loamy sand (cp and tr) | 7.2 [b] | 20/ 40 | 525/ 1870<br>cpα: 0.0844, β: 12.9<br>tr k1: 1.2E-1, k2: 1.2E-3, g: 6.6E-2 | 252 | 0.3 / 1.4 | FOMC cp label, DFOP tr label / SFO | Yes, EFSA (2018) |
| New Jersey loam (cp and tr) | 6.9 [c] | 20/ 40 | 488/ >1000<br>cp k1: 1.7E-1, k2: 2.9E-3, g: 1.1E-1<br>tr α: 0.229, β: 24.2 | 134 | 0.8 / 2.6 | DFOP cp label, FOMC tr label / SFO | Yes, EFSA (2018) |
| New Jersey loam (tf) | 6.4 [b] | 20/ 40 | 434/ >1000<br>α: 0.249, β: 28.5 | 104 | 1.2 / 2.4 | FOMC / SFO | Yes, EFSA (2018) |
| Geometric mean New Jersey | | | | 118 | | | |
| Geometric mean all soils (if not pH dependent) [e] | | | | 268 [f] | | | |
| pH dependence | | | | No | | | |

[a] Label designations: chlorophenyl (cp), triazole (tr), trifluoromethlyphenyl (tf)
[b] Measured in $CaCl_2$ solution
[c] Measured in water
[d] Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7
[e] In the geometric mean calculations, the geometric mean value of the New Jersey soil results was considered (i.e. the ‘geometric mean all soils (if not pH dependent)’ is calculated from the following $DT_{50}$ values: 477.1, 366, 252 and 118)
[f] For PEC calculation $DT_{50}$ values from the field study were used

**Table 8.3-2: Summary of aerobic degradation rates for 1,2,4-triazole - laboratory studies**

| M750F001 (1,2,4-triazole), laboratory studies, dark aerobic conditions, metabolite applied as parent. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Soil type** | **pH [a]** | **t. [°C] / MWHC [%]** | **k1/ k2/ g [-]** | **$DT_{50}$ fast phase/ $DT_{50}$ slow phase [d]** | **f. f. $k_f/k_{dp}$** | **$DT_{50}$ [d] 20 °C pF2/10kPa [b]** | **$\chi^2$ [%]** | **Kinetic model** | **Evaluated on EU level/ Reference** |
| Sandy loam | 6.4 | 20 °C / 40 % | 0.77 / 0.01 / 0.683 | 0.9/ 59.2 | - | - | - | DFOP | Yes, CRD (2014) EFSA (2018) |
| Loamy sand | 5.8 | 20 °C / 40 % | 0.46 / 2.8E-3 / 0.580 | 1.5/ 247.6 | - | - | - | DFOP | Yes, CRD (2014) EFSA (2018) |

| **M750F001 (1,2,4-triazole), laboratory studies, dark aerobic conditions, metabolite applied as parent.** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Soil type** | **pH [a]** | **t. [ºC] / MWHC [%]** | **k1/ k2/ g [-]** | **$DT_{50}$ fast phase/ $DT_{50}$ slow phase [d]** | **f. f. $k_f$/k $_{dp}$** | **$DT_{50}$ [d] 20 °C pF2/10kPa [b]** | **$\chi^2$ [%]** | **Kinetic model** | **Evaluated on EU level/ Reference** |
| Silt loam | 6.7 | 20 ºC / 40 % | 0.87 / 0.03 / 0.443 | 0.8/ 20.6 | - | - | - | DFOP | Yes, CRD (2014) EFSA (2018) |
| Geometric mean (n = 3) | | | | 1.0/ 67.1 ~~/ 0.569~~ [c] | | | | | |
| pH dependence | | | | No | | | | | |

[a] Measured in $CaCl_2$ solution
[b] Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7
~~[c] For PEC calculation $DT_{50}$ values from the field study were used~~

| | |
|---|---|
| ZRMS Comment: | According to LoEP for active substance mefentrifluconazole, for its metabolite M750F001 (1,2,4-triazole) the $DT_{50}$ for fast and slow phase are 1.0 d and 67.1 d. |

### 8.3.1.2 Sulfur

According to EFSA Scientific Report (2008) 221 of sulfur, 100 % of sulfur applied to soil is assumed to be oxidized to sulfates. No specific transformation rate of sulfur to sulfates was considered. Oxidation of sulfur was assumed to happen immediately after application to soil. No metabolites are considered to be relevant for exposure and risk assessment in soil. Sulfur transformation in soil is governed by oxidation. Main transformation products are sulfates which are part of the Sulfur cycle. Furthermore, as sulfur is a mineral the consideration of metabolites is not applicable.

## 8.3.2 Anaerobic degradation in soil (KCP 9.1.1.1)

### 8.3.2.1 Mefentrifluconazole and its metabolites

**Table 8.3-3: Summary of anaerobic degradation rates for mefentrifluconazole - laboratory studies**

| **Mefentrifluconazole, laboratory studies, dark anaerobic conditions** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Soil type** | **pH [a]** | **t. [ºC] / MWHC [%]** | **$DT_{50}$ / $DT_{90}$ [d]** | **$DT_{50}$ [d] 20 °C [b]** | **St. ($\chi^2$)** | **Kinetic model** | **Evaluated on EU level** |
| Li10 loamy fine sand (tr) | 6.1 | 20 / flooded | 349 / >1000 | Not calculated | 3.51 | SFO | Yes, EFSA (2018) |
| LUFA 5M sandy loam (tr) | 7.2 | 20 / flooded | - / - [c] | - | - | - | Yes, EFSA (2018) |
| Indiana loam (tr) | 5.6 | 20 / flooded | 390 / >1000 | Not calculated | 2.8 | SFO | Yes, EFSA (2018) |
| New Jersey loam (cp) (tr) [d] | 6.6 | 20 / flooded | 899 / >1000 | Not calculated | 2.8 | SFO | Yes, EFSA (2018) |

[a] Measured in $CaCl_2$ solution
[b] Normalised using a $Q_{10}$ of 2.58
[c] No discernible decline for BAS 750 F was observed, therefore kinetics were not investigated
[d] Data treated as 4 replicates, 2 from each radiolabel

No major metabolites were detected under anaerobic conditions.

### 8.3.2.2 Sulfur

General information is provided in the EFSA Scientific Report (2008) 221 of sulfur, which states that elemental sulfur is stable under sterile conditions, but readily undergoes degradation through reductive processes under anaerobic conditions by specific microbial organisms to sulfides (-S-) which in turn is abundant in nature.

According to the Final Addendum to the DAR for sulfur (December 2008) under anaerobic conditions, sulfate can be reduced to Sulfitde by the activity of bacteria that are strict anaerobes, primarily *Desulfovibrio*and *Desulfotomaculum*species (Freney and Williams, 1983 [1]).

This process generally occurs only in waterlogged soils and is therefore relatively unimportant under normal agricultural conditions. Anaerobic conditions favour microbial reduction to Sulfide ($HS^-$) anions which are removed by metal ions such as iron in the soil or released as hydrogen Sulfide ($H_2S$) into the atmosphere.

[1]Freney, J.R., Williams, C.H. (1983): The sulphur cycle in soil. In: M.V. Ivanov & J.R. Freney (Eds) The Global Biogeochemical Sulphur Cycle (pp 129–201). SCOPE 19. John Wiley and Sons. Chichester, New York

## 8.4 Field studies (KCP 9.1.1.2)

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

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

### 8.4.1.1 Mefentrifluconazole and its metabolites

All information on mefentrifluconazole provided in this chapter was previously evaluated in the frame of the EU review of mefentrifluconazole and were summarized from the EFSA Conclusion on the active substance[*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*].

EU agreed endpoints for the metabolite 1,2,4-triazole originate from CRD evaluation [*CRD (2014): Triazole Derived Metabolite: 1,2,4-Triazole. Proposed revision to DT50 Summary, Scientific Evaluation and Assessment July 2011, revised September 2011 (after comments from MS and EFSA) and further revised January 2013 (minor clarifications added post-commenting) 24 Oct. 2014*]. All relevant endpoints for 1,2,4-triazole were included in the EFSA Conclusion on the active substance mefentrifluconazole as well.

**Triggering endpoints**

**Table 8.4-1: Summary of aerobic degradation rates for mefentrifluconazole- field studies: Triggering endpoints**

| **Mefentrifluconazole, field studies** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Soil type** | **Location** | **pH a)** | **Depth [cm]** | **$DT_{50}$ [d] Actual Trigger, k1/k2/g where appropriate** | **$DT_{90}$ [d] Actual Trigger** | **$DT_{50}$ [d] Norm b). Modelling** | **St. ($\chi^2$)** | **Method of calculation** | **Evaluated on EU level** |
| Sandy loam | Bogense, Denmark | 6.4 | 0-50 | 185.5 | 616.1 | 96.5 | 9.2 / 9.4 | SFO / SFO | Yes, EFSA (2018) |
| Loamy sand | Lentzke, East Germany | 5.4 | 0-50 | 350.6 | >1000 | 184.0 | 8.9 / 9.0 | SFO / SFO | Yes, EFSA (2018) |
| Silt loam | Goch-Nierswalde, West Germany | 6.5 | 0-50 | 267.6 | 889.1 | 146.7 | 16.2 /17.5 | SFO / SFO | Yes, EFSA (2018) |

| **Mefentrifluconazole, field studies** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Soil type** | **Location** | **pH** [a] | **Depth [cm]** | **$DT_{50}$ [d] Actual Trigger, k1/k2/g where appropriate** | **$DT_{90}$ [d] Actual Trigger** | **$DT_{50}$ [d] Norm** [b]**. Modelling** | **St. ($\chi^2$)** | **Method of calculation** | **Evaluated on EU level** |
| Silty clay loam | Stotzheim, France | 7.4 | 0-50 | 145.4 [c]/ 262.1 [d] 2.027E-2 / 2.17E-3 / 0.3389 | 870.2 | 128.6 | 8.4 / 6.2 | DFOP / SFO | Yes, EFSA (2018) |
| Silty clay loam | Poggio Renatico, Italy | 7.6 | 0-50 | 846.6 | >1000 | 610.8 | 9.4 / 8.5 | SFO / SFO | Yes, EFSA (2018) |
| Loamy sand | Utrera, Spain | 7.4 | 0-50 | 200.5 [c]/ 292.6 [d] 9.477E-2 / 2.087E-3/0.2401 | 971.6 | 313.0 | 6.3 / 14.2 | DFOP / SFO | Yes, EFSA (2018) |
| Geometric mean (if not pH dependent) | | | | | | 200.0 | | | |
| pH dependence | | | | | | No | | | |

a) Measured in $CaCl_2$ solution
b) Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7, values are $DegT_{50}$matrix
c) Overall value
d) Calculated Value: Overall $DegT_{90}$/3.32

**Table 8.4-2: Summary of aerobic degradation rates for 1,2,4-triazole - field studies: Triggering endpoints**

| **M750F001 (1,2,4-triazole), Field studies – Trigger endpoints** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Soil type** | **Location** | **pH** [a] | **Depth [cm]** | **$DT_{50}$ [d] actual** | **$DT_{90}$ [d] actual** | **$\chi^2$ [%]** | **$DT_{50}$ [d] Norm** [b]**.** | **f. f. $k_f/k_{dp}$** | **Method of calculation** | **Evaluated on EU level/ Reference** |
| Silt loam | Germany | 6.4 | 0-30 | 7.8 | 366.7 | 15.2 | See table Table 8.4-3 for normalised endpoints | - | FOMC | Yes, CRD (2014) [c] EFSA (2018) |
| Silty clay loam | Italy | 7.6 | 0-40 | 21.2 | 207.4 | 10.7 | | - | DFOP | Yes, CRD (2014) [c] EFSA (2018) |
| Sandy loam | UK | 7.4 | 0-40 | 6.8 | 109.3 | 17.8 | | - | DFOP | Yes, CRD (2014) [c] EFSA (2018) |
| Loam | Spain | 5.8 | 0-30 | 28.1 | 717.6 | 13.3 | | - | DFOP | Yes, CRD (2014) [c] EFSA (2018) |
| Geometric mean (if not pH dependent) | | | | | | | | | | |
| Arithmetic mean | | | | | - | | | | | |
| pH dependence | | | | | No | | | | | |

a) Measured in $CaCl_2$ solution
b) Normalised using a Q10 of 2.58 and Walker equation coefficient of 0.7 values are $DegT_{50}$matrix

**Modelling endpoints**

**Table 8.4-3: Summary of aerobic degradation rates for 1,2,4-triazole - field studies: Modelling endpoints**

| M750F001 (1,2,4-triazole), Field studies – Modelling endpoints | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Soil type** | **Location** | **pH [a)]** | **Depth [cm]** | **$DT_{50}$[d] Fast phase (k1)** | **$DT_{50}$[d] Slow phase (k2)** | **'g' [-]** | **$\chi^2$** | **Method of calculation** | **Evaluated on EU level/ Reference** |
| Silt loam | Germany | 6.4 | 0-30 | 2.5 (0.277) | 70.7 (9.8E-3) | 0.655 | 18.8 | DFOP | Yes, CRD (2014) EFSA (2018) |
| Silty clay loam | Italy | 7.6 | 0-40 | 1.4 (0.495) | 59.8 (0.116) | 0.364 | 10.6 | DFOP | Yes, CRD (2014) EFSA (2018) |
| Sandy loam | UK | 7.4 | 0-40 | 0.5 (1.386) | 25.1 (0.028) | 0.458 | 18.1 | DFOP | Yes, CRD (2014) EFSA (2018) |
| Loam | Spain | 5.8 | 0-30 | 4.6 (0.151) | 126.0 (5.5E-3) | 0.489 | 12.7 | DFOP | Yes, CRD (2014) EFSA (2018) |
| Geometric mean (n = 4) | | | | 1.68 [b)] | 60.5 [b)] | | | DFOP | |
| Arithmetic mean | | | | | | 0.489 [b)] | | | |

a) Measured in $CaCl_2$ solution
b) Agreed endpoints

## 8.4.1.2 Sulfur

No representative field studies are available.

A field study was conducted on a New Zealand sulfur deficient soil (Lee, A. *et al*, 1988 [2]) which was evaluated to be not representative for European conditions with regard to climatic conditions and the nature of the soil. The study was considered to be not useful for European risk assessment. However, it confirms previous data obtained in laboratory conditions, especially concerning the role of sulfur particle size in sulfur oxidation rate.

[2] Lee, A. *et al.*; 1988: Factors affecting oxidation rates of elemental sulphur in a soil under a ryegrass dominated sward. Soil Biology and Biochemistry - Journal, Vol 30, No 6, 809-816.

## 8.4.2 Soilaccumulationtesting (KCP 9.1.1.2.2)

### 8.4.2.1 Mefentrifluconazole and its metabolites

A terrestrial field accumulation study with mefentrifluconazole is ongoing. Study design and related information are presented in the DAR [*European Commission / RMS UK, Co-RMS AT and FR (2018): Draft Assessment Report prepared according to the Commission Regulation (EU) N° 1107/2009. BAS 750F (Mefentrifluconazole) - Volume 3 – B.8 (AS)*].

### 8.4.2.2 Sulfur

According to the EFSA Scientific Report (2008) 221 for sulfur, sulfur is not expected to be persistent in elemental form, and therefore no accumulation of elemental sulfur is anticipated. Thus, accumulation testing would not appear to be required.

## 8.5 Mobility in soil (KCP 9.1.2)

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

### 8.5.1 Mefentrifluconazole and its metabolites

All information on mefentrifluconazole provided in this chapter was previously evaluated in the frame of the EU review of mefentrifluconazole and were summarized from the EFSA Conclusion on the active substance [*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*].

EU agreed endpoints for the metabolite 1,2,4-triazole originate from CRD evaluation [*CRD (2014): Triazole Derived Metabolite: 1,2,4-Triazole. Proposed revision to DT50 Summary, Scientific Evaluation and Assessment July 2011, revised September 2011 (after comments from MS and EFSA) and further revised January 2013 (minor clarifications added post-commenting) 24 Oct. 2014*]. All relevant endpoints for 1,2,4-triazole were included in the EFSA Conclusion on the active substance mefentrifluconazole as well.

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

| **Mefentrifluconazole** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Soil Type (USDA)** | **OC %** | **Soil pH (measured in water)** | **$K_d$ [mL $g^{-1}$]** | **$K_{doc}$ [mL $g^{-1}$]** | **$K_F$ [mL $g^{-1}$]** | **$K_{Foc}$ [mL $g^{-1}$]** | **1/n** | **Evaluated on EU level** |
| Indiana loam | 1.22 | 5.7 | - | - | 48.46 | 3972.29 | 0.95 | Yes, EFSA (2018) |
| New Jersey loam | 1.00 | 6.8 | - | - | 35.61 | 3560.75 | 0.96 | Yes, EFSA (2018) |
| Obhiro loam | 3.40 | 6.9 | - | - | 126.14 | 3709.90 | 1.01 | Yes, EFSA (2018) |
| Fiorentino Poggio Renatico 1 loam | 1.00 | 8.2 | - | - | 31.43 | 3143.03 | 0.92 | Yes, EFSA (2018) |
| La Gironda sandy clay loam | 1.22 | 8.3 | - | - | 24.53 | 2010.28 | 0.94 | Yes, EFSA (2018) |
| Li10 loamy sand | 0.95 | 6.9 | - | - | 36.34 | 3824.78 | 1.02 | Yes, EFSA (2018) |

| Mefentrifluconazole | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Soil Type (USDA)** | **OC %** | **Soil pH (measured in water)** | **$K_d$ [mL $g^{-1}$]** | **$K_{doc}$ [mL $g^{-1}$]** | **$K_F$ [mL $g^{-1}$]** | **$K_{Foc}$ [mL $g^{-1}$]** | **1/n** | **Evaluated on EU level** |
| LUFA 5M sandy loam | 1.10 | 7.4 | - | - | 35.83 | 3251.56 | 1.00 | Yes, EFSA (2018) |
| LUFA 2.1 sand | 0.60 | 6.5 | - | - | 29.59 | 4930.94 | 1.00 | Yes, EFSA (2018) |
| Geometric mean (n = 8; if not pH dependent) | | | | | 39.93 | 3455.59 | | |
| Arithmetic mean (n = 8; if not pH dependent) | | | | | | | 0.975 | |
| pH dependence | | | No | | | | | |

## Table 8.5-2: Summary of soil adsorption/desorption for 1,2,4-triazole

| M750F001 (1,2,4-triazole) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Soil Type** | **OC %** | **Soil pH** [a)] | **$K_d$ [mL $g^{-1}$]** | **$K_{doc}$ [mL $g^{-1}$]** | **$K_F$ [mL $g^{-1}$]** | **$K_{Foc}$ [mL $g^{-1}$]** | **1/n** | **Evaluated on EU level** |
| Silty clay | 0.70 | 8.8 | - | - | 0.833 | 120 | 0.897 | Yes, CRD (2014) EFSA (2018) |
| Clay loam | 1.74 | 6.9 | - | - | 0.748 | 43 | 0.827 | Yes, CRD (2014) EFSA (2018) |
| Silty clay loam | 0.70 | 7.0 | - | - | 0.722 | 104 | 0.922 | Yes, CRD (2014) EFSA (2018) |
| Sandy loam | 0.81 | 6.9 | - | - | 0.720 | 89 | 1.016 | Yes, CRD (2014) EFSA (2018) |
| Geometric mean (n = 4) | | | | | 0.754 | 83 | | |
| Arithmetic mean (n = 4) | | | | | 0.756 | 89 | 0.916 | |
| pH dependence | | | No | | | | | |

a) Measured in $CaCl_2$ solution

## Table 8.5-3: Summary of soil adsorption/desorption for the aquatic metabolites of mefentrifluconazole

| Estimated adsorption coefficients for the aquatic metabolites of mefentrifluconazole [a)] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Metabolite name** | **OC %** | **Soil pH** | **$K_d$ [mL $g^{-1}$]** | **$K_{doc}$ [mL $g^{-1}$]** | **$K_F$ [mL $g^{-1}$]** | **$K_{Foc}$ [mL $g^{-1}$]** | **1/n** | **Evaluated on EU level** |
| M750F003 | n.a. | n.a. | - | - | - | 597.6 | n.a. | Yes, EFSA (2018) |
| M750F005 | n.a. | n.a. | - | - | - | 7863 | n.a. | Yes, EFSA (2018) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| M750F006 | n.a. | n.a. | - | - | - | 4919 | n.a. | Yes, EFSA (2018) |
| M750F007 | n.a. | n.a. | - | - | - | 3938 | n.a. | Yes, EFSA (2018) |
| M750F008 | n.a. | n.a. | - | - | - | 17240 | n.a. | Yes, EFSA (2018) |
| pH dependence | | | n.a. | | | | | |

n.a. not available

a) Adsorption coefficients ($K_{oc}$) were estimated for metabolites of BAS 750 F that occurred in studies with BAS 750 F in aqueous systems. QSAR method implemented in the KocWIN (EPISuite) tool was used.

### 8.5.2 Sulfur

A brief summary of adsorption data for sulfur and sulfate relevant for subsequent exposure and risk assessments is obtained from the EFSA Scientific Report (2008) 221 for sulfur:

Elemental sulfur is not adsorbed to soil surfaces by the normal electrostatic forces common to other chemical pesticides. However, the oxidation product (sulfate, $SO_4^{2-}$) can interact with soil surfaces by anion adsorption. The movement of sulfate is influenced by anion exchange capacity, solution sulfate concentration, pH, competition with other anions, notably phosphate, calcium addition (co-precipitation) and moisture content.

~~A study for the determination of sulfur adsorption to soil was submitted by the applicant (Keller, W, 1990 [3]). As long as this study was not valid due to technical problems, the rapporteur Member State used a number of available equations in order to determine the most conservative $K_{OM}$ and $K_{OC}$, estimated from $K_{OW}$ and water solubility. This led to a $K_{OC}$ value of 1949.8 mL/g.~~

According to EFSA Conclusion (2023) on sulfur, the adsorption of sulfur was determined from the water solubility (16 µg/L). This led to a $K_{OC}$ value of 3615.3 mL/g indicating sulfur immobility in soil.

**Table 8.5-4: Agreed EU adsorption endpoints for sulfur according to EFSA Scientific Report (2008) 221, sulfur**

| Compound | Parameter | Endpoint |
|---|---|---|
| Sulfur | $K_{OC}^{ads}$ [mL/g] | 3615.3 |
| | 1/n [-] | no data<br>(worst-case default value of 1.0 used) |

### 8.5.3 Columnleaching (KCP 9.1.2.1)

#### 8.5.3.1 Mefentrifluconazole and its metabolites

Column leaching studies were not performed for mefentrifluconazole and its metabolites.

#### 8.5.3.2 Sulfur

Column leaching studies were not performed for sulfur.

### 8.5.4 Lysimeter studies (KCP 9.1.2.2)

#### 8.5.4.1 Mefentrifluconazole and its metabolites

Lysimeter studies were not performed for mefentrifluconazole, and its metabolites as based on $PEC_{gw}$ calculations no leaching is expected.

~~[3] Keller, W; 1990: Soil adsorption / desorption study of sulfur (Study no.: 3007). Study no.: 3007, Company no.: 90/0557.~~

### 8.5.4.2 Sulfur

According to the EFSA Scientific Report (2008) 221 (sulfur) only the results of a lysimeter study performed in England have been presented in the list of endpoints. Sulfur under grassland system using eight undisturbed sandy loam soil (pH 6.6, OC 12.7 %g/kg) lysimeter monoliths under field conditions in an experimental farm in Bedfordshire (England) have been examined. Leaching losses and plant uptake of sulfur were measured in lysimeters encased in glass fibre reinforced plastic cylinders (79 cm internal diameter and 60 cm in depth) receiving elemental sulfur or sulfate fertilizers over a three-year period.

The treatments used were control (i.e., no sulfur fertilizer), bentonite clay/elemental Sulfur 10/90 mixture (BS), micronized elemental sulfur (‘Thiovit’, containing 80% elemental sulfur of particle size 5-8 mm) (MS), and ammonium sulfate containing 24% sulfatesulfur (AS). Each treatment was applied in the solid form to the soil surface at 50 kg/hectare and replicated in two lysimeters.

In addition to the existing herbage, rye grass was sawn at 5 kg/ha in autumn and again next spring at 25 kg/ha so that by next summer the vegetation had developed into a mixed herbage. The above-ground vegetation was harvested twice a year and their dry weight determined after drying at 80°C for 24 hours. Water drained from the lysimeters by gravity into 25 litre polythene bottles, and volumes of drainage water were recorded, and samples taken for analysis every 2–4-week intervals.

Atmospheric deposition of sulfur varied between 6.7-7.8 kg S/ha/year. Leaching losses of sulfur ranged from 35 kg/ha in the control to 83 kg/ha in the AS treatment over three years, with dissolved organic sulfur accounting for 6-10% of the sulfur leached. In the first year, 7, 26 and 72% of the applied sulfur was lost to drainage water in the BS, MS and AS treatments, respectively, and the percentages increased to 33, 75 and 96% by the end of the third year.

The annual rainfall during the three years were: 474, 614, 758 mm. The average drainage were: 119, 237, 287 mm per year.

Differences in sulfur uptake by herbage in the harvests were insignificant.

Over three years, total sulfur outputs exceeded total sulfur inputs in all the three treatments (Table 8.5-5). The control and AS treatments showed the highest sulfur deficit (34-35 kg/ha). Deficit from the MS treatment (‘Thiovit’ containing 80% elemental sulfur) showed a deficit of 23 kg/ha, and BS treatment showed a deficit of 7 kg/ha. The deficits indicate a depletion of soil sulfur, probably through net mineralization of organic sulfur. The results confirm that sulfate was highly mobile and prone to leaching under the experimental conditions, whereas the slow-release characteristics of elemental sulfur (in ‘Thiovit’ and with bentonite clay), led to smaller leaching losses.

**Table 8.5-5: Input and output balance of S (kg/ha) over the three years of the lysimeter experiment stated in the addendum to the DAR (2008) for sulfur**

| Treatment | Deposition | Fertiliser | Plant uptake | Leaching | | Balance | Fertiliser recovery [%][a] |
|---|---|---|---|---|---|---|---|
| | | | | $SO_4^{2-}$-S | Soluble organic S | | |
| Control | 22.0 | 0 | 20.7 | 31.5 | 3.5 | -33.7 | - |
| BS | 22.0 | 50.0 | 27.7 | 47.4 | 4.1 | -7.2 | 47 |
| MS | 22.0 | 50.0 | 22.5 | 68.0 | 4.8 | -23.3 | 79 |
| AS | 22.0 | 50.0 | 23.8 | 78.0 | 5.2 | -35.0 | 102 |

a: fertiliser recovered in plant uptake and leaching losses, calculated as the difference in plant uptake and leaching losses between the +S treatments and the control, and expressed as a percentage of the fertiliser S added.

The RMS considers that only the micronized elemental sulfur (MS) form used in this study could be compared to “80% Sulfur WG” products, due to its composition (‘Thiovit’, containing 80% elemental sulfur), even if its particle size (5-8 mm) is higher than the one of other “80% Sulfur WG” products (71 to 500 µm).

## 8.5.5 Field leachingstudies (KCP 9.1.2.3)

### 8.5.5.1 Mefentrifluconazole and its metabolites

Field leaching studies were not performed for mefentrifluconazole and its metabolites, as based on $PEC_{gw}$ calculations no leaching is expected.

### 8.5.5.2 Sulfur

No studies submitted and not required as sufficient information on the leaching behaviour of sulfur and sulfate is available from lysimeter studies presented.

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

Studies on degradation in water/sediment systems with the formulation were not performed, since it is possible to extrapolate from data obtained with the active substance.

### 8.6.1 Mefentrifluconazole and its metabolites

All information on mefentrifluconazole provided in this chapter was previously evaluated in the frame of the EU review of mefentrifluconazole and were summarized from the EFSA Conclusion on the active substance [*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*].

EU agreed endpoints for the metabolite 1,2,4-triazole originate from CRD evaluation [*CRD (2014): Triazole Derived Metabolite: 1,2,4-Triazole. Proposed revision to DT50 Summary, Scientific Evaluation and Assessment July 2011, revised September 2011 (after comments from MS and EFSA) and further revised January 2013 (minor clarifications added post-commenting) 24 Oct. 2014*]. All relevant endpoints for 1,2,4-triazole were included in the EFSA Conclusion on the active substance mefentrifluconazole as well.

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

| **Mefentrifluconazole distribution (max. sediment 75.7% after 28 days)** | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Persistence endpoints** | | | | | | | | | | | |
| **Water / sediment system** | **pH water phase** | **pH sed** [a)] | **t. °C** | **$DT_{50}$ /$DT_{90}$ whole system** | **St. ($\chi^2$)** | **$DT_{50}$ /$DT_{90}$ water** | **St. ($\chi^2$)** | **$DT_{50}$ /$DT_{90}$ sediment** | **St. ($\chi^2$)** | **Kinetic model** | **Evaluated on EU level** |
| Berghäuser Altrhein [c] | 7.4, 8.4 [d)] | 7.1, 7.0 [d)] | 20 | 122.2/444.0 | 2.0 | 6.6 [g)]/21.9 | 6.4 | 224.8/746.7 | 4.0 | DFOP FOMC SFO | Yes, EFSA (2018) |
| Ranschgraben [c] | 7.3, 7.1 [d)] | 5.2, 6.0 [d)] | 20 | 213.1/785.6 | 1.3 | 7.9 [g)]/26.2 | 6.7 | 395.6/>1000 | 1.0 | HS FOMC SFO | Yes, EFSA (2018) |
| **Modeling endpoints** | | | | | | | | | | | |
| **Water / sediment system** | **pH water phase** | **pH sed** [a)] | **t. °C** | **Modeling $DegT_{50}$ whole system** [e)] | **St. ($\chi^2$)** | **Modeling $DisT_{50}$ water** [f)] | **St. ($\chi^2$)** | **Modeling $DisT_{50}$ sediment** [f)] | **St. ($\chi^2$)** | **Method of calculation** | **Evaluated on EU level** |
| Berghäuser Altrhein[c)] | 7.4, 8.4 [d)] | 7.1, 7.0 [d)] | 20 | 125.5 | 2.8 | 6.6 [g)] | 6.4 | 224.8 | 4.0 | SFO FOMC | Yes, EFSA (2018) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ranschgraben [c] | 7.3, 7.1[d)] | 5.2, 6.0[d)] | 20 | 212.8 | 2.7 | 7.9 [g)] | 6.7 | 395.6 | 1.0 | SFO FOMC | Yes, EFSA (2018) |
| Geometric mean at 20ºC [b)] | | | | 163.4 | | 7.2 | | 298.2 | | | |

a) Measured in $CaCl_2$ solution
b) Normalised using a Q10 of 2.58
c) Residues from the three different label experiments (chlorophenyl-, triazole- and trifluoromethylphenyl-label) were considered as replicates
d) pH at field sampling from two different sampling events
e) Degradation rate
f) Dissipation rate
g) Calculated as $DT_{50} = DT_{90}/3.32$

**Table 8.6-2: Summary of observed metabolites**

| **Compound** Observed in… | Maximum observed occurrence in compartments [%] | Evaluated on EU level |
|---|---|---|
| **M750F001 (1,2,4-triazole)** Water/sediment system | Max in total system: 15.1% after 100 days<br>Max in water: 10.2% after 100 days<br>Max in sediment: 4.9% after 100 days<br>kinetic formation fraction (kf/kdp): not calculated<br>No $DT_{50}$ was derived from parent studies | Yes, EFSA (2018) |
| **M750F003** Water/sediment system | Max in total system: 8.5% (mean of replicates) after 100 days<br>Max in water: 3.8% after 100 days<br>Max in sediment: 5.4% after 100 days<br>kinetic formation fraction (kf/kdp): not calculated<br>No $DT_{50}$ was derived from parent studies | Yes, EFSA (2018) |
| **M750F005** Aqueous photolysis study | Max in water: 32.2% after 6 days | Yes, EFSA (2018) |
| **M750F006** Aqueous photolysis study | Max in water: 30.7% after 9 days | Yes, EFSA (2018) |
| **M750F007** Aqueous photolysis study | Max in water: 43.9% after 15 days | Yes, EFSA (2018) |
| **M750F008** Aqueous photolysis study | Max in water: 7.3% after 13 days | Yes, EFSA (2018) |

### 8.6.2 Sulfur

No study submitted and not considered to be required based on the following justifications.

In the DAR (2008) the following justification of non-submission was provided:

Elemental sulfur occurs abundantly in nature, and it is constantly exposed to all the three environmental compartments (land, water and air). It is stable under sterile conditions but readily undergoes degradation through oxidative or reductive processes under aerobic or anaerobic conditions by specific microbial organisms to sulfate ions ($SO_4^{2-}$) or sulfides (-S-), respectively, both of which in turn are abundant in nature (see the sulfur cycle in Figure 8.6-1). In simulated sunlight, elemental sulfur has been shown in a laboratory experiment to undergo rapid photo-degradation at room temperature with a half-life of 4.25 hours (Redeker, J; 1991 [4]).

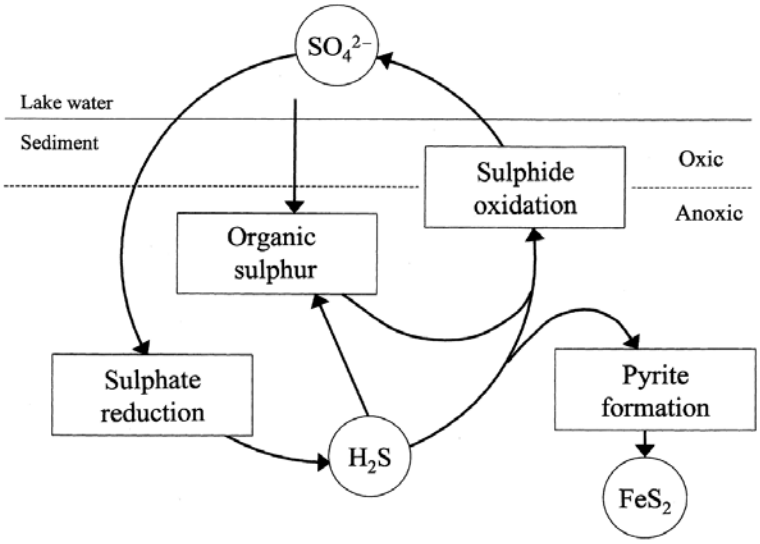



**Figure 8.6-1: Schematic presentation of the sulfur cycle in freshwater sediments**

In the EFSA Scientific Report (2008) 221 of sulfur the following evaluation was given:

Justifications for not providing water/sediment studies were presented by the applicants and considered acceptable by the peer review.

Taking into consideration that sulfur, when entering an aquatic system is expected to preferentially adsorb to sediment and then be oxidised, the rapporteur Member State questioned in the DAR, if a water/sediment study would be necessary for a better understanding of its behaviour and oxidation rate of sulfur in the sediment system. The view of the Member State experts was that the cycle of sulfur in the environment is well understood, and consequently it was agreed that it was not necessary to require data to address the route and rate of degradation of sulfur in natural aquatic systems.

[4] Redeker, J; 1991: Determination of the light stability of sulphur and its stability against metals. Report no; 3262; 91/11100

## 8.7 Predicted Environmental Concentrations in soil ($PEC_{soil}$) (KCP 9.1.3)

| | |
|---|---|
| zRMS Comments: | The submitted calculations of $PEC_{SOIL}$ for active substance mefentrifluconazole, its metabolite 1,2,4-triazole and active substance sulfur were accepted.<br>Applicant calculated the $PEC_{SOIL}$ values for active substances mefentrifluconazole and sulfur using the $PEC_{SOIL}$ Calculator (Excel).<br>The values of $PEC_{SOIL}$ for metabolite 1,2,4-triazole were calculated with the model ESCAPE v2.0. Evaluator calculated the $PEC_{SOIL}$ values for metabolite 1,2,4-triazole using the $PEC_{SOIL}$ Calculator (Excel). The obtained values do not differ from those presented by the Applicant. The endpoints used for soil exposure assessment are consistent with list of endpoints for active substances and metabolite.<br>The crop interception of 80% was taken into consideration.<br><br>The initial and accumulative (if relevant) $PEC_{SOIL}$ for active substances and their metabolites are presented in following table: |

| **Parent/Metabolite** | **Winter and spring cereals** | |
|---|---|---|
| | **PECs, ini** | **$PEC_{accumulation}$** |
| | **mg a.s./kg** | |
| **mefentrifluconazole** | 0.053 | 0.092 |
| **1,2,4-triazole** | < 0.001 | < 0.001 |
| **sulfur** | 1.274 | - |

| | |
|---|---|
| | The density of formulation, based on Section 2: Physical and chemical properties, of 1.360 g/mL should be used in $PEC_{SOIL}$ assessment of formulation. The Applicant has used the density of 1.300 g/mL and the assessment was corrected. Calculation of $PEC_{SOIL}$ for formulation was recalculated by evaluator and the $PEC_{SOIL}$ is 1.451 mg/kg.<br><br>These values will be used in further risk assessment. |

### 8.7.1 Justification for new endpoints

**Mefentrifluconazole**

EU agreed endpoints were used for $PEC_{soil}$ calculations for mefentrifluconazole (EFSA, 2018) and for its metabolite 1,2,4-triazole (*CRD (2014): Triazole Derived Metabolite: 1,2,4-Triazole. Proposed revision to $DT_{50}$ Summary, Scientific Evaluation and Assessment July 2011, revised September 2011 (after comments from MS and EFSA) and further revised January 2013 (minor clarifications added post-commenting))*. All relevant endpoints for 1,2,4-triazole were included in the EFSA Conclusion on the active substance mefentrifluconazole as well.

**Sulfur**

EU agreed endpoints refer to those stated in the EU review of sulfur (*EFSA Scientific Report (2008) 221 for sulfur*) were generally used for $PEC_{soil}$ calculations of sulfur.

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

**Table 8.7-1: Input parameters related to application for $PEC_{soil}$ calculations to cereals**

| | | |
|---|---|---|
| **Use No.** | | **1-9** |
| **Crop** | | **Winter and spring cereals** |
| **BBCH stage** | | **30** |
| Application rate (g a.s/ha) | Mefentrifluconazole | 100 |
| | Sulfur | 2400 |
| Number of applications [-] / interval [d] | | 2 / 14* |
| Crop Interception [%] | | 80 |
| Depth of soil layer for $PEC_{max}$ [cm] | | 5 |

| | |
|---|---|
| Depth of soil layer (relevant for plateau concentration) [cm] | 20 (mixing depth for annual crops) |
| Models used for calculation | EXCEL (mefentrifluconazole, sulfur),<br>ESCAPE (1,2,4-triazole) |

* Twofold application covers single application as risk envelope approach.

### 8.7.2.1 Mefentrifluconazole and its metabolite

| | |
|---|---|
| zRMS Comments: | The submitted calculations of $PEC_{SOIL}$ for active substance mefentrifluconazole and its metabolite 1,2,4-triazole were accepted. |

| | |
|---|---|
| Reference: | CP 9.1.3/1 |
| Report | Predicted environmental concentrations of BAS 750 F - mefentrifluconazole and its metabolites in soil, groundwater, surface water and sediment following application to cereals in Central and Southern Europe.,<br>Bouallegue A, 2022<br>report No EU-CALC-2766<br>DocID2022/2057625<br>Authority registrationNo |
| Guideline(s): | FOCUS Kinetics (2006) SANCO/10058/2005 v 2.0<br>FOCUS (2014) Generic guidance for FOCUS Kinetics, v 1.1<br>FOCUS Groundwater (2000) Sanco/321/2000<br>FOCUS Groundwater (2009) Sanco/13144/2010 v3 of 2014<br>FOCUS Groundwater (2021) GG for Tier 1 GW Assessments, v2.3 |
| Deviations: | No |
| GLP: | No, not compulsory to PEC reports |
| Acceptability: | Yes |

**Table 8.7-2: Input parameters for mefentrifluconazole and its metabolite for $PEC_{soil}$calculations**

| Compound | Mefentrifluconazole | 1,2,4-triazole | Value in accordance to EU endpoint y/n Reference |
|---|---|---|---|
| Molecular weight [g/mol] | 397.8 | 69.1 | Yes<br>EFSA (2018) |
| Max. occurrence [%] | - [a] | 5.1<br>(DAT 90, laboratory, dark aerobic conditions) | Yes<br>EFSA (2018) |
| $DT_{50}$ [d] | 846.6<br>(SFO, worst-case from field studies, non-normalized, n = 6) * | 11.0 (fast)<br>346.6 (slow)<br>(DFOP [b], worst-case from field studies (28.1), non-normalized, n = 4) ** | Yes<br>* EFSA (2018)<br>** CRD (2014) |

DAT = days after treatment
[a] Not relevant for parent substance
[b] Corresponding DFOP parameters: $k_1$ of 0.0632$d^{-1}$, $k_2$ of 0.002 $d^{-1}$ and g of 0.5732

**$PEC_{soil}$ of mefentrifluconazole**

**Table 8.7-3: PECsoil for mefentrifluconazole following application of 2 x 100 g a.s./ha to cereals**

| $PEC_{soil}$ [mg/kg] | | Multiple applications | |
|---|---|---|---|
| | | Cereals | |
| | | Actual | TWA |
| Initial | | 0.053 | - |
| Short term | 24h | 0.053 | 0.053 |
| | 2d | 0.053 | 0.053 |
| | 4d | 0.053 | 0.053 |
| Long term | 7d | 0.053 | 0.053 |
| | 14d | 0.052 | 0.053 |
| | 21d | 0.052 | 0.053 |
| | 28d | 0.052 | 0.052 |
| | 50d | 0.051 | 0.052 |
| | 100d | 0.049 | 0.051 |
| Plateau concentration (20 cm) after 10 years | | 0.039 | |
| $PEC_{accumulation}$ ($PEC_{act}$ + $PEC_{soil\ plateau}$) | | 0.092 | |

**$PEC_{soil}$ of metabolite 1,2,4-triazole**

Only global maximum values are reported, which can be considered as worst-case estimates of short-term and long-term exposure.

**Table 8.7-4: PECsoil for 1,2,4-triazole following application of 2 x 100 g a.s./ha to cereals**

| $PEC_{soil}$ [mg/kg] | Multiple applications |
|---|---|
| | Cereals |
| Initial | <0.001 |
| Plateau concentration (20 cm) after 10 years | <0.001 |
| $PEC_{accumulation}$ ($PEC_{act}$ + $PEC_{soil\ plateau}$) | <0.001 |

### 8.7.2.2 Sulfur

According to the EFSA Scientific Report (2008) 221 for sulfurno metabolites are considered to be relevant for exposure and risk assessment in soil. Sulfur transformation in soil is governed by oxidation. Main transformation products are sulfates which are part of sulfur cycle. Furthermore, as sulfur is a mineral the consideration of metabolites is not applicable. Therefore, the calculation of $PEC_{soil}$ for relevant metabolites is not required.

**Table 8.7-5: Input parameters for sulfur for $PEC_{soil}$ calculations**

| Compound | Sulfur | Value in accordance with EU endpoint y/n Reference |
|---|---|---|
| Molecular weight [g mol$^{-1}$] | 256.6 | Yes<br>EFSA (2008), 221 |
| $DT_{50}$ [d]* | - | - |

* DT50 is not applicable to PECsoil calculation as sulfur as an active substance is a mineral. No degradation is considered for estimating the PECsoil.

### Method of PECsoil calculation

The maximum predicted environmental concentrations in soil ($PEC_{soil,\ max}$) were calculated for the active ingredient sulfur according to FOCUS recommendations.

The maximum $PEC_{soil}$ following multiple applications and not accounting for transformation processes was calculated according to Equation 8.7-1.

**Equation 8.7-2: Global maximum PECsoil of sulfur after multiple applications without degradation**

$$PEC_{soil,max} = \frac{\sum_{i=1}^{n} A_i \cdot (1 - f_{int.i})}{100 \cdot d \cdot bd} \qquad \text{[mg/kg dry weight]}$$

| | | | |
|---|---|---|---|
| where | $PEC_{soil,max}$ | maximum concentration in soil after *n* applications | [mg/kg d.w.] |
| | $A_i$ | application rate at application *i* | [g/ha] |
| | $f_{int,i}$ | fraction intercepted by crop canopy at application *i* | [-] |
| | $d$ | the soil depth | [cm] |
| | bd | Bulk density | [g/cm$^{-3}$] |

**$PEC_{soil}$ of Sulfur**

**Table 8.7-6: $PEC_{soil}$ for sulfur following application of 2 x 2400 g a.s. ha$^{-1}$ to cereals**

| $PEC_{soil}$ [mg kg$^{-1}$] | Multiple applications |
|---|---|
| $PEC_{soil,\ max}$ | 1.274 |
| Plateau concentration (20 cm) after 10 years | - |
| $PEC_{accumulation}$ ($PEC_{act}$ +$PEC_{soil\ plateau}$) | - |

### 8.7.2.3 $PEC_{soil}$ of BAS 768 00 F

Maximum $PEC_{soil}$ was calculated for the formulation BAS 768 00 F based on a worst-case scenario, which leads to the highest effective soil load of the formulation. A volumetric application rate of 4 L ha$^{-1}$ for the use in cereals in combination with 80% interception corresponding to the earliest possible growth stage as proposed by the GAP (BBCH 30) was considered for the calculations. The $PEC_{soil,max}$ was calculated over 5 cm soil depth and assumed a soil bulk density of 1.5 g cm$^{-3}$.

**Table 8.7-7: $PEC_{soil}$for the formulation BAS 768 00 F following single* application**

| Crop | cereals |
|---|---|
| Application rate (L/ha) | 4.0 |
| Formulation density (g/L) | ~~1300~~ 1360 |
| Application rate (g/ha) | ~~5200~~ 5440 |
| Crop interception (%) | 80 |
| Soil depth** (cm) | $PEC_{ini}$ (mg product/kg) |
| 5 | ~~1.387~~ 1.451 |
| ~~Application rate (L/ha)~~ | ~~1.5~~ |

* Evaluation conducted for a single application as the specific effect of the formulation is of acute nature. It is thus not expected that multiple applications have a combined effect.

** Soil bulk density of 1.5 g cm$^{-3}$ used for calculation.

## 8.8 Predicted Environmental Concentrations in groundwater ($PEC_{gw}$) (KCP 9.2.4)

| | |
|---|---|
| zRMS Comments: | The submitted calculations of PECgw for active substance mefentrifluconazole, its metabolite 1,2,4-triazole and active substance sulfur were accepted.<br>Modelling was conducted using FOCUS-PEARL, FOCUS-PELMO and FOCUS MACRO models for a twofold application to winter and spring cereals.<br><br>**Mefentrifluconazole:**<br>The maximum PECgw values are below the trigger value of 0.1 µg/L in all tested scenarios and models.<br><br>**1,2,4-triazole:**<br>The maximum PECgw values are below the trigger value of 0.1 µg/L in all tested scenarios and at all Tiers with the maximum PECgw of 0.066 µg $L^{-1}$ (Tier 1, spring cereals, Hamburg, PEARL, BBCH 30).<br><br>**Sulfur:**<br>The parametric drinking water limit of 0.1 µg/L is not appropriate to sulfur since it is an inorganic compound. PECgw values are compared with the indicative parameter of 250 mg/L set for sulfate in the current Drinking Water Directive (Council Directive 98/83/EC). The PECgw of sulfates stayed clearly below the drinking water indicator parameter of 250 mg/L in all tested scenarios and models. |

### 8.8.1 Justification for new endpoints

**Mefentrifluconazole**

EU agreed endpoints were used in $PEC_{gw}$ calculations for mefentrifluconazole (EFSA, 2018) and for its metabolite 1,2,4-triazole (CRD, 2014; EFSA, 2018).

**Sulfur**

According to the EFSA Scientific Report (2008) 221 for sulfur, it is not of concern for the contamination in groundwater, but that the potential for groundwater contamination for sulfates needed to be addressed, as they are highly mobile in soil. Therefore, only sulfate was considered relevant for exposure and risk assessment in groundwater. 100 % of sulfur applied to soil is assumed to be oxidized to sulfates. No specific transformation rate of sulfur to sulfates was considered. Oxidation of sulfur was assumed to happen immediately after application to soil.

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

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

| | | | | |
|---|---|---|---|---|
| Use No. | 1- 9 | | | |
| Crop | cereals | | | |
| FOCUSgw crop | Winter Cereals | | Spring Cereals | |
| Growth stage (BBCH) | 30 | 59 | 30 | 59 |
| Application rate [g a.s. $ha^{-1}$] | Mefentrifluconazole:100<br>Sulfur: 2400 | | | |
| Number of applications/interval [d] | 2 / 14 | 2 / 14 | 2 / 14 | 2 / 14 |
| Crop interception [%] | 80 | 90 | 80 | 90 |
| Frequency of application | annual | | | |
| Models used for calculation | FOCUS PEARL v5.5.5, FOCUS PELMO v6.6.4, FOCUS MACRO v5.5.4 | | | |

**Table 8.8-2: Application dates used for groundwater risk assessment**

| Crop | Scenario | Application dates (absolute) BBCH 30 | | Application dates (absolute) BBCH 59 | |
|---|---|---|---|---|---|
| | | 1st appl. | 2nd appl. | 1st appl. | 2nd appl. |
| Winter cereals | Châteaudun | 15th April (105) [a] | 29th April (119) [a] | 15th May (135) [a] | 29th May (~~159~~ 149) [a] |
| | Hamburg | 04th May | 18th May | 17th May | 31st May |
| | Jokioinen | 14th May | 28th May | 10th June | 24th June |
| | Kremsmünster | 24th April | 08th May | 21st May | 04th June |
| | Okehampton | 21st April | 05th May | 30th April | 14th May |
| | Piacenza | 19th Mar | 02nd April | 24th April | 08th May |
| | Porto | 30th Jan | 13th Feb | 13th April | 27th April |
| | Sevilla | 06th Jan | 20th Jan | 12th Feb | 26th Feb |
| | Thiva | 18th Jan | 01st Feb | 14th Mar | 28th Mar |
| Spring cereals | Châteaudun | 16th April (106) [a] | 30th April (120) [a] | 25th May (145) [a] | 08th June (159) [a] |
| | Hamburg | 28th April | 12thMay | 21st May | 04th June |
| | Jokioinen | 05thJune | 19th June | 15th June | 29th June |
| | Kremsmünster | 27th Apr | 11thMay | 21st May | 04th June |
| | Okehampton | 22nd Apr | 06thMay | 07th May | 21st May |
| | Porto | 16th April | 30th April | 25th May | 08th June |

[a] Julian day for FOCUS-MACRO calculations

### 8.8.2.1 Mefentrifluconazole and its metabolites

| | |
|---|---|
| zRMS Comments: | The PECgw assessment for active substance mefentrifluconazole and its metabolite 1,2,4-triazole was accepted.<br>The calculations were performed in accordance with FOCUS groundwater guidance.<br>The calculations were performed for the winter and spring cereals and the growth stages BBCH 30 and BBCH 59.<br>The PECgw calculations for the metabolite 1,2,4-triazole were performed at 4 Tiers and were accepted. |

| | |
|---|---|
| Reference: | CP 9.2.4.1/1 |
| Report | Predicted environmental concentrations of BAS 750 F - mefentrifluconazole and its metabolites in soil, groundwater, surface water and sediment following application to cereals in Central and Southern Europe,<br>Bouallegue A, 2022<br>report No EU-CALC-2766<br>DocID 2022/2057625<br>Authority registration No |
| Guideline(s): | FOCUS Kinetics (2006) SANCO/10058/2005 v 2.0<br>FOCUS (2014) Generic guidance for FOCUS Kinetics, v 1.1<br>FOCUS Groundwater (2000) Sanco/321/2000<br>FOCUS Groundwater (2009) Sanco/13144/2010 v3 of 2014<br>FOCUS Groundwater (2021) GG for Tier 1 GW Assessments, v2.3 |
| Deviations: | No |
| GLP: | No, not compulsory to PEC reports |
| Acceptability: | Yes |

The leaching assessment was conducted during the EU evaluation of mefentrifluconazole at four Tiers, in that the formation and degradation of 1,2,4-triazole was considered at different levels of complexity. In the EFSA conclusions only Tier 4 calculations were summarized. However, for sake of completeness, calculations of all tiers are included.

Tier 1 calculations were based on a single-compartment degradation model for 1,2,4 triazole. The degradation behaviour of 1,2,4-triazole is described with the DFOP kinetic model evaluation [*CRD (2014): Triazole Derived Metabolite: 1,2,4-Triazole. Proposed revision to DT50 Summary, Scientific Evaluation and Assessment July 2011, revised September 2011 (after comments from MS and EFSA) and further revised January 2013 (minor clarifications added post-commenting) 24 Oct. 2014*]. To represent conservative worst case, Tier 1 calculations were performed without considering the characteristic biphasic behaviour of 1,2,4-tiazole. In these calculations only the slow degrading compartment was considered and the conservative worst case formation fraction of 100% was assumed. The compartment model considered for the calculations is shown in Figure 8.8-1.

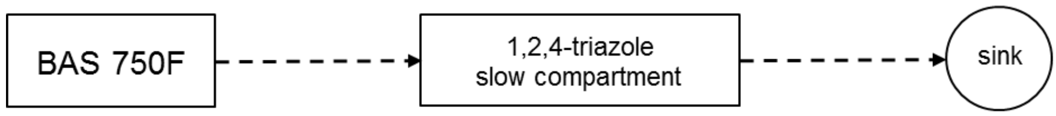



**Figure 8.8-1: Compartment model of BAS 750 F and 1,2,4-triazole considered for Tier 1 $PEC_{gw}$ calculations**

At Tiers 2-4 the biphasic degradation of 1,2,4-triazole was implemented for PECgw modeling as recommended by FOCUS. The fraction of the metabolite formed from the parent was divided into two compartments, i.e. one fast degrading and one slow degrading compartment. For each compartment, the corresponding rate of the DFOP model was considered as degradation endpoint. The formation fraction of the metabolite was multiplied with the parameter g of the DFOP model for the fast degrading compartment and with (1-g) for the slow degrading compartment. The total PECgw of the metabolite was calculated by adding the PECgw of the two compartments. In order to minimize the influence of non-linear sorption for the metabolite, the amount of active substance applied was doubled and the sum of the predicted concentrations of parent and metabolite in the leachate were divided by 2. The compartment model considered for the calculations is shown in Figure 8.8-2.

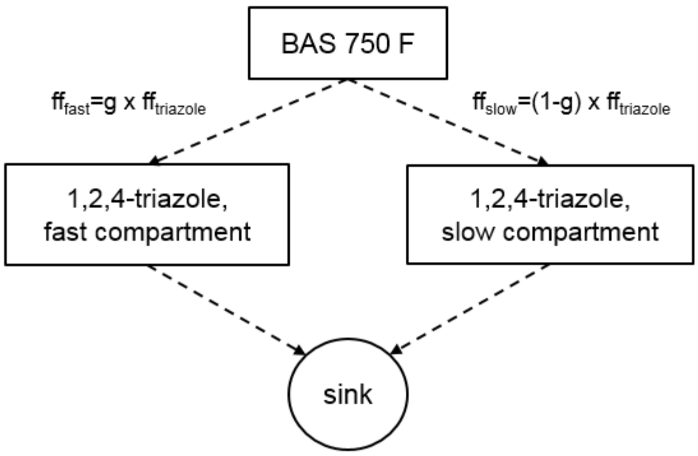



**Figure 8.8-2: Compartment model of BAS 750 F and 1,2,4-triazole considered for Tier 2-4 $PEC_{gw}$ calculations**

The leaching assessment for mefentrifluconazole and its metabolite 1,2,4-triazole was conducted according to the guidance of the FOCUS groundwater scenarios working group. Basic data in combination with standard FOCUS scenarios or standard national groundwater scenarios was used, and refined modelling approaches with refined parameters were implemented. In order to avoid complicated combinations of tiers, the following designation was used:

- Tier 1: calculations based on a single-compartment degradation model for 1,2,4-triazole. A worst-case formation fraction of 1.0 was used in the assessment
- Tier 2: the observed biphasic degradation of 1,2,4-triazole (DFOP kinetics) was implemented

as recommended by FOCUS. A worst-caseformationfractionof 1.0 wasused.

- Tier 3: the observed biphasic degradation of 1,2,4-triazole (DFOP kinetics) was implemented and a worst-case formation fraction of 0.65 was used.
- Tier 4: the observed biphasic degradation of 1,2,4-triazole (DFOP kinetics) was implemented and the arithmetic mean formation fraction of 0.40 was used.

The models FOCUS-PEARL 5.5.5, FOCUS-PELMO 6.6.4 and FOCUS-MACRO 5.5.4 were used to simulate the leaching behavior of BAS 750 F and its metabolite 1,2,4-triazole.

**Table 8.8-3: Input parameters for mefentrifluconazole and metabolite for $PEC_{gw}$ calculations**

| **Compound** | **Mefentrifluconazole** | **1,2,4-triazole** | **Value in accordance to EU endpoint y/n Reference** |
|---|---|---|---|
| Molecular weight [g $mol^{-1}$] | 397.8 | 69.1 | Yes<br>EFSA (2018) |
| Water solubility [mg $L^{-1}$] (20°C) | 0.81 | $7.00 \times 10^5$ | Yes<br>EFSA (2018) |
| Saturated vapor pressure [Pa] (20°C) | $3.2 \times 10^{-6}$ | 0.22 | Yes<br>EFSA (2018) |
| $DT_{50,soil}$ [d] | 200<br>(geometric mean of field studies, normalized, n = 6) | fast phase (DFOP): 1.68<br>slow phase (DFOP): 60.5<br>(geometric mean of field studies, normalized, n = 4)<br>g: 0.489 (arithmetic mean, n = 4) | Yes<br>EFSA (2018) |
| Formation fraction [-] (PEARL) | - [a] | Tier 1: 1<br><br>Tier 2:<br>Fast phase: 0.489<br>Slow phase: 0.511<br>(conservative assumption, biphasic behavior assuming a ff of 1.0)<br><br>Tier 3:<br>Fast phase: 0.318<br>Slow phase: 0.332 (Worst case (n = 4), biphasic behavior, assuming a ff of 0.65)<br><br>Tier 4:<br>Fast phase: 0.196<br>Slow phase: 0.204<br>(Geometric mean (n = 4), biphasic behavior, assuming a ff of 0.40) | Yes<br>DAR (2018)<br>EFSA (2018) |
| Transformation rate (PELMO) | Tier 1:<br>To 1,2,4-triazole (slow phase): 0.003466<br><br>Tier 2:<br>To 1,2,4-triazole (fast phase): 0.001695*<br>To 1,2,4-triazole (slow phase): 0.001771** | Tier 1:<br>To sink: 0.011457<br><br>Tier 2:<br>To sink (fast phase): 0.412588*<br>To sink (slow phase): 0.011457** | Calculated<br><br>* k × ff × g<br>** k × ff × (1-g) |

**Table 8.8-3: Input parameters for mefentrifluconazole and metabolite for $PEC_{gw}$ calculations**

| Compound | Mefentrifluconazole | 1,2,4-triazole | Value in accordance to EU endpoint y/n Reference |
|---|---|---|---|
| | Tier 3:<br>To 1,2,4-triazole (fast phase): 0.001102*<br>To 1,2,4-triazole (slow phase): 0.001151**<br><br>Tier 4:<br>To 1,2,4-triazole (fast phase): 0.000679*<br>To 1,2,4-triazole (slow phase): 0.000707** | Tier 3:<br>To sink (fast phase): 0.412588 *<br>To sink (slow phase): 0.011457**<br><br>Tier 4:<br>To sink (fast phase): 0.412588*<br>To sink (slow phase): 0.011457** | |
| Conversion factor (MACRO) | - [a] | Tier 1: 0.1737 **<br><br>Tier 2:<br>Fast phase: 0.0849 *<br>Slow phase: 0.0888 **<br><br>Tier 3:<br>Fast phase: 0.0552 *<br>Slow phase: 0.0577 **<br><br>Tier 4:<br>Fast phase: 0.0340 *<br>Slow phase: 0.0354 ** | Calculated<br><br>* $ff_{fast}$ x mmc<br>** $ff_{slow}$ x mmc |
| Kf,oc / Kf,om [mL $g^{-1}$] | 3455.6 / 2004.4<br>(geometric mean; n = 8) | 83 / 48<br>(geometric mean; n = 4) | Yes<br>EFSA (2018) |
| Freundlich exponent 1/n | 0.975<br>(arithmetic mean; n = 8) | 0.916<br>(arithmetic mean; n = 4) | Yes<br>EFSA (2018) |
| Soil adsorption option | pH-independent | pH-independent | Yes<br>EFSA (2018) |
| Plant Uptake [-] | 0 | 0 | Yes<br>EFSA (2018) |

[a]Not relevant for parent substance

## Tier 1

**Table 8.8-4: $PEC_{gw}$ for mefentrifluconazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 1**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| Spring cereals | Châteaudun | <0.001 | <0.001 | <0.001 |
| | Hamburg | <0.001 | <0.001 | - [a] |
| | Jokioinen | <0.001 | <0.001 | |
| | Kremsmünster | <0.001 | <0.001 | |
| | Okehampton | <0.001 | <0.001 | |
| | Porto | <0.001 | <0.001 | |
| Winter cereals | Châteaudun | <0.001 | <0.001 | <0.001 |
| | Hamburg | <0.001 | <0.001 | - [a] |

**Table 8.8-4: $PEC_{gw}$ for mefentrifluconazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 1**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| | Jokioinen | <0.001 | <0.001 | |
| | Kremsmünster | <0.001 | <0.001 | |
| | Okehampton | <0.001 | <0.001 | |
| | Piacenza | <0.001 | <0.001 | |
| | Porto | <0.001 | <0.001 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | <0.001 | <0.001 | |

[a] Scenario not defined for the model

**Table 8.8-5: $PEC_{gw}$ for mefentrifluconazole on winter and spring cereals at BBCH 59 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 1**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | <0.001 | <0.001 | <0.001 |
| | Hamburg | <0.001 | <0.001 | - [a] |
| | Jokioinen | <0.001 | <0.001 | |
| | Kremsmünster | <0.001 | <0.001 | |
| | Okehampton | <0.001 | <0.001 | |
| | Porto | <0.001 | <0.001 | |
| **Winter cereals** | Châteaudun | <0.001 | <0.001 | <0.001 |
| | Hamburg | <0.001 | <0.001 | - [a] |
| | Jokioinen | <0.001 | <0.001 | |
| | Kremsmünster | <0.001 | <0.001 | |
| | Okehampton | <0.001 | <0.001 | |
| | Piacenza | <0.001 | <0.001 | |
| | Porto | <0.001 | <0.001 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | <0.001 | <0.001 | |

[a] Scenario not defined for the model

**Table 8.8-6: $PEC_{gw}$ for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 1**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.009 | 0.005 | 0.011 |
| | Hamburg | **0.066** | 0.059 | - [a] |
| | Jokioinen | 0.019 | 0.018 | |
| | Kremsmünster | 0.041 | 0.038 | |
| | Okehampton | 0.054 | 0.051 | |
| | Porto | 0.033 | 0.045 | |
| **Winter cereals** | Châteaudun | 0.011 | 0.008 | 0.012 |
| | Hamburg | 0.058 | 0.054 | - [a] |
| | Jokioinen | 0.020 | 0.020 | |
| | Kremsmünster | 0.040 | 0.037 | |
| | Okehampton | 0.058 | 0.053 | |
| | Piacenza | 0.032 | 0.035 | |
| | Porto | 0.031 | 0.053 | |

**Table 8.8-4: PEC$_{gw}$ for mefentrifluconazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 1**

| Crop | Scenario | PEC$_{gw}$ [µg L$^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | 0.007 | 0.003 | |

[a] Scenario not defined for the model

**Table 8.8-7: PEC$_{gw}$ for 1,2,4-triazole on winter and spring cereals at BBCH 59 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 1**

| Crop | Scenario | PEC$_{gw}$ [µg L$^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.004 | 0.002 | 0.005 |
| | Hamburg | **0.028** | 0.025 | - [a] |
| | Jokioinen | 0.007 | 0.007 | |
| | Kremsmünster | 0.017 | 0.016 | |
| | Okehampton | 0.023 | 0.022 | |
| | Porto | 0.014 | 0.019 | |
| **Winter cereals** | Châteaudun | 0.004 | 0.003 | 0.003 |
| | Hamburg | 0.023 | 0.022 | - [a] |
| | Jokioinen | 0.007 | 0.008 | |
| | Kremsmünster | 0.015 | 0.015 | |
| | Okehampton | 0.023 | 0.023 | |
| | Piacenza | 0.013 | 0.015 | |
| | Porto | 0.012 | 0.022 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | 0.002 | 0.001 | |

[a] Scenario not defined for the model

## Tier 2

**Table 8.8-8: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 2**

| Crop | Scenario | PEC$_{gw}$ [µg L$^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.005 | 0.003 | 0.002 |
| | Hamburg | **0.034** | 0.031 | - [a] |
| | Jokioinen | 0.010 | 0.010 | |
| | Kremsmünster | 0.021 | 0.020 | |
| | Okehampton | 0.028 | 0.027 | |
| | Porto | 0.017 | 0.024 | |
| **Winter cereals** | Châteaudun | 0.006 | 0.004 | 0.003 |
| | Hamburg | 0.030 | 0.028 | - [a] |
| | Jokioinen | 0.010 | 0.011 | |
| | Kremsmünster | 0.020 | 0.020 | |
| | Okehampton | 0.030 | 0.028 | |
| | Piacenza | 0.016 | 0.018 | |
| | Porto | 0.016 | 0.027 | |

**Table 8.8-8: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 2**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | 0.003 | 0.002 | |

[a] Scenario not defined for the model

**Table 8.8-9: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 59 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 2**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.002 | 0.001 | 0.001 |
| | Hamburg | **0.014** | 0.013 | - [a] |
| | Jokioinen | 0.004 | 0.004 | |
| | Kremsmünster | 0.009 | 0.008 | |
| | Okehampton | 0.012 | 0.011 | |
| | Porto | 0.007 | 0.010 | |
| **Winter cereals** | Châteaudun | 0.002 | 0.002 | 0.002 |
| | Hamburg | 0.012 | 0.012 | - [a] |
| | Jokioinen | 0.004 | 0.004 | |
| | Kremsmünster | 0.008 | 0.008 | |
| | Okehampton | 0.012 | 0.012 | |
| | Piacenza | 0.007 | 0.008 | |
| | Porto | 0.006 | 0.012 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | 0.001 | <0.001 | |

[a] Scenario not defined for the model

## Tier 3

**Table 8.8-10: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 3**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.003 | 0.002 | 0.001 |
| | Hamburg | **0.020** | 0.018 | - [a] |
| | Jokioinen | 0.005 | 0.006 | |
| | Kremsmünster | 0.012 | 0.011 | |
| | Okehampton | 0.017 | 0.016 | |
| | Porto | 0.010 | 0.014 | |
| **Winter cereals** | Châteaudun | 0.003 | 0.002 | 0.001 |
| | Hamburg | 0.018 | 0.016 | - [a] |
| | Jokioinen | 0.006 | 0.006 | |
| | Kremsmünster | 0.012 | 0.011 | |
| | Okehampton | 0.018 | 0.017 | |
| | Piacenza | 0.010 | 0.011 | |

**Table 8.8-10: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 3**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| | Porto | 0.009 | 0.016 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | 0.002 | 0.001 | |

[a] Scenario not defined for the model

**Table 8.8-11: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 59 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 3**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.001 | <0.001 | <0.001 |
| | Hamburg | **0.008** | **0.008** | - [a] |
| | Jokioinen | 0.002 | 0.002 | |
| | Kremsmünster | 0.005 | 0.005 | |
| | Okehampton | 0.007 | 0.007 | |
| | Porto | 0.004 | 0.006 | |
| **Winter cereals** | Châteaudun | 0.001 | 0.001 | <0.001 |
| | Hamburg | 0.007 | 0.007 | - [a] |
| | Jokioinen | 0.002 | 0.002 | |
| | Kremsmünster | 0.005 | 0.005 | |
| | Okehampton | 0.007 | 0.007 | |
| | Piacenza | 0.004 | 0.005 | |
| | Porto | 0.004 | 0.007 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | <0.001 | <0.001 | |

[a] Scenario not defined for the model

## Tier 4

**Table 8.8-12: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 4**

| Crop | Scenario | $PEC_{gw}$ [µg $L^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| **Spring cereals** | Châteaudun | 0.001 | 0.001 | <0.001 |
| | Hamburg | **0.011** | 0.010 | - [a] |
| | Jokioinen | 0.003 | 0.003 | |
| | Kremsmünster | 0.007 | 0.006 | |
| | Okehampton | 0.009 | 0.009 | |
| | Porto | 0.005 | 0.008 | |
| **Winter cereals** | Châteaudun | 0.002 | 0.001 | <0.001 |
| | Hamburg | 0.010 | 0.009 | - [a] |
| | Jokioinen | 0.003 | 0.003 | |
| | Kremsmünster | 0.006 | 0.006 | |
| | Okehampton | 0.010 | 0.009 | |

**Table 8.8-12: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 30 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 4**

| Crop | Scenario | PEC$_{gw}$ [µg L$^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| | Piacenza | 0.005 | 0.006 | |
| | Porto | 0.005 | 0.009 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | 0.001 | 0.001 | |

[a] Scenario not defined for the model

**Table 8.8-13: PECgw for 1,2,4-triazole on winter and spring cereals at BBCH 59 (with FOCUS PEARL 5.5.5, PELMO 6.6.4 and MACRO 5.5.4) Tier 4**

| Crop | Scenario | PEC$_{gw}$ [µg L$^{-1}$] | | |
|---|---|---|---|---|
| | | PEARL 5.5.5 | PELMO 6.6.4 | MACRO 5.5.4 |
| | Châteaudun | <0.001 | <0.001 | <0.001 |
| | Hamburg | **0.005** | 0.004 | |
| | Jokioinen | 0.001 | 0.001 | |
| **Spring cereals** | Kremsmünster | 0.003 | 0.003 | - [a] |
| | Okehampton | 0.004 | 0.004 | |
| | Porto | 0.002 | 0.003 | |
| | Châteaudun | <0.001 | <0.001 | <0.001 |
| | Hamburg | 0.004 | 0.004 | |
| | Jokioinen | 0.001 | 0.001 | |
| | Kremsmünster | 0.003 | 0.003 | |
| **Winter cereals** | Okehampton | 0.004 | 0.004 | |
| | Piacenza | 0.002 | 0.003 | - [a] |
| | Porto | 0.002 | 0.004 | |
| | Sevilla | <0.001 | <0.001 | |
| | Thiva | <0.001 | <0.001 | |

[a] Scenario not defined for the model

### Discussion and conclusions

The 80$^{th}$ percentiles of the predicted annual leachate concentrations of mefentrifluconazole were clearly below 0.001 µg L$^{-1}$ in all tested scenarios. The 80$^{th}$ percentiles of the predicted annual leachate concentrations of 1,2,4-triazole were below 0.1 µg L$^{-1}$ in all tested scenarios and at all Tiers with the maximum PECgw of 0.066 µg L$^{-1}$ (Tier 1, spring cereals, Hamburg, PEARL, BBCH 30).

Hence, the leaching of unacceptable amounts of substances following application of mefentrifluconazole to the crops intended in the GAP is highly unlikely.

### 8.8.2.2 Sulfur and Sulfates

| | |
|---|---|
| zRMS Comments: | The PECgw assessment for active substance sulfur was accepted.<br>~~The total amount of $SO_4^{2-}$ formed from applied sulfur within 20 years was calculated for higher application rate than proposed in GAP table, this is the worse case and it was accepted.~~<br>The total amount of $SO_4^{2-}$ formed from applied sulfur within 20 years for application rate proposed in GAP table was updated. The submitted value accepted.<br>According to EFSA Scientific Report (2008) 221, sulfur, 100% of sulfur applied to soil is assumed to be oxidised to sulfates. |

| | |
|---|---|
| Reference: | CP 9.2.4/2 |
| Report | Predicted environmental concentrations of Sulfur in soil, groundwater, surface water and sediment following application to cereals in Northern Europe,<br>Chatterjee, U., 2022<br>report No CALC-2764, SCA-22-0152<br>2022/2051938<br>Authority registrationNo |
| Guideline(s): | FOCUS (2007): Landscape And Mitigation Factors In Aquatic Risk Assessment. Vol. 1 and 2, FOCUS (2014): Generic guidance for FOCUS Kinetics v 1.1, FOCUS Degradation Kinetics (2006) SANCO/10058/2005 version 1.1 of December 2014, FOCUS Groundwater (2014) Generic Guidance for Tier 1 FOCUS Ground Water Assessments v 2.2., FOCUS Surface Water (2001) SANCO/4802/2001-rev.2 final (May 2003), FOCUS Surface Water (2015) Generic Guidance for FOCUS Surface Water Scenarios v1.4, FOCUS groundwater (2014): SANCO/13144/2010 v 3, Focus Groundwater Scenarios (2000) Sanco/321/2000 rev. 2, Guidance Document on Work-Sharing in the Northern Zone (2021) v 10.0 |
| Deviations: | No |
| GLP: | No, not compulsory to PEC reports |
| Acceptability: | Yes |

$PEC_{gw}$ calculations were performed on an annual average basis of the percolated water volumes for each scenario. An average $PEC_{gw}$ over 20 years was obtained for each scenario according toan equation in accordance with the North Zone guidance document.

**Equation 1 Average annual average $PEC_{gw}$ of sulfate over 20 years**

$$PEC_{gw} = \left(\frac{\sum_{i=1}^{n} A_i \cdot (1 - f_{int.i}) \cdot MW_{met} \cdot 20}{10 \cdot MW_{par} \cdot V_{percol}}\right) \quad [mg/L]$$

| | | | |
|---|---|---|---|
| where | $PEC_{gw}$ | annual average predicted environmental concentration of sulfates in groundwater | [mg/L] |
| | $A_i$ | application rate at application *i* of the active substance at time of appl. | [g/ha] |
| | $f_{int,i}$ | fraction intercepted by crop canopy at application*i* | [-] |
| | $MW_{met}$ | molecular weight of sulfate ($SO_4$) | [g/mol] |
| | $MW_{par}$ | molecular weight of sulfur (S) | [g/mol] |
| | 20 | years of application | [-] |
| | $V_{percol}$ | water volume percolated at 1 m depth over 20 years | [L/m[2]] |

*n* number of applications per year [-]

The potential $PEC_{gw}$ were calculated on basis of the percolated water volumes of the PELMO and PEARL FOCUS standard scenarios associated with the crops considered.

**Table 8.8-14: Characteristics of the nine FOCUS weather- and soil scenarios**

| Location | Annual average air temperature [°C] | Annual precipitation [mm] | Soil type | Organic Matter [%] |
|---|---|---|---|---|
| Châteaudun | 11.3 | 648* | silty clay loam | 2.4 |
| Hamburg | 9.0 | 786 | sandy loam | 2.6 |
| Jokioinen | 4.1 | 638 | loamy sand | 7.0 |
| Kremsmünster | 8.6 | 900 | loam/silt loam | 3.6 |
| Okehampton | 10.2 | 1038 | loam | 3.8 |
| Piacenza | 13.2 | 857* | loam | 1.7 |
| Porto | 14.8 | 1150 | loam | 6.6 |
| Sevilla | 17.9 | 493* | silt loam | 1.6 |
| Thiva | 16.2 | 500* | loam | 1.3 |

* includingirrigation

**PEC groundwater assessment:**

The model FOCUS-PELMO v6.6.4 and FOCUS-PEARL v5.5.5 with the FOCUS standard scenarios were considered for the potential leaching assessment. Sulfur is applied to winter cereals and spring cereals within a BBCH range from 30 to 59. Conservative crop interception values according to FOCUS are considered, i.e. 80% interception for BBCH 30. At tier 1 the simulations continued for 26 years, and applications of the parent compound started in the 1$^{st}$ year and ended in the 26$^{th}$ year. The results of the first 6 years were omitted in the assessment of the leaching potential.

**Table 8.8-15: Input parameters related to application for PECgw calculations for winter cereals and spring cereals**

| Crop | Growth stage [BBCH] | no. of applications | Minimum Interval [Days] | max. rate [kg a.s./ha] per treatment | min. crop interception fraction at no. [-] | Net soil deposit [kg a.s./ha] |
|---|---|---|---|---|---|---|
| Cereals | 30-59 | 2 | 14 | 2.4 | 0.8 | 0.96 |

**Table 8.8-16: Input parameters related to sulfur (sulfate) for $PEC_{gw}$ calculations**

| Parameter | Compound | Agreed EU endpoint of previous review* | Endpoints used for the PECgw calculations |
|---|---|---|---|
| Molecular weight (g/mol) | Sulfur ($S_8$)[1] | 256.6 / 8 = 32.065 | EU agreed |
| | Sulfate | ~~97.1~~ 96.1 | |
| Maximum formation fraction in soil (-) | Sulfate | not available | 1 (conservative assumption) |

* EFSA Scientific Report (2008) 221, sulfur and the Final Addendum to the DAR for sulfur (December 2008)

[1] One S molecule is used from Sulphur ($S_8$)to derive sulfate ($SO_4$)

**$PEC_{gw}$ results of sulfates**

**Table 8.8-17: Tier 1 FOCUS PELMO $PEC_{gw}$ of sulfate for use in winter cereals following application of 2 x 2.4 kg a.s./ha**

| Weather/Soil scenario | Percolate within 20 years ($V_{percol}$) [L/m$^2$] FOCUS PELMO 6.6.4 | Total amount of $SO_4^{2-}$ formed from applied sulfur within 20 years [kg/ha] | Annual average $PEC_{gw}$ [mg/L] FOCUS PELMO 6.6.4 |
|---|---|---|---|
| Châteaudun | 2806.66 | ~~2636.6~~ 57.54 | 2.049 |
| Hamburg | 5437.67 | ~~2636.6~~ 57.54 | 1.058 |
| Jokioinen | 4573.36 | ~~2636.6~~ 57.54 | 1.258 |
| Kremsmünster | 6104.18 | ~~2636.6~~ 57.54 | 0.942 |
| Okehampton | 8742.00 | ~~2636.6~~ 57.54 | 0.658 |
| Piacenza | 6487.59 | ~~2636.6~~ 57.54 | 0.887 |
| Porto | 10787.40 | ~~2636.6~~ 57.54 | 0.533 |
| Sevilla | 2393.43 | ~~2636.6~~ 57.54 | 2.403 |
| Thiva | 1951.15 | ~~2636.6~~ 57.54 | 2.948 |

**Table 8.8-18: Tier 1 FOCUS PELMO $PEC_{gw}$ of sulfate for use in spring cereals following application of 2 x 2.4 kg a.s./ha**

| Weather/Soil scenario | Percolate within 20 years ($V_{percol}$) [L/m$^2$] FOCUS PELMO 6.6.4 | Total amount of $SO_4^{2-}$ formed from applied sulfur within 20 years [kg/ha] | Annual average $PEC_{gw}$ [mg/L] FOCUS PELMO 6.6.4 |
|---|---|---|---|
| Châteaudun | 3621.15 | ~~2636.6~~ 57.54 | 1.588 |
| Hamburg | 5427.53 | ~~2636.6~~ 57.54 | 1.060 |
| Jokioinen | 4934.74 | ~~2636.6~~ 57.54 | 1.166 |
| Kremsmünster | 5880.49 | ~~2636.6~~ 57.54 | 0.978 |
| Okehampton | 8870.90 | ~~2636.6~~ 57.54 | 0.648 |
| Porto | 11707.40 | ~~2636.6~~ 57.54 | 0.491 |

**Table 8.8-19: Tier 1 FOCUS PEARL $PEC_{gw}$ of sulfate for use in winter cereals following application of 2 x 2.4 kg a.s./ha**

| Weather/Soil scenario | Percolate within 20 years ($V_{percol}$) [L/m$^2$] FOCUS PEARL 5.5.5 | Total amount of $SO_4^{2-}$ formed from applied sulfur within 20 years [kg/ha] | Annual average $PEC_{gw}$ [mg/L] FOCUS PEARL 5.5.5 |
|---|---|---|---|
| Châteaudun | 3136.26 | ~~2636.6~~ 57.54 | 1.834 |
| Hamburg | 5412.38 | ~~2636.6~~ 57.54 | 1.063 |
| Jokioinen | 4225.60 | ~~2636.6~~ 57.54 | 1.361 |
| Kremsmünster | 6624.87 | ~~2636.6~~ 57.54 | 0.868 |
| Okehampton | 8683.25 | ~~2636.6~~ 57.54 | 0.662 |
| Piacenza | 6695.82 | ~~2636.6~~ 57.54 | 0.859 |

| | | | |
|---|---|---|---|
| Porto | 10254.75 | ~~2636.6~~ 57.54 | 0.561 |
| Sevilla | -322.01 | ~~2636.6~~ 57.54 | * |
| Thiva | 1036.30 | ~~2636.6~~ 57.54 | 5.550 |

*no value due to negative percolate

**Table 8.8-20: Tier 1 FOCUS PEARL $PEC_{gw}$ of sulfate for use in spring cereals following application of 2 x 2.4 kg a.s./ha**

| Weather/Soil scenario | Percolate within 20 years ($V_{percol}$) [L/m²] FOCUS PELMO 6.6.4 | Total amount of $SO_4^{2-}$ formed from applied sulfur within 20 years [kg/ha] | Annual average $PEC_{gw}$ [mg/L] FOCUS PELMO 6.6.4 |
|---|---|---|---|
| Châteaudun | 3603.814 | ~~2636.6~~ 57.54 | 1.596 |
| Hamburg | 4622.522 | ~~2636.6~~ 57.54 | 1.244 |
| Jokioinen | 4522.30 | ~~2636.6~~ 57.54 | 1.272 |
| Kremsmünster | 6044.435 | ~~2636.6~~ 57.54 | 0.952 |
| Okehampton | 8204.503 | ~~2636.6~~ 57.54 | 0.701 |
| Porto | 10493.604 | ~~2636.6~~ 57.54 | 0.548 |

**Discussion and conclusions**

The tier 1 average annual average PECgw of sulfate at 1 m depth stayed clearly below the drinking water indicator parameter of 250 mg/L in all scenarios for each GAP use.

Thus, it can be concluded that sulfates will not leach to groundwater to any environmentally hazardous extent and that taste impairment is minimal.

Hence, the leaching of unacceptable amounts of substances following application of sulfur to the crops intended in the GAP is highly unlikely.

## 8.9 Predicted Environmental Concentrations in surface water ($PEC_{sw}$) (KCP 9.2.5)

zRMS Comments:

The PECsw/sed assessment for active substances and their metabolites was accepted. STEP 1 & 2, STEP 3 and STEP 4 were used for PECsw and PECsed assessment.

**Mefentrifluconazole:**
The Applicant submitted calculations PECsw for maximum no-spray buffer 5 m.

The max PECsw for Central Zone considering D3, D4, D5, R1, R3 and R4 scenarios with relevant mitigation measure are presented in the table below:

| Crop | Central Zone max PECsw µg/L | No spray buffer (m) |
|---|---|---|
| **Winter cereals** | 0.761<br>R4 stream, multiple | 5 |
| **Spring cereals** | 0.212<br>D4 stream, multiple | 5 |

The max PECsw for Poland considering D3, D4 and R1 scenarios with relevant mitigation measure are presented in the table below:

| Crop | Poland max PECsw µg/L | No spray buffer (m) |
|---|---|---|
| **Winter and spring cereals** | 0.529*<br>R1 stream, multiple | 5 |

*In accordance with national requirements in Poland the winter cereals is a surrogate crop for spring cereals.

The relevant metabolites were taken for consideration: 1,2,4-triazole, M750F003, M750F005, M750F006, M750F007 and M750F008. PECsw/sed values are presented in Tables 8.9-13 and 8.9-14.

The relevant mitigation measure will be recommended in ecotoxicological section.

**Sulfur:**
The Applicant submitted calculations PECsw/sed were carried out using for the Step 1 and Step 2 for the winter cereals (worst-case):

| Crop | Substance | Max PECsw (µg/L) | Max PECsed (µg/kg) |
|---|---|---|---|
| **Winter and spring cereals** | Sulfur | 22.07 | 1.82 |
| | Sulfates | 1.64 | 6.12 |

**Formulation:**
The density of formulation, based on Section 2: Physical and chemical properties, of 1.360 g/mL should be used in PECsw assessment of formulation and the Applicant has used the density of 1.300 g/mL. Calculations of PECsw for formulation were recalculated by evaluator using the Drift Calculator in SWASH model:

| | | | | |
|---|---|---|---|---|
| **Intended use** | | winter cereals | | |
| **Active substance** | | mefentrifluconazole, sulfur | | |
| **Application rate (g/ha)** | | 5440 | | |
| **No-spray buffer (m)** | | **1** | **5** | **10** |
| **Vegetated filter strip (m)** | | - | - | - |
| **Nozzle reduction** | | PECsw µg/L | | |
| None | | 34.950 | 9.474 | 5.024 |
| 50 % | | 17.475 | 4.737 | 2.512 |
| 75 % | | 8.738 | 2.369 | 1.256 |
| 90 % | | 3.495 | 0.947 | 0.502 |

## 8.9.1 Justification for new endpoints

**Mefentrifluconazole**

At Steps 1-2 of the tiered assessment scheme, for mefentrifluconazole the whole system $DT_{50}$ of 163.4 days was used both for the water and sediment compartment according to current FOCUS guideline [*FOCUS (2006,2014): Guidance Document on Estimating Persistence and Degradation Kinetics from Environmental Fate Studies on Pesticides in EU Registration. Report of the FOCUS Work Group on Degradation Kinetics, EC Document Reference Sanco/10058/2005 version 1.1 of December 2014, 440 pp*], whilst the List of Endpoints (DAR, 2018) gives a default of 1000 days for $DT_{50}$ in sediment. However, resulting STEP 1-2 $PEC_{sw}$ and $PEC_{sed}$ values show only a minor difference from corresponding values in the DAR.

All other endpoints used for $PEC_{sw/sed}$ calculations for mefentrifluconazole and its metabolites were selected according to the EFSA Conclusion on the active substance [*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*].

**Sulfur**

~~According to the Final addendum to the Draft Assessment Report (2008) and as agreed in the EFSA Scientific Report (2008) 221 for sulfur, the use of FOCUS modelling is not appropriate for inorganic compounds while it was experienced that the use of FOCUS for $PEC_{sw}$ calculations lead to concentrations above the water solubility limit. Sulfur is only slightly soluble with a maximum EU agreed water solubility of 63 µg/L (underlying study: KCA 2.5/01; Redeker, J., 1991). A newly submitted water solubility test (KCA 2.5/03; Rigamonti, E., 2018) resulted in an even lower concentration of 16 µg/L confirming the very low solubility of sulfur in water. Therefore, the $PEC_{sw}$ was not calculated but the water solubility of 16 µg/L was considered which is also applied in the ongoing EU renewal assessment of the active substance sulfur.~~

According to the EFSA Conclusion (2023) for sulfur, the use of FOCUS modelling is appropriate to calculate $PEC_{sw}$ for sulfur and sulfate. $PEC_{sw/sed}$ calculations were carried out using the FOCUS step 1 and step 2 (version 3.2 of the Steps 1–2 in FOCUS calculator). $PEC_{sw}$ for total sulfur(dissolved +non-dissolved) was calculated for a single application considering spray driftdeposition rates, as agreed by experts during the Teleconference 86 meeting. Whilst $PEC_{sw}$fordissolved sulfur was set to the maximum water solubility of 16 µg/L as proposed in the previous evaluation (EFSA, 2008b).

All endpoints used for $PEC_{sw/sed}$ calculations for sulfur and sulfate were selected according to the EFSA Conclusion on sulfur [*EFSA (European Food Safety Authority), 2023. Conclusion on the peer review of the pesticide risk assessment of the active substance sulfur. EFSA Journal 2023;21(3):7805, 25 pp. https://doi.org/10.2903/j.efsa.2023.7805*].

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

**Table 8.9-1: Input parameters related to application of mefentrifluconazole for $PEC_{SW/SED}$ calculations**

| | | |
|---|---|---|
| **Use No.** | 1-9 | |
| **Crop** | **Winter cereals** | **Spring cereals [a]**<br>**Spring oil seed rape [b]**<br>**Legumes [b]** |
| **Crop growth stage [BBCH]** | 30 - 59 | 30 - 59 |
| **Application rate [g a.s ha$^{-1}$]** | 100 | 100 |
| **Max. no. of applications [-] / interval [d]** | 2 / 14 | 2 / 14 |
| **Application window (relevant for STEP 1 and 2 only)** | Mar-May<br>North Europe and South Europe<br>Average crop cover | Mar-May<br>North Europe and South Europe<br>Average crop cover |
| **Application method** | Ground spray | Ground spray |
| **CAM (Chemical application method)** | Foliar linear | Foliar linear |
| **Soil depth [cm]** | 4 | 4 |
| **Models used for calculation** | STEPS 1-2 in FOCUS v3.2<br>FOCUS SPIN v3.3, FOCUS SWASH v5.3 (FOCUS PRZM v4.3.1, FOCUS MACRO v5.5.4, FOCUS TOXSWA v5.5.3) | |

[a] At Steps 1 and 2 only the crop winter cereals was considered, representing the worst-case in the context of a risk envelope approach.
[b] As national requirement for Austria, spring oil seed rape and legumes were used as surrogate crops for spring cereals for the Steps 3 and 4 calculations (scenario R1 and R3, respectively), since R1 and R3 scenarios are not defined for this crop.

The start dates of the application windows were selected for BBCH 30 according to AppDate 3.06. For BBCH 59 the start dates of the application windows were set to 7 days before the date given by AppDate 3.06. The width of the application window was set to 30 days for single applications and to 44 days for twofold applications with a 14-day interval between applications following FOCUS. The length of the application window that is required for the Pesticide Application Tool (PAT) to determine actual application dates was chosen to cover the whole application window as specified in the GAP considering the BBCH growth stage.

The detailed application timing used for the simulations is shown in Table 8.9-2.

**Table 8.9-2: FOCUS Step 3 Scenario related input parameters for mefentrifluconazolePEC$_{sw/sed}$ calculations**

| Crop | Scenario | Application window BBCH 30 | Application window BBCH 59 |
|---|---|---|---|
| Winter cereals | D1 | 25th Mar – 08th May (24th Apr [b]) | 13th Jun – 27th Jul (13th Jul [b]) |
| | D2 | 04th Apr – 18th May (04th May [b]) | 20th Jun – 03rd Aug (20th Jul [b]) |
| | D3 | 16th Apr – 30th May (16th May [b]) | 14th Jul – 27th Aug (13th Aug [b]) |
| | D4 | 18th Mar – 01st May (17th Apr [b]) | 11th Jun – 25th Jul (11th Jul [b]) |
| | D5 | 15th Mar – 28th Apr (14th Apr [b]) | 06th May – 19th Jun (05th Jun [b]) |
| | D6 | 16th Feb – 01st Apr (18th Mar [b]) | 22nd Mar – 05th May (21st Apr [b]) |
| | R1 | 24th Apr – 07th Jun (24th May [b]) | 01st Jun – 15th Jul (01st Jul [b]) |
| | R3 | 19th Mar – 02nd May (18th Apr [b]) | 01st May – 14th Jun (31st May [b]) |
| | R4 | 24th Jan – 09th Mar (23rd Feb [b]) | 04th May – 17th Jun (03rd Jun [b]) |
| Spring cereals | D1 | 27th May – 10th Jul (26th Jun [b]) | 20th Jun – 03rd Aug (20th Jul [b]) |
| | D3 | 28th Apr – 11th Jun (28th May [b]) | 28th May – 11th Jul (27th Jun [b]) |
| | D4 | 18th May – 01st Jul (17th Jun [b]) | 11th Jun – 25th Jul (11th Jul [b]) |
| | D5 | 09th Apr – 23rd May (09th May [b]) | 07th May – 20th Jun (06th Jun [b]) |
| | R4 | 09th Apr – 23rd May (09th May [b]) | 07th May – 20th Jun (06th Jun [b]) |
| Spring oilseed rape [a] | R1 | 10th May – 23rd Jun (09th Jun [b]) | 30th May – 13th Jul (29th Jun [b]) |
| Legumes [a] | R3 | 01st May – 14th Jun (31st May [b]) | 12th May – 25th Jun (11th Jun [b]) |

[a]As national requirement for Austria, spring oilseed rape and legumes were used as surrogate crops for spring cereals for the Steps 3 calculations (scenario R1 and R3, respectively), since R1 and R3 scenarios are not defined for this crop.
[b] End of application window for single application.

**Table 8.9-3: Default values for $PEC_{sw/sed}$ calculations at Steps 3 and 4**

| | | | |
|---|---|---|---|
| **General** | | | |
| Diffusion coefficient in water | TOXSWA ($m^2/d$)<br>MACRO ($m^2/s$) | $4.3 \times 10^{-5}$<br>$5.0 \times 10^{-10}$ | FOCUS recommendation |
| Diffusion coefficient in air | TOXSWA ($m^2/d$)<br>PRZM ($cm^2/d$) | 0.43<br>4300 | FOCUS recommendation |
| **Degradation parameter** | | | |
| Reference temperature (°C) | | 20 | FOCUS recommendation |
| Alpha factor (1/K) | MACRO | 0.0948 | FOCUS recommendation |
| $Q_{10}$ (–) | PRZM | 2.58 | FOCUS recommendation |
| Reference moisture | | pF 2 | FOCUS recommendation |
| Moisture exponent | MACRO (–)<br>PRZM (–) | 0.49<br>0.7 | FOCUS recommendation |
| $DT_{50}$ on crop canopy (d) | | 10 | FOCUS recommendation |
| Reference temperature (°C) | | 20 | FOCUS recommendation |
| Activation energy (J/mol) | TOXSWA | 65400 | FOCUS recommendation |
| **Crop related parameter** | | | |
| Wash-off factor from crop | MACRO (1/mm)<br>PRZM (1/cm) | 0.05<br>0.50 | FOCUS recommendation |

### 8.9.2.1 Mefentrifluconazole and its metabolites

| | |
|---|---|
| Comments of zRMS: | The PECsw/sed assessment for active substance mefentrifluconazole and its relevant metabolites 1,2,4-triazole, M750F003, M750F005, M750F006, M750F007 and M750F008 was accepted. |

| | |
|---|---|
| Reference: | CP 9.2.5/1 |
| Report | Predicted environmental concentrations of BAS 750 F - mefentrifluconazole and its metabolites in soil, groundwater, surface water and sediment following application to cereals in Central and Southern Europe,<br><br>Bouallegue A, 2022<br><br>report No EU-CALC-2766<br><br>DocID 2022/2057625<br><br>Authority registration No |
| Guideline(s): | FOCUS Surface Water Scenarios (2001) SANCO/4802/2001 rev. 2,<br>FOCUS Surface Water (2015) Generic guidance v 1.4,<br>FOCUS (2007) Landscape and Mitigation factors in aquatic risk assessment, Vol. 1 and 2,<br>BAES (2020): National exposure assessment for the authorization of plant protection products (PPP) in Austria, v4 |
| Deviations: | No |
| GLP: | No, not compulsory to PEC reports |
| Acceptability: | Yes |

**Table 8.9-4: Input parameters for mefentrifluconazole and its metabolites for $PEC_{sw/sed}$ calculations**

| Compound | Mefentrifluconazole | 1,2,4-triazole | M750F003 | M750F005 | M750F006 | M750F007 | M750F008 | Value in accordance to EU endpoint Reference |
|---|---|---|---|---|---|---|---|---|
| Molecular weight [g mol$^{-1}$] | 397.8 | 69.1 | 287.2 | 379.3 | 355.8 | 337.3 | 355.8 | Yes, EFSA (2018) |
| Vapor pressure [Pa] (20°C) | 3.2 x 10$^{-6}$ | - [a)] | | | | | | Yes, EFSA (2018) |
| Water solubility [mg L$^{-1}$] (20°C) | 0.81 | 700000 | 1000 (conservative estimate) | 1000 (conservative estimate) | 1000 (conservative estimate) | 1000 (conservative estimate) | 1000 (conservative estimate) | Yes, EFSA (2018) |
| $DT_{50}$ soil [d] | 200 (geometric mean of field trials, normalized, n = 6) | 60.5 (geometric mean of field studies, slow phase DFOP, n = 4) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | Yes, EFSA (2018) |
| $DT_{50}$ water [d] | 163.4 (geometric mean, whole system, n = 2) (Step 1 - 2), 1000 (default) (Step 3) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | Yes, EFSA (2018) |
| $DT_{50}$ sediment [d] | 163.4 (geometric mean, whole system level P-1, n = 2) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | EFSA (2018) |
| $DT_{50}$ whole system [d] | 163.4 (geometric mean, n = 2 | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | 1000 (default) | Yes, EFSA (2018) |
| Max. occurrence observed [%] | - [b)] | Soil: 5.1<br><br>Total w/s system: 15.1 | Soil: 1.8<br><br>Total w/s system: 8.5 | Soil: 0.001 [c)]<br><br>Photolysis study: 32.2 | Soil: 0.001 [c)]<br><br>Photolysis study: 30.7 | Soil: 0.001 [c)]<br><br>Photolysis study: 43.9 | Soil: 0.001 [c)]<br><br>Photolysis study: 7.3 | Yes, EFSA (2018) |

**Table 8.9-4: Input parameters for mefentrifluconazole and its metabolites for $PEC_{sw/sed}$ calculations**

| Compound | Mefentrifluconazole | 1,2,4-triazole | M750F003 | M750F005 | M750F006 | M750F007 | M750F008 | Value in accordance to EU endpoint Reference |
|---|---|---|---|---|---|---|---|---|
| $K_{f,oc}$ [mL $g^{-1}$] | 3455.6 (geometric mean; n = 8) | 83 (geometric mean; n = 4) | 597.6 (QSAR estimate) | 7863 (QSAR estimate) | 4919 (QSAR estimate) | 3938 (QSAR estimate) | 17240 (QSAR estimate) | Yes, EFSA (2018) |
| Freundlich exponent 1/n | 0.975 (arithmetic mean; n = 8) | - [a] | | | | | | Yes, EFSA (2018) |
| Plant Uptake [-] | 0 | - [a] | | | | | | Yes, EFSA (2018) |

[a] Not required for Steps 1-2
[b] Not relevant for parent substance
[c] Metabolite not detected in soil; Step1-2 needs value >0

### $PEC_{sw/sed}$ for mefentrifluconazole FOCUS STEPs 1-3

Global maximum $PEC_{sw}$ and $PEC_{sed}$ values are reported for winter and for spring cereals all scenarios. For actual and time-weighted average values of the $PEC_{sw}$ for mefentrifluconazole please refer to the study report [BASF DocID2022/2057625].

**Table 8.9-5: FOCUS Steps 1, 2 and 3 $PEC_{sw}$ and $PEC_{sed}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to winter cereals, BBCH30**

| Scenario FOCUS | Waterbody / Season | Max. $PEC_{sw}$ [µg $L^{-1}$] | Dominant entry route | 21 d – $PEC_{sw,twa}$ [µg $L^{-1}$] | Max. $PEC_{sed}$ [µg $kg^{-1}$] |
|---|---|---|---|---|---|
| **Step 1** | | | | | |
| - | - | 13.728 multiple | - | 11.725 multiple | 420.381 multiple |
| **Step 2** | | | | | |
| Northern Europe | March-May | 2.216 multiple | - | 2.020 multiple | 72.548 multiple |
| Southern Europe | March-May | 4.048 multiple | - | 3.772 multiple | 135.574 multiple |
| **Step 3** | | | | | |
| D1 | Ditch | 1.355 multiple | Drift | 0.922 multiple | 16.230 multiple |
| D1 | Stream | 0.919 multiple | Drift | 0.575 multiple | 8.940 multiple |
| D2 | Ditch | 1.569 multiple | Drainage | 0.802 multiple | 14.830 multiple |
| D2 | Stream | 0.980 multiple | Drainage | 0.460 multiple | 8.244 multiple |
| D3 | Ditch | 0.632 single | Drift | 0.056 multiple | 0.486 multiple |
| D4 | Pond | 0.069 multiple | Drainage | 0.057 multiple | 0.587 multiple |
| D4 | Stream | 0.467 single | Drift | 0.025 multiple | 0.237 multiple |
| D5 | Pond | 0.035 multiple | Drift | 0.030 multiple | 0.348 multiple |
| D5 | Stream | 0.504 single | Drift | 0.004 multiple | 0.042 multiple |
| D6 | Ditch | 0.627 single | Drift | 0.070 multiple | 0.759 multiple |
| R1 | Pond | 0.100 multiple | Runoff | 0.091 multiple | 1.372 multiple |
| R1 | Stream | 0.529 multiple | Runoff | 0.043 multiple | 2.094 multiple |
| R3 | Stream | 0.585 single | Drift | 0.037 multiple | 1.892 multiple |
| R4 | Stream | 0.761 multiple | Runoff | 0.046 multiple | 2.172 multiple |

**Table 8.9-6: FOCUS Steps 1, 2 and 3 PECsw and PECsed for mefentrifluconazole following single/twofold application of 100 g a.s. ha$^{-1}$ to winter cereals, BBCH59**

| Scenario FOCUS | Waterbody / Season | Max. PEC$_{sw}$ [µg L$^{-1}$] | Dominant entry route | 21 d – PEC$_{sw,twa}$ [µg L$^{-1}$] | Max. PEC$_{sed}$ [µg kg$^{-1}$] |
|---|---|---|---|---|---|
| **Step 1** | | | | | |
| - | - | 13.728 multiple | - | 11.725 multiple | 420.381 multiple |
| **Step 2** | | | | | |
| Northern Europe | March-May | 2.216 multiple | - | 2.020 multiple | 72.548 multiple |
| Southern Europe | March-May | 4.048 multiple | - | 3.772 multiple | 135.574 multiple |
| **Step 3** | | | | | |
| D1 | Ditch | 0.994 multiple | Spray drift | 0.686 multiple | 10.240 multiple |
| D1 | Stream | 0.561 single | Spray drift | 0.331 multiple | 5.118 multiple |
| D2 | Ditch | 1.029 multiple | Drainage | 0.672 multiple | 9.698 multiple |
| D2 | Stream | 0.738 multiple | Spray drift | 0.502 multiple | 5.517 multiple |
| D3 | Ditch | 0.634 single | Spray drift | 0.056 multiple | 0.717 multiple |
| D4 | Pond | 0.047 multiple | Drainage | 0.039 multiple | 0.467 multiple |
| D4 | Stream | 0.546 single | Spray drift | 0.014 multiple | 0.151 multiple |
| D5 | Pond | 0.033 multiple | Spray drift | 0.029 multiple | 0.298 multiple |
| D5 | Stream | 0.590 single | Spray drift | 0.019 multiple | 0.177 multiple |
| D6 | Ditch | 0.635 single | Spray drift | 0.226 multiple | 1.683 multiple |
| R1 | Pond | 0.143 multiple | Runoff | 0.129 multiple | 1.368 multiple |
| R1 | Stream | 0.471 multiple | Runoff | 0.046 multiple | 4.771 multiple |
| R3 | Stream | 0.585 single | Spray drift | 0.030 multiple | 0.980 multiple |
| R4 | Stream | 0.686 multiple | Runoff | 0.107 multiple | 2.784 multiple |

**Table 8.9-7: FOCUS Steps 1, 2 and 3 PECsw and PECsed for mefentrifluconazole following single/multiple application of 100 g a.s. ha$^{-1}$ to spring cereals, BBCH30**

| Scenario FOCUS | Waterbody / Season | Max. $PEC_{sw}$ [µg L$^{-1}$] | Dominant entry route | 21 d – $PEC_{sw,twa}$ [µg L$^{-1}$] | Max. $PEC_{sed}$ [µg kg$^{-1}$] |
|---|---|---|---|---|---|
| **Step 1[a]** | | | | | |
| - | - | 13.728 multiple | - | 11.725 multiple | 420.381 multiple |
| **Step 2[a]** | | | | | |
| Northern Europe | March-May | 2.216 multiple | - | 2.020 multiple | 72.548 multiple |
| Southern Europe | March-May | 4.048 multiple | - | 3.772 multiple | 135.574 multiple |
| **Step 3** | | | | | |
| D1 | Ditch | 1.189 multiple | Drift | 0.853 multiple | 17.320 multiple |
| D1 | Stream | 0.628 multiple | Drainflow | 0.514 multiple | 9.263 multiple |
| D3 | Ditch | 0.632 single | Drift | 0.061 multiple | 0.514 multiple |
| D4 | Pond | 0.066 multiple | Drainflow | 0.055 multiple | 0.590 multiple |
| D4 | Stream | 0.517 single | Drift | 0.024 multiple | 0.225 multiple |
| D5 | Pond | 0.032 multiple | Drift | 0.028 multiple | 0.335 multiple |
| D5 | Stream | 0.531 single | Drift | 0.003 multiple | 0.036 multiple |
| R1 [b] | Pond | 0.131 multiple | Runoff | 0.119 multiple | 2.199 multiple |
| R1 [b] | Stream | 0.536 multiple | Runoff | 0.042 multiple | 2.195 multiple |
| R3 [b] | Stream | 0.511 single | Drift | 0.029 multiple | 0.891 multiple |
| R4 | Stream | 1.106 multiple | Runoff | 0.136 multiple | 3.775 multiple |

[a] Risk envelope: spring cereals are covered by winter cereals at Step 1 and Step 2

[b] Results from R1 and R3 scenarios are required for Austria. Spring oil seed rape and legumes were used as surrogate crops because these scenarios are not available for spring cereals.

**Table 8.9-8: FOCUS Steps 1, 2 and 3 $PEC_{sw}$ and $PEC_{sed}$ for mefentrifluconazole following single/multiple application of 100 g a.s. $ha^{-1}$ to spring cereals, BBCH59**

| Scenario FOCUS | Waterbody / Season | Max. $PEC_{sw}$ [µg $L^{-1}$] | Dominant entry route | 21 d – $PEC_{sw,twa}$ [µg $L^{-1}$] | Max. $PEC_{sed}$ [µg $kg^{-1}$] |
|---|---|---|---|---|---|
| **Step 1[a]** | | | | | |
| - | - | 13.728 multiple | - | 11.725 multiple | 420.381 multiple |
| **Step 2[a]** | | | | | |
| Northern Europe | March-May | 2.216 multiple | - | 2.020 multiple | 72.548 multiple |
| Southern Europe | March-May | 4.048 multiple | - | 3.772 multiple | 135.574 multiple |
| **Step 3** | | | | | |
| D1 | Ditch | 1.041 multiple | Spray drift | 0.719 multiple | 10.130 multiple |
| D1 | Stream | 0.564 single | Spray drift | 0.308 multiple | 5.160 multiple |
| D3 | Ditch | 0.635 single | Spray drift | 0.067 multiple | 0.571 multiple |
| D4 | Pond | 0.052 multiple | Drainage | 0.043 multiple | 0.494 multiple |
| D4 | Stream | 0.547 single | Spray drift | 0.017 multiple | 0.172 multiple |
| D5 | Pond | 0.033 multiple | Spray drift | 0.029 multiple | 0.306 multiple |
| D5 | Stream | 0.553 single | Spray drift | 0.011 multiple | 0.141 multiple |
| R1[b] | Pond | 0.121 multiple | Runoff | 0.110 multiple | 1.917 multiple |
| R1[b] | Stream | 0.419 single | Spray drift | 0.041 multiple | 2.428 multiple |
| R3[b] | Stream | 0.511 single | Spray drift | 0.029 multiple | 0.895 multiple |
| R4 | Stream | 0.420 multiple | Runoff | 0.070 multiple | 3.159 multiple |

[a] Risk envelope: spring cereals are covered by winter cereals at Step 1 and Step 2

[b] Results from R1 and R3 scenarios are required for Austria. Spring oil seed rape and legumes were used as surrogate crops because these scenarios are not available for spring cereals.

## $PEC_{sw/sed}$ for mefentrifluconazole FOCUS STEP 4

**Table 8.9-9: FOCUS Step 4 $PEC_{sw}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to <u>winter cereals, BBCH30</u>**

| $PEC_{sw}$ [µg $L^{-1}$] | Scenario | Step 4 | |
|---|---|---|---|
| Nozzle reduction | Vegetated filter strip [m] | None | None |
| | No-spray buffer [m] | Edge-of-field | 5 |
| None | D1 ditch | 1.355 multiple | 1.060 multiple |
| 50% | | 1.078 multiple | - |
| None | D1 stream | 0.919 multiple | 0.665 multiple |
| 50% | | 0.706 multiple | - |
| None | D2 ditch | 1.569 multiple | 1.569 multiple |
| 50% | | 1.569 multiple | - |
| None | D2 stream | 0.980 multiple | 0.980 multiple |
| 50% | | 0.980 multiple | - |
| None | D3 ditch | 0.632 single | 0.171 single |
| 50% | | 0.316 single | - |
| None | D4 pond | 0.069 multiple | 0.068 multiple |
| 50% | | 0.066 multiple | - |
| None | D4 stream | 0.467 single | 0.243 multiple |
| 50% | | 0.243 multiple | - |
| None | D5 pond | 0.035 multiple | 0.03 multiple |
| 50% | | 0.020 multiple | - |
| None | D5 stream | 0.504 single | 0.184 single |
| 50% | | 0.252 single | - |
| None | D6 ditch | 0.627 single | 0.586 multiple |
| 50% | | 0.586 multiple | - |
| None | R1 pond | 0.100 multiple | 0.097 multiple |
| 50% | | 0.095 multiple | - |
| None | R1 stream | 0.529 multiple | 0.529 multiple |
| 50% | | 0.529 multiple | - |

**Table 8.9-9: FOCUS Step 4 $PEC_{sw}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to winter cereals, BBCH30**

| | | | |
|---|---|---|---|
| None | R3 stream | 0.585<br>single | 0.496<br>multiple |
| 50% | | 0.496<br>multiple | - |
| None | R4 stream | 0.761<br>multiple | 0.761<br>multiple |
| 50% | | 0.761<br>multiple | - |

**Table 8.9-10: FOCUS Step 4 $PEC_{sw}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to winter cereals, BBCH59**

| $PEC_{sw}$ [µg $L^{-1}$] | Scenario | Step 4 | |
|---|---|---|---|
| Nozzle reduction | Vegetated filter strip [m] | None | None |
| | No-spray buffer [m] | Edge-of-field | 5 |
| None | D1 ditch | 0.994 multiple | 0.577 multiple |
| 50% | | 0.577 multiple | - |
| None | D1 stream | 0.561 single | 0.362 multiple |
| 50% | | 0.362 multiple | - |
| None | D2 ditch | 1.029 multiple | 1.029 multiple |
| 50% | | 1.029 multiple | - |
| None | D2 stream | 0.738 multiple | 0.651 multiple |
| 50% | | 0.651 multiple | - |
| None | D3 ditch | 0.634 single | 0.172 single |
| 50% | | 0.317 single | - |
| None | D4 pond | 0.047 multiple | 0.045 multiple |
| 50% | | 0.042 multiple | - |
| None | D4 stream | 0.546 single | 0.200 single |
| 50% | | 0.273 single | - |
| None | D5 pond | 0.033 multiple | 0.029 multiple |
| 50% | | 0.017 multiple | - |
| None | D5 stream | 0.590 single | 0.215 single |
| 50% | | 0.295 single | - |
| None | D6 ditch | 0.635 single | 0.291 multiple |
| 50% | | 0.318 single | - |
| None | R1 pond | 0.143 multiple | 0.140 multiple |
| 50% | | 0.131 multiple | - |
| None | R1 stream | 0.471 multiple | 0.471 multiple |
| 50% | | 0.471 multiple | - |
| None | R3 stream | 0.585 single | 0.350 multiple |

**Table 8.9-10: FOCUS Step 4 $PEC_{sw}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to winter cereals, BBCH59**

| $PEC_{sw}$ [µg $L^{-1}$] | Scenario | Step 4 | |
|---|---|---|---|
| Nozzle reduction | Vegetated filter strip [m] | None | None |
| | No-spray buffer [m] | Edge-of-field | 5 |
| 50% | | 0.351<br>multiple | - |
| None | R4 stream | 0.686<br>multiple | 0.686<br>multiple |
| 50% | | 0.363<br>multiple | - |

**Table 8.9-11: FOCUS Step 4 $PEC_{sw}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to spring cereals, BBCH30**

| $PEC_{sw}$ [µg $L^{-1}$] | Scenario | Step 4 | |
|---|---|---|---|
| Nozzle reduction | Vegetated filter strip [m] | None | None |
| | No-spray buffer [m] | Edge-of-field | 5 |
| None | D1 ditch | 1.189 multiple | 1.002 multiple |
| 50% | | 1.002 multiple | - |
| None | D1 stream | 0.628 multiple | 0.628 multiple |
| 50% | | 0.628 multiple | - |
| None | D3 ditch | 0.632 single | 0.171 single |
| 50% | | 0.316 single | - |
| None | D4 pond | 0.066 multiple | 0.065 multiple |
| 50% | | 0.063 multiple | - |
| None | D4 stream | 0.517 single | 0.212 multiple |
| 50% | | 0.258 single | - |
| None | D5 pond | 0.032 multiple | 0.028 multiple |
| 50% | | 0.018 multiple | - |
| None | D5 stream | 0.531 single | 0.194 single |
| 50% | | 0.265 single | - |
| None | R1 pond[a] | 0.131 multiple | 0.131 multiple |
| 50% | | 0.129 multiple | - |
| None | R1 stream[a] | 0.536 multiple | 0.536 multiple |
| 50% | | 0.536 multiple | - |
| None | R3 stream[a] | 0.511 single | 0.481 multiple |
| 50% | | 0.481 multiple | - |
| None | R4 stream | 1.106 multiple | 0.106 multiple |
| 50% | | 1.106 multiple | - |

[a] Results from R1 and R3 scenarios are required for Austria. Spring oil seed rape and legumes were used as surrogate crops because these scenarios are not available for spring cereals.

**Table 8.9-12: FOCUS Step 4 $PEC_{sw}$ for mefentrifluconazole following single/twofold application of 100 g a.s. $ha^{-1}$ to spring cereals, BBCH59**

| $PEC_{sw}$ [µg $L^{-1}$] | Scenario | Step 4 | |
|---|---|---|---|
| Nozzle reduction | Vegetated filter strip [m] | None | None |
| | No-spray buffer [m] | Edge-of-field | 5 |
| None | D1 ditch | 1.041 multiple | 0.553 multiple |
| 50% | | 0.613 multiple | - |
| None | D1 stream | 0.564 single | 0.346 multiple |
| 50% | | 0.346 multiple | - |
| None | D3 ditch | 0.635 single | 0.172 single |
| 50% | | 0.318 single | - |
| None | D4 pond | 0.052 multiple | 0.051 multiple |
| 50% | | 0.048 multiple | - |
| None | D4 stream | 0.547 single | 0.200 single |
| 50% | | 0.273 single | - |
| None | D5 pond | 0.033 multiple | 0.029 multiple |
| 50% | | 0.017 multiple | - |
| None | D5 stream | 0.553 single | 0.202 single |
| 50% | | 0.227 single | - |
| None | R1 pond[a] | 0.121 multiple | 0.121 multiple |
| 50% | | 0.119 multiple | - |
| None | R1 stream[a] | 0.419 single | 0.388 multiple |
| 50% | | 0.388 multiple | - |
| None | R3 stream[a] | 0.511 single | 0.485 multiple |
| 50% | | 0.485 multiple | - |
| None | R4 stream | 0.420 multiple | 0.420 multiple |
| 50% | | 0.420 multiple | - |

[a] Results from R1 and R3 scenarios are required for Austria. Spring oil seed rape and legumes were used as surrogate crops because these scenarios are not available for spring cereals.

**Metabolites of mefentrifluconazole**

Only maximum values are reported, which can also be considered as worst-case estimates of short-term and long-term exposure. The global maximum concentrations at Step 1 and 2 for 1,2,4-triazole, M750F003, M750F005, M750F006, M750F007, and M750F008 are given in Table 8.9-13 and Table 8.9-14.

**Table 8.9-13: FOCUS Step 1 and 2 $PEC_{sw}$ and $PEC_{sed}$ for the metabolites of mefentrifluconazole following single/twofold application of mefentrifluconazole to winter cereals [a], BBCH 30**

| Scenario FOCUS | Season | Max $PEC_{sw}$ [µg $L^{-1}$] | Max $PEC_{sed}$ [µg $kg^{-1}$] |
|---|---|---|---|
| **1,2,4-triazole** | | | |
| Step 1 | - | 2.155 multiple | 1.781 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.357 multiple | 0.295 multiple |
| Southern Europe | Mar-May | 0.675 multiple | 0.558 multiple |
| **M750F003** | | | |
| Step 1 | - | 2.870 multiple | 16.852 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.462 multiple | 2.881 multiple |
| Southern Europe | Mar-May | 0.919 multiple | 5.433 multiple |
| **M750F005** | | | |
| Step 1 | - | 2.347 multiple | 143.916 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.338 multiple | 24.965 multiple |
| Southern Europe | Mar-May | 0.613 multiple | 46.542 multiple |
| **M750F006** | | | |
| Step 1 | - | 2.927 multiple | 122.338 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.457 multiple | 21.222 multiple |
| Southern Europe | Mar-May | 0.830 multiple | 39.563 multiple |
| **M750F007** | | | |

**Table 8.9-13: FOCUS Step 1 and 2 $PEC_{sw}$ and $PEC_{sed}$ for the metabolites of mefentrifluconazole following single/twofold application of mefentrifluconazole to winter cereals [a], BBCH 30**

| Scenario FOCUS | Season | Max $PEC_{sw}$ [µg $L^{-1}$] | Max $PEC_{sed}$ [µg $kg^{-1}$] |
|---|---|---|---|
| Step 1 | - | 4.655 multiple | 160.547 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.747 multiple | 27.850 multiple |
| Southern Europe | Mar-May | 1.358 multiple | 51.920 multiple |
| **M750F008** | | | |
| Step 1 | - | 0.306 multiple | 32.131 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.060 single | 5.574 multiple |
| Southern Europe | Mar-May | 0.063 multiple | 10.391 multiple |

[a]At Steps 1 and 2 only the crop winter cereals was considered, representing the worst-case in the context of a risk envelope approach

**Table 8.9-14: FOCUS Step 1 and 2 $PEC_{sw}$ and $PEC_{sed}$ for the metabolites of mefentrifluconazole following single/twofold application of mefentrifluconazole to winter cereals [a], BBCH 59**

| Scenario FOCUS | Season | Max $PEC_{sw}$ [µg $L^{-1}$] | Max $PEC_{sed}$ [µg $kg^{-1}$] |
|---|---|---|---|
| **1,2,4-triazole** | | | |
| Step 1 | - | 2.155 multiple | 1.781 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.357 multiple | 0.295 multiple |
| Southern Europe | Mar-May | 0.675 multiple | 0.558 multiple |
| **M750F003** | | | |
| Step 1 | - | 2.870 multiple | 16.852 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.462 multiple | 2.881 multiple |
| Southern Europe | Mar-May | 0.919 multiple | 5.433 multiple |
| **M750F005** | | | |
| Step 1 | - | 2.347 multiple | 143.916 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.338 multiple | 24.965 multiple |
| Southern Europe | Mar-May | 0.613 multiple | 46.542 multiple |
| **M750F006** | | | |
| Step 1 | - | 2.927 multiple | 122.338 multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.457 multiple | 21.222 multiple |
| Southern Europe | Mar-May | 0.830 multiple | 39.563 multiple |
| **M750F007** | | | |
| Step 1 | - | 4.655 multiple | 160.547 multiple |
| Step 2 | | | |
| Northern | Mar-May | 0.747 | 27.850 |

**Table 8.9-14: FOCUS Step 1 and 2 $PEC_{sw}$ and $PEC_{sed}$ for the metabolites of mefentrifluconazole following single/twofold application of mefentrifluconazole to winter cereals [a], BBCH 59**

| Scenario FOCUS | Season | Max $PEC_{sw}$ [µg $L^{-1}$] | Max $PEC_{sed}$ [µg $kg^{-1}$] |
|---|---|---|---|
| Europe | | multiple | multiple |
| Southern Europe | Mar-May | 1.358<br>multiple | 51.920<br>multiple |
| **M750F008** | | | |
| Step 1 | - | 0.306<br>multiple | 32.131<br>multiple |
| Step 2 | | | |
| Northern Europe | Mar-May | 0.060<br>single | 5.574<br>multiple |
| Southern Europe | Mar-May | 0.063<br>multiple | 10.391<br>multiple |

[a]At Steps 1 and 2 only the crop winter cereals was considered, representing the worst-case in the context of a risk envelope approach

### 8.9.2.2 Sulfur

| Comments of zRMS: | The PECsw/sed assessment for sulfur and sulfate was accepted. |
|---|---|

| | |
|---|---|
| Reference: | CP 9.2.5/2 |
| Report | Predicted environmental concentrations of Sulfur and sulfate in surface water and sediment following application to cereals in Europe,<br>Bouallegue, A., 2023<br>report No CALC-2795<br>2023/2039638<br>Authority registration No |
| Guideline(s): | FOCUS (2007): Landscape And Mitigation Factors In Aquatic Risk Assessment. Vol. 1 and 2, FOCUS (2014): Generic guidance for FOCUS Kinetics v 1.1, FOCUS Degradation Kinetics (2006) SANCO/10058/2005 version 1.1 of December 2014, FOCUS Surface Water (2001) SANCO/4802/2001-rev.2 final (May 2003), FOCUS Surface Water (2015) Generic Guidance for FOCUS Surface Water Scenarios v1.4, FOCUS Air (2008) SANCO/10553/2006 rev. 2 |
| Deviations: | No |
| GLP: | No, not compulsory to PEC reports |
| Acceptability: | Yes |

**$PEC_{sw/sed}$ for sulfur**

$PEC_{sw}$ and $PEC_{sed}$ were calculated for sulfur and sulfate using the FOCUS step 1 and step 2 (version 3.2 of the Steps 1–2 in FOCUS calculator).

**Application scenarios**

**Table 8.9-15: Input parameters related to application for $PEC_{sw/sed}$ calculations**

| **Crop** | **Winter cereals** | **Spring cereals [a]** |
|---|---|---|
| **Crop growth stage [BBCH]** | 30 - 59 | 30 - 59 |
| **Application rate [g a.s ha$^{-1}$]** | 2400 | 2400 |
| **Max. no. of applications [-] / interval [d]** | 2 / 14 | 2 / 14 |
| **Application window** | Mar-May<br>North Europe and South Europe<br>Average crop cover<br>No Runoff/Drainage [b] | Mar-May<br>North Europe and South Europe<br>Average crop cover<br>No Runoff/Drainage [b] |
| **Models used for calculation** | STEPS 1-2 in FOCUS v3.2 | |

[a]At Steps 1 and 2 only the crop winter cereals was considered, representing the worst-case in the context of a risk envelope approach.

[b] used for$PEC_{sw}$ calculations for total sulfur at step 2 in accordance with EFSA Conclusion (2023) on sulfur.

**Step 1 and Step 2 scenario settings**

At Step 1 and 2 appropriate application periods and parameters for crop interception according to the GAP were considered. Crop interception values were applied as reported in FOCUS Surface Water (2015). At Step 2 of the assessment, the regions "North Europe" and "South Europe" were considered, combined with the application period 'March - May'. The application periods were selected depending on the earliest growth stage intended for application.

At step 2, $PEC_{sw}$ for total sulfur (dissolved + non-dissolved) was calculated considering the spray drift deposition rates "No Runoff/Drainage" for a single application according to the EFSA Conclusion (2023) on sulfur.

For winter and spring cereals at Step 1 and 2, only the crop winter cereals was considered, representing the worst-case in the context of a risk envelope approach.

**Table 8.9-16: Input parameters for sulfur and sulfate for $PEC_{sw/sed}$ calculations**

| Compound | sulfur | sulfate | Value in accordance to EU endpoint Reference |
|---|---|---|---|
| Molecular weight [g $mol^{-1}$] | 32.064 | 96.06 | Yes, EFSA (2023) |
| Water solubility [mg $L^{-1}$] (20°C) | 0.016 | 1000 | Yes, EFSA (2023) |
| $K_{f,oc}$ [mL $g^{-1}$] | 3615.3 (lowest estimated value from water solubility) | 0/10000 [c]<br>0 [d] | Yes, EFSA (2023) |
| $DT_{50}$ soil[d] | 1000 (Default)<br>0.1 [a] (Default) | 1000 (Default) | Yes, EFSA (2023) |
| $DT_{50}$ water[d] | 1000 (Default) | 1000 (Default) | Yes, EFSA (2023) |
| $DT_{50}$ sediment[d] | 1000 (Default) | 1000 (Default) | Yes, EFSA (2023) |
| $DT_{50}$ whole system[d] | 1000 (Default) | 1000 (Default) | Yes, EFSA (2023) |
| Maximum occurrence observed [%] | -[b] | 100 (soil)<br>100 (water/sediment) | Yes, EFSA (2023) |

[a] used for $PEC_{sed}$ calculations of sulfate at step 2.

[b] Not relevant for parent substance.

[c] Minimum and maximum default $K_{f,oc}$ values due to potential pH-dependency used for $PEC_{sed}$ calculations of sulfate at step 1 and 2.

[d] used for $PEC_{sw}$ calculations of sulfate at step 1 and 2.

**$PEC_{sw/sed}$ for sulfur FOCUS STEPs 1-2**

Global maximum $PEC_{sw}$ and $PEC_{sed}$ values are reported for winter cereals. For actual values of the $PEC_{sw}$ for sulfur and sulfate please refer to the study report [BASF DocID2023/2039638].
Two approaches were used to determine sulfur concentrations in surface water. Dissolved sulfur concentrations in surface water were set to the maximum water solubility of 16 µg $L^{-1}$ according to EFSA Conclusion (2023) on sulfur.Total sulfur concentrations (dissolved + non-dissolved) were calculated using FOCUS step 1 and step 2 and are shown inTable 8.9-17.

**Table 8.9-17: FOCUS Steps 1 and 2 $PEC_{sw}$ and $PEC_{sed}$ for total sulfur following single/twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals**

| Scenario FOCUS | Season | Max. $PEC_{sw}$ [µg $L^{-1}$] | Max. $PEC_{sed}$ [mg $kg^{-1}$] |
|---|---|---|---|
| **Step 1 [a]** | | | |
| - | - | 159.52 single | 10.20 multiple |
| **Step 2 [a]** | | | |
| North Europe [b] | March-May | 22.07 single | 1.82 (0.93*) multiple |
| South Europe [b] | March-May | 22.07 single | 3.39 (1.72*) multiple |

[a] Risk envelope: spring cereals are covered by winter cereals at Step 1 and Step 2.
[b] At step 2 only spray drift deposition rates for a single application was considered for sulfur. Therefore, same $PEC_{sw}$ results for North Europe and South Europe zones.
* Single application

**$PEC_{sw/sed}$ for sulfate FOCUS STEPs 1-2**

Only maximum values are reported, which can also be considered as worst-case estimates of short-term and long-term exposure. The global maximum concentrations at Step 1 and 2 for sulfur are given in Table 8.9-18andTable 8.9-19.
$PEC_{sed}$for sulfate were calculated using a minimum default $K_{f,oc}$ value of 0 mL $g^{-1}$ and a maximum default $K_{f,oc}$ value of 10000 mL $g^{-1}$ due to potential pH dependency.

**$K_{f,oc} = 0$**

**Table 8.9-18: FOCUS Steps 1 and 2 $PEC_{sw}$ and $PEC_{sed}$ for sulfate following twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals, $K_{f,oc} = 0$**

| Scenario FOCUS | Season | Max. $PEC_{sw}$ [mg $L^{-1}$] | Max. $PEC_{sed}$ [mg $kg^{-1}$] |
|---|---|---|---|
| **Step 1[a]** | | | |
| - | - | 9.72 multiple | 0.00 multiple |
| **Step 2[a]** | | | |
| North Europe | March-May | 1.64 multiple | 0.00 multiple |
| South Europe | March-May | 3.16 multiple | 0.00 multiple |

[a] Risk envelope: spring cereals are covered by winter cereals at Step 1 and Step 2.

**$K_{f,oc}$ = 10000**

**Table 8.9-19: FOCUS Steps 1 and 2 $PEC_{sed}$ for sulfate following twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals, $K_{f,oc}$ = 10000**

| Scenario FOCUS | Season | Max. $PEC_{sw}$ [b] [mg $L^{-1}$] | Max. $PEC_{sed}$ [mg $kg^{-1}$] |
|---|---|---|---|
| **Step 1[a]** | | | |
| - | - | - | 67.80 multiple |
| **Step 2[a]** | | | |
| North Europe | March-May | - | 6.12 multiple |
| South Europe | March-May | - | 11.40 multiple |

[a] Risk envelope: spring cereals are covered by winter cereals at Step 1 and Step 2.

[b] $PEC_{sw}$ calculated using default $K_{f,oc}$ value of 0 mL $g^{-1}$ according to the EFSA Conclusion (2023) on sulfur.

### 8.9.2.3 PEC$_{sw/sed}$ of the formulated product BAS 768 00 F

The maximum concentration in surface water for the formulation BAS 768 00 F from entry through spray drift following single application is provided for the application of 4 L product ha$^{-1}$.

For the assessment, the FOCUS drift calculator which is implemented in FOCUS SWASH 5.3 was used and a static water body of 30 cm depth was assumed (i.e. FOCUS ditch).

**Table 8.9-20: Initial PEC$_{SW}$ for BAS 768 00 F following a single spray application of 4 L BAS 768 00 F/ha considering a product density of ~~1300~~ 1360 g/L**

| **Crop** | Wheat, barley, rye, triticale |
|---|---|
| **FOCUS crop (for drift values)** | Field crops |
| **Formulationdensity (g/L)** | ~~1300~~ 1360 |
| **Application rate (L/ha)** | 4 |
| **Application rate (g/ha)** | ~~5200~~ 5440 |

| ~~**No spray drift buffer (m)**~~ | ~~**Drift rate (%)**~~ | ~~**Drift reducingnozzle (%)**~~ | ~~**PEC$_{sw,ini}$(µg/L)**~~ |
|---|---|---|---|
| ~~0~~ | ~~100~~ | ~~0~~ | ~~1733.333~~ |
| ~~1~~ | ~~1.93~~ | | ~~33.408~~ |
| ~~5~~ | ~~0.52~~ | | ~~9.056~~ |
| ~~10~~ | ~~0.28~~ | | ~~4.803~~ |
| ~~0~~ | ~~100~~ | ~~50~~ | ~~866.667~~ |
| ~~1~~ | ~~1.93~~ | | ~~16.704~~ |
| ~~5~~ | ~~0.52~~ | | ~~4.528~~ |
| ~~10~~ | ~~0.28~~ | | ~~2.402~~ |
| ~~0~~ | ~~100~~ | ~~75~~ | ~~433.333~~ |
| ~~1~~ | ~~1.93~~ | | ~~8.352~~ |
| ~~5~~ | ~~0.52~~ | | ~~2.264~~ |
| ~~10~~ | ~~0.28~~ | | ~~1.201~~ |
| ~~0~~ | ~~100~~ | ~~90~~ | ~~173.333~~ |
| ~~1~~ | ~~1.93~~ | | ~~3.341~~ |
| ~~5~~ | ~~0.52~~ | | ~~0.906~~ |
| ~~10~~ | ~~0.28~~ | | ~~0.480~~ |

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

## 8.10.1 Mefentrifluconazole

All information provided in this chapter was previously evaluated in the frame of the EU review of mefentrifluconazole and were summarized from the DAR [*European Commission / RMS UK, Co-RMS AT and FR (2018): Draft Assessment Report prepared according to the Commission Regulation (EU) N° 1107/2009. BAS 750F (Mefentrifluconazole)*].

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

| Compound | Mefentrifluconazole |
|---|---|
| Direct photolysis in air | Not studied |
| Quantum yield of direct phototransformation | No data available |
| Photochemical oxidative degradation in air | $DT_{50}$ : 19.995 hours (1.97 days) derived by the Atkinson model<br>OH (12h) concentration assumed = 1.5 x$10^{6}$ mol $cm^{-3}$ |
| Volatilisation | No data generated<br>Vapour pressure [Pa]: 3.2 x $10^{-6}$ at 20°C<br>Henry's Law Constant [Pa $m^3$ $mol^{-1}$]: 1.6 × $10^{-3}$ |
| Metabolites | n.a. |

The vapour pressure at 20 °C of the active substance mefentrifluconazole is < $10^{-5}$ Pa. Therefore, mefentrifluconazole is regarded as non-volatile. Therefore, exposure of adjacent surface waters and terrestrial ecosystems by the active substance mefentrifluconazole due to volatilization with subsequent deposition does not have to be considered.

According to the EFSA Conclusion on mefentrifluconazole, route of exposure via air is not relevant for mefentrifluconazole [*EFSA (European Food Safety Authority), 2018. Conclusion on the peer review of the pesticide risk assessment of the active substance BAS 750 F (Mefentrifluconazole). EFSA Journal 2018;16(7):5379, 32 pp. doi:10.2903/j.efsa.2018.5379*]

## 8.10.2 Sulfur

The fate and behaviour of sulfur in air are considered to be data provided in support of the active substance. All relevant detailed experimental information has been submitted for EFSA Scientific Report (2008) 221, 1-70.

**Table 8.10-2: Summary of atmospheric degradation and behaviour**

| Compound | Sulfur |
|---|---|
| Direct photolysis in air [a] | - |
| Quantum yield of direct phototransformation [a] | - |
| Photochemical oxidative degradation in air | - |
| Volatilisation | Vapour pressure [Pa]: 9.8 x $10^{-5}$ (at 20°C)<br>Henry's Law Constant [Pa $m^3$ $mol^{-1}$]: 0.05 (at 20°C)<br>Henry's Law Constant [Pa $m^3$ $mol^{-1}$]: 7.3 x $10^{-9}$ (at 25°C) |
| Metabolites | - |

[a] data not currently available

The vapour pressure of sulfur was determined as 9.8 x $10^{-5}$Pa at 20ºC. It is therefore non-volatile, even if its Henry’s law constant was determined at 0.05 Pa $m^3$/mol, which is due to its very low water solubility. Sulfur is therefore not expected to transfer to the air compartment.

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

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

| Data point | Author(s) | Year | Title<br>Company Report No.<br>Source (where different from company)<br>GLP or GEP status<br>Published or not | Vertebratestudy Y/N | Owner |
|---|---|---|---|---|---|
| KCP 9.1.3/1 | Bouallegue, A. | 2022 | Predicted environmental concentrations of BAS 750 F – mefentrifluconazole and its metabolites in soil, groundwater, surface water and sediment following application to cereals in Central and Southern Europe<br>2022/2057625<br>BASF SE, Limburgerhof, Germany Fed.Rep.<br>no<br>Unpublished | No | BASF |
| KCP 9.2.4.1/1 | Bouallegue, A. | 2022 | Predicted environmental concentrations of BAS 750 F – mefentrifluconazole and its metabolites in soil, groundwater, surface water and sediment following application to cereals in Central and Southern Europe<br>2022/2057625<br>BASF SE, Limburgerhof, Germany Fed.Rep.<br>no<br>Unpublished | No | BASF |
| KCP 9.2.4.1/2 | Chatterjee, U. | 2022 | Predicted environmental concentrations of Sulfur in soil, groundwater, surface water and sediment following application to cereals in Northern Europe<br>2022/2051938<br>M/S Scientific Associates, Hooghly West Bengal, India<br>no<br>Unpublished | No | BASF |
| KCP 9.2.5/1 | Bouallegue, A. | 2022 | Predicted environmental concentrations of BAS 750 F – mefentrifluconazole and its metabolites in soil, groundwater, surface water and sediment following application to cereals in Central and Southern Europe<br>2022/2057625<br>BASF SE, Limburgerhof, Germany Fed.Rep.<br>no<br>Unpublished | No | BASF |
| KCP 9.2.5/2 | Bouallegue, A. | 2023 | Predicted environmental concentrations of Sulfur and sulfate in surface water and sediment following application to cereals in Europe<br>2023/2039638<br>BASF SE, Limburgerhof, Germany Fed.Rep.<br>no<br>Unpublished | No | BASF |

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

BAS 768 00 F is a new product, no product studies have been evaluated previously.

# Appendix 2 Detailed evaluation of the new Annex II studies

No additional studies are provided.

# Appendix 3 Additional information provided by the applicant (e.g. de tailed modelling data)

## Mefentrifluconazole

## Steps 1-2:

**Table A 1 Step 1: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s ha-1 to winter cereals**

| Time * [d] | Step 1 | |
|---|---|---|
| | Multiple application | |
| | PECsw [µg L-1] | |
| | Actual | TWA |
| 0 | 13.728 | - |
| 1 | 12.165 | 12.947 |
| 2 | 12.114 | 12.543 |
| 4 | 12.011 | 12.303 |
| 7 | 11.860 | 12.145 |
| 14 | 11.513 | 11.915 |
| 21 | 11.176 | 11.725 |
| 28 | 10.849 | 11.546 |
| 42 | 10.223 | 11.209 |
| 50 | 9.882 | 11.023 |
| 100 | 7.993 | 9.964 |

* Time = days following maximum concentration (Actual) or time interval (TWA)

**Table A 2 Step 2: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s ha-1 to winter cereals**

| Time * [d] | Step 2 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | March – May | | | | | | | |
| | Northern Europe | | | | Southern Europe | | | |
| | Single application | | Multiple application | | Single application | | Multiple application | |
| | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | Actual | TWA | Actual | TWA | Actual | TWA | Actual | TWA |
| 0 | 1.164 | - | 2.216 | - | 2.102 | - | 4.048 | - |
| 1 | 1.095 | 1.129 | 2.099 | 2.158 | 2.029 | 2.065 | 3.923 | 3.986 |
| 2 | 1.090 | 1.111 | 2.091 | 2.126 | 2.020 | 2.045 | 3.907 | 3.950 |
| 4 | 1.081 | 1.098 | 2.073 | 2.104 | 2.003 | 2.028 | 3.874 | 3.920 |
| 7 | 1.067 | 1.088 | 2.047 | 2.085 | 1.978 | 2.012 | 3.825 | 3.890 |
| 14 | 1.036 | 1.070 | 1.987 | 2.051 | 1.920 | 1.980 | 3.713 | 3.829 |
| 21 | 1.006 | 1.053 | 1.929 | 2.020 | 1.864 | 1.951 | 3.604 | 3.772 |
| 28 | 0.976 | 1.038 | 1.872 | 1.990 | 1.809 | 1.922 | 3.499 | 3.717 |
| 42 | 0.920 | 1.008 | 1.764 | 1.933 | 1.705 | 1.867 | 3.297 | 3.610 |
| 50 | 0.889 | 0.991 | 1.705 | 1.901 | 1.648 | 1.836 | 3.187 | 3.551 |
| 100 | 0.719 | 0.896 | 1.380 | 1.719 | 1.333 | 1.661 | 2.578 | 3.212 |

* Time = days following maximum concentration (Actual) or time interval (TWA)

## Steps 3 – 4:

**Table A 3 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 1 x 100 g a.s. ha-1 to winter cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 1.023 | - | 0.706 | - | 0.561 | - |
| | 1 | 0.842 | 0.935 | 0.614 | 0.661 | 0.510 | 0.536 |
| | 2 | 0.591 | 0.823 | 0.488 | 0.605 | 0.440 | 0.506 |
| | 4 | 0.414 | 0.649 | 0.396 | 0.516 | 0.388 | 0.485 |
| | 7 | 0.381 | 0.541 | 0.375 | 0.475 | 0.371 | 0.475 |
| | 14 | 0.405 | 0.473 | 0.405 | 0.458 | 0.405 | 0.458 |
| | 21 | 0.382 | 0.456 | 0.381 | 0.456 | 0.381 | 0.456 |
| | 28 | 0.351 | 0.457 | 0.351 | 0.457 | 0.350 | 0.457 |
| | 42 | 0.356 | 0.454 | 0.356 | 0.454 | 0.356 | 0.454 |
| | 50 | 0.292 | 0.449 | 0.291 | 0.449 | 0.291 | 0.449 |
| | 100 | 0.111 | 0.415 | 0.110 | 0.415 | 0.110 | 0.415 |
| D1, stream | 0 | 0.732 | - | 0.486 | - | 0.419 | - |
| | 1 | 0.238 | 0.323 | 0.238 | 0.323 | 0.238 | 0.323 |
| | 2 | 0.235 | 0.316 | 0.235 | 0.316 | 0.235 | 0.316 |
| | 4 | 0.229 | 0.302 | 0.232 | 0.308 | 0.229 | 0.302 |
| | 7 | 0.218 | 0.297 | 0.229 | 0.302 | 0.218 | 0.297 |
| | 14 | 0.251 | 0.286 | 0.218 | 0.297 | 0.251 | 0.286 |
| | 21 | 0.231 | 0.285 | 0.251 | 0.286 | 0.231 | 0.285 |
| | 28 | 0.182 | 0.285 | 0.231 | 0.285 | 0.182 | 0.285 |
| | 42 | 0.198 | 0.283 | 0.182 | 0.285 | 0.198 | 0.283 |
| | 50 | 0.009 | 0.279 | 0.198 | 0.283 | 0.009 | 0.279 |
| | 100 | 0.001 | 0.250 | 0.009 | 0.279 | 0.001 | 0.250 |
| D2, ditch | 0 | 0.849 | - | 0.793 | - | 0.793 | - |
| | 1 | 0.763 | 0.804 | 0.327 | 0.567 | 0.327 | 0.567 |
| | 2 | 0.668 | 0.765 | 0.271 | 0.503 | 0.271 | 0.503 |
| | 4 | 0.324 | 0.619 | 0.305 | 0.460 | 0.442 | 0.497 |
| | 7 | 0.247 | 0.470 | 0.743 | 0.436 | 0.305 | 0.460 |
| | 14 | 0.324 | 0.421 | 0.236 | 0.421 | 0.743 | 0.436 |
| | 21 | 0.243 | 0.400 | 0.620 | 0.400 | 0.236 | 0.421 |
| | 28 | 0.210 | 0.380 | 0.406 | 0.380 | 0.620 | 0.400 |
| | 42 | 0.300 | 0.368 | 0.200 | 0.368 | 0.406 | 0.380 |
| | 50 | 0.236 | 0.359 | 0.178 | 0.359 | 0.200 | 0.368 |
| | 100 | 0.147 | 0.329 | 0.237 | 0.329 | 0.178 | 0.359 |
| D2, stream | 0 | 0.657 | - | 0.495 | - | 0.495 | - |
| | 1 | 0.113 | 0.332 | 0.187 | 0.332 | 0.187 | 0.332 |
| | 2 | 0.186 | 0.283 | 0.164 | 0.283 | 0.164 | 0.283 |
| | 4 | 0.145 | 0.267 | 0.172 | 0.267 | 0.172 | 0.267 |
| | 7 | 0.115 | 0.255 | 0.472 | 0.255 | 0.472 | 0.255 |
| | 14 | 0.181 | 0.244 | 0.147 | 0.244 | 0.147 | 0.244 |
| | 21 | 0.129 | 0.230 | 0.403 | 0.230 | 0.403 | 0.230 |
| | 28 | 0.111 | 0.216 | 0.282 | 0.216 | 0.282 | 0.216 |
| | 42 | 0.128 | 0.212 | 0.117 | 0.212 | 0.117 | 0.212 |
| | 50 | 0.119 | 0.208 | 0.105 | 0.208 | 0.105 | 0.208 |
| | 100 | 0.083 | 0.187 | 0.116 | 0.187 | 0.116 | 0.187 |
| D3, ditch | 0 | 0.632 | - | 0.316 | - | 0.171 | - |
| | 1 | 0.289 | 0.485 | 0.144 | 0.243 | 0.078 | 0.131 |
| | 2 | 0.036 | 0.306 | 0.018 | 0.153 | 0.010 | 0.083 |
| | 4 | 0.004 | 0.158 | 0.002 | 0.079 | 0.001 | 0.043 |
| | 7 | 0.002 | 0.091 | 0.001 | 0.046 | 0.001 | 0.025 |
| | 14 | 0.001 | 0.046 | <0.001 | 0.023 | <0.001 | 0.013 |
| | 21 | <0.001 | 0.031 | <0.001 | 0.016 | <0.001 | 0.008 |
| | 28 | <0.001 | 0.023 | <0.001 | 0.012 | <0.001 | 0.006 |

**Table A 3 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to winter cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 42 | <0.001 | 0.016 | <0.001 | 0.008 | <0.001 | 0.004 |
| | 50 | <0.001 | 0.013 | <0.001 | 0.007 | <0.001 | 0.004 |
| | 100 | <0.001 | 0.007 | <0.001 | 0.003 | <0.001 | 0.002 |
| D4, pond | 0 | 0.034 | - | 0.032 | - | 0.034 | - |
| | 1 | 0.033 | 0.034 | 0.032 | 0.032 | 0.033 | 0.033 |
| | 2 | 0.032 | 0.033 | 0.031 | 0.032 | 0.032 | 0.033 |
| | 4 | 0.030 | 0.033 | 0.029 | 0.031 | 0.030 | 0.032 |
| | 7 | 0.028 | 0.031 | 0.027 | 0.030 | 0.028 | 0.031 |
| | 14 | 0.025 | 0.029 | 0.024 | 0.028 | 0.025 | 0.029 |
| | 21 | 0.022 | 0.028 | 0.021 | 0.027 | 0.022 | 0.028 |
| | 28 | 0.020 | 0.026 | 0.019 | 0.025 | 0.020 | 0.026 |
| | 42 | 0.018 | 0.024 | 0.017 | 0.023 | 0.017 | 0.024 |
| | 50 | 0.016 | 0.023 | 0.015 | 0.022 | 0.015 | 0.023 |
| | 100 | 0.011 | 0.018 | 0.010 | 0.017 | 0.011 | 0.018 |
| D4, stream | 0 | 0.467 | - | 0.233 | - | 0.171 | - |
| | 1 | <0.001 | 0.065 | <0.001 | 0.065 | <0.001 | 0.065 |
| | 2 | <0.001 | 0.060 | <0.001 | 0.060 | <0.001 | 0.060 |
| | 4 | <0.001 | 0.044 | <0.001 | 0.044 | <0.001 | 0.044 |
| | 7 | <0.001 | 0.032 | <0.001 | 0.032 | <0.001 | 0.032 |
| | 14 | <0.001 | 0.017 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 21 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 28 | <0.001 | 0.009 | <0.001 | 0.009 | <0.001 | 0.009 |
| | 42 | <0.001 | 0.006 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 50 | <0.001 | 0.005 | <0.001 | 0.005 | <0.001 | 0.005 |
| | 100 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| D5, pond | 0 | 0.023 | - | 0.013 | - | 0.021 | - |
| | 1 | 0.023 | 0.023 | 0.012 | 0.012 | 0.020 | 0.020 |
| | 2 | 0.022 | 0.023 | 0.012 | 0.012 | 0.019 | 0.020 |
| | 4 | 0.021 | 0.022 | 0.011 | 0.012 | 0.018 | 0.019 |
| | 7 | 0.020 | 0.021 | 0.011 | 0.012 | 0.017 | 0.019 |
| | 14 | 0.018 | 0.020 | 0.010 | 0.011 | 0.016 | 0.018 |
| | 21 | 0.017 | 0.019 | 0.009 | 0.010 | 0.015 | 0.017 |
| | 28 | 0.016 | 0.019 | 0.009 | 0.010 | 0.014 | 0.016 |
| | 42 | 0.015 | 0.017 | 0.008 | 0.009 | 0.013 | 0.015 |
| | 50 | 0.014 | 0.017 | 0.008 | 0.009 | 0.012 | 0.015 |
| | 100 | 0.010 | 0.014 | 0.006 | 0.008 | 0.009 | 0.013 |
| D5, stream | 0 | 0.504 | - | 0.252 | - | 0.184 | - |
| | 1 | <0.001 | 0.019 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 2 | <0.001 | 0.009 | <0.001 | 0.008 | <0.001 | 0.008 |
| | 4 | <0.001 | 0.006 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 7 | <0.001 | 0.004 | <0.001 | 0.004 | <0.001 | 0.004 |
| | 14 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| | 21 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 28 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 42 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 50 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 100 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| D6, ditch | 0 | 0.627 | - | 0.325 | - | 0.325 | - |
| | 1 | 0.021 | 0.273 | 0.057 | 0.172 | 0.057 | 0.172 |
| | 2 | 0.003 | 0.139 | 0.023 | 0.111 | 0.023 | 0.111 |
| | 4 | 0.002 | 0.072 | 0.009 | 0.064 | 0.009 | 0.064 |
| | 7 | 0.001 | 0.042 | 0.004 | 0.040 | 0.004 | 0.040 |
| | 14 | 0.001 | 0.028 | 0.001 | 0.024 | 0.001 | 0.024 |

**Table A 3 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to winter cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 21 | <0.001 | 0.030 | <0.001 | 0.024 | <0.001 | 0.021 |
| | 28 | <0.001 | 0.023 | <0.001 | 0.018 | <0.001 | 0.017 |
| | 42 | <0.001 | 0.016 | 0.002 | 0.015 | 0.002 | 0.015 |
| | 50 | <0.001 | 0.013 | 0.001 | 0.012 | 0.001 | 0.012 |
| | 100 | <0.001 | 0.008 | <0.001 | 0.008 | <0.001 | 0.008 |
| R1, pond | 0 | 0.043 | - | 0.039 | - | 0.042 | - |
| | 1 | 0.042 | 0.043 | 0.038 | 0.039 | 0.041 | 0.041 |
| | 2 | 0.042 | 0.042 | 0.038 | 0.038 | 0.040 | 0.041 |
| | 4 | 0.040 | 0.042 | 0.037 | 0.038 | 0.039 | 0.040 |
| | 7 | 0.039 | 0.041 | 0.036 | 0.037 | 0.037 | 0.040 |
| | 14 | 0.036 | 0.039 | 0.035 | 0.037 | 0.034 | 0.038 |
| | 21 | 0.033 | 0.038 | 0.033 | 0.036 | 0.032 | 0.038 |
| | 28 | 0.032 | 0.038 | 0.031 | 0.036 | 0.031 | 0.037 |
| | 42 | 0.032 | 0.036 | 0.028 | 0.034 | 0.031 | 0.036 |
| | 50 | 0.029 | 0.035 | 0.026 | 0.033 | 0.028 | 0.035 |
| | 100 | 0.036 | 0.033 | 0.023 | 0.029 | 0.036 | 0.032 |
| R1, stream | 0 | 0.416 | - | 0.217 | - | 0.217 | - |
| | 1 | <0.001 | 0.140 | <0.001 | 0.140 | <0.001 | 0.140 |
| | 2 | <0.001 | 0.071 | <0.001 | 0.071 | <0.001 | 0.071 |
| | 4 | <0.001 | 0.035 | 0.002 | 0.035 | 0.002 | 0.035 |
| | 7 | <0.001 | 0.029 | <0.001 | 0.029 | <0.001 | 0.029 |
| | 14 | <0.001 | 0.023 | 0.035 | 0.023 | 0.035 | 0.023 |
| | 21 | <0.001 | 0.017 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 28 | 0.003 | 0.014 | <0.001 | 0.014 | <0.001 | 0.014 |
| | 42 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 50 | <0.001 | 0.011 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 100 | <0.001 | 0.008 | <0.001 | 0.007 | <0.001 | 0.007 |
| R3, stream | 0 | 0.585 | - | 0.292 | - | 0.244 | - |
| | 1 | 0.001 | 0.215 | <0.001 | 0.215 | 0.002 | 0.215 |
| | 2 | <0.001 | 0.117 | <0.001 | 0.117 | 0.001 | 0.117 |
| | 4 | <0.001 | 0.059 | <0.001 | 0.059 | 0.001 | 0.059 |
| | 7 | <0.001 | 0.034 | <0.001 | 0.034 | 0.001 | 0.034 |
| | 14 | <0.001 | 0.022 | <0.001 | 0.022 | <0.001 | 0.022 |
| | 21 | <0.001 | 0.018 | <0.001 | 0.018 | <0.001 | 0.018 |
| | 28 | 0.001 | 0.016 | 0.001 | 0.016 | <0.001 | 0.016 |
| | 42 | <0.001 | 0.015 | <0.001 | 0.015 | <0.001 | 0.015 |
| | 50 | 0.001 | 0.012 | 0.001 | 0.012 | <0.001 | 0.012 |
| | 100 | <0.001 | 0.008 | <0.001 | 0.007 | <0.001 | 0.007 |
| R4, stream | 0 | 0.418 | - | 0.368 | - | 0.368 | - |
| | 1 | <0.001 | 0.290 | 0.001 | 0.290 | 0.001 | 0.290 |
| | 2 | <0.001 | 0.212 | <0.001 | 0.212 | <0.001 | 0.212 |
| | 4 | <0.001 | 0.107 | 0.001 | 0.107 | 0.001 | 0.107 |
| | 7 | <0.001 | 0.061 | <0.001 | 0.061 | <0.001 | 0.061 |
| | 14 | <0.001 | 0.032 | <0.001 | 0.032 | <0.001 | 0.032 |
| | 21 | <0.001 | 0.022 | <0.001 | 0.022 | <0.001 | 0.022 |
| | 28 | <0.001 | 0.025 | 0.081 | 0.025 | 0.081 | 0.025 |
| | 42 | <0.001 | 0.020 | <0.001 | 0.020 | <0.001 | 0.020 |
| | 50 | <0.001 | 0.017 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 100 | <0.001 | 0.011 | <0.001 | 0.010 | <0.001 | 0.010 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 4 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 1 x 100 g a.s. ha-1 to winter cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 0.780 | - | 0.461 | - | 0.408 | - |
| | 1 | 0.719 | 0.748 | 0.429 | 0.444 | 0.397 | 0.403 |
| | 2 | 0.671 | 0.721 | 0.403 | 0.430 | 0.389 | 0.398 |
| | 4 | 0.602 | 0.678 | 0.366 | 0.407 | 0.395 | 0.395 |
| | 7 | 0.537 | 0.630 | 0.330 | 0.392 | 0.379 | 0.391 |
| | 14 | 0.445 | 0.559 | 0.276 | 0.382 | 0.370 | 0.382 |
| | 21 | 0.374 | 0.509 | 0.235 | 0.380 | 0.370 | 0.379 |
| | 28 | 0.316 | 0.468 | 0.200 | 0.377 | 0.368 | 0.377 |
| | 42 | 0.228 | 0.401 | 0.148 | 0.372 | 0.348 | 0.372 |
| | 50 | 0.192 | 0.371 | 0.126 | 0.368 | 0.337 | 0.368 |
| | 100 | 0.080 | 0.340 | 0.056 | 0.340 | 0.206 | 0.339 |
| D1, stream | 0 | 0.561 | - | 0.281 | - | 0.255 | - |
| | 1 | 0.178 | 0.434 | 0.090 | 0.252 | 0.248 | 0.252 |
| | 2 | 0.011 | 0.249 | 0.006 | 0.249 | 0.244 | 0.249 |
| | 4 | 0.004 | 0.247 | 0.002 | 0.247 | 0.247 | 0.247 |
| | 7 | 0.002 | 0.245 | 0.002 | 0.245 | 0.236 | 0.245 |
| | 14 | 0.001 | 0.239 | 0.001 | 0.239 | 0.230 | 0.239 |
| | 21 | 0.001 | 0.237 | 0.001 | 0.237 | 0.231 | 0.237 |
| | 28 | 0.001 | 0.235 | 0.001 | 0.235 | 0.229 | 0.235 |
| | 42 | 0.001 | 0.232 | 0.001 | 0.232 | 0.214 | 0.232 |
| | 50 | 0.001 | 0.229 | 0.001 | 0.229 | 0.214 | 0.229 |
| | 100 | <0.001 | 0.205 | <0.001 | 0.205 | 0.004 | 0.205 |
| D2, ditch | 0 | 0.731 | - | 0.514 | - | 0.514 | - |
| | 1 | 0.671 | 0.700 | 0.352 | 0.395 | 0.352 | 0.367 |
| | 2 | 0.624 | 0.673 | 0.237 | 0.382 | 0.237 | 0.300 |
| | 4 | 0.558 | 0.631 | 0.120 | 0.360 | 0.120 | 0.282 |
| | 7 | 0.497 | 0.585 | 0.102 | 0.336 | 0.102 | 0.272 |
| | 14 | 0.419 | 0.519 | 0.112 | 0.301 | 0.112 | 0.259 |
| | 21 | 0.372 | 0.478 | 0.276 | 0.279 | 0.276 | 0.245 |
| | 28 | 0.337 | 0.447 | 0.119 | 0.262 | 0.119 | 0.229 |
| | 42 | 0.285 | 0.401 | 0.090 | 0.236 | 0.090 | 0.225 |
| | 50 | 0.262 | 0.380 | 0.148 | 0.225 | 0.148 | 0.220 |
| | 100 | 0.184 | 0.301 | 0.243 | 0.202 | 0.166 | 0.201 |
| D2, stream | 0 | 0.619 | - | 0.335 | - | 0.325 | - |
| | 1 | 0.566 | 0.591 | 0.308 | 0.321 | 0.084 | 0.248 |
| | 2 | 0.526 | 0.568 | 0.287 | 0.309 | 0.076 | 0.239 |
| | 4 | 0.468 | 0.531 | 0.258 | 0.290 | 0.069 | 0.225 |
| | 7 | 0.415 | 0.492 | 0.231 | 0.270 | 0.065 | 0.211 |
| | 14 | 0.344 | 0.434 | 0.193 | 0.240 | 0.073 | 0.188 |
| | 21 | 0.291 | 0.395 | 0.165 | 0.220 | 0.079 | 0.173 |
| | 28 | 0.248 | 0.363 | 0.142 | 0.203 | 0.066 | 0.160 |
| | 42 | 0.181 | 0.313 | 0.106 | 0.176 | 0.050 | 0.140 |
| | 50 | 0.154 | 0.290 | 0.090 | 0.164 | 0.046 | 0.130 |
| | 100 | 0.070 | 0.194 | 0.061 | 0.119 | 0.310 | 0.112 |
| D3, ditch | 0 | 0.634 | - | 0.317 | - | 0.172 | - |
| | 1 | 0.455 | 0.547 | 0.228 | 0.274 | 0.123 | 0.148 |
| | 2 | 0.194 | 0.435 | 0.097 | 0.217 | 0.053 | 0.118 |
| | 4 | 0.020 | 0.254 | 0.010 | 0.127 | 0.005 | 0.069 |
| | 7 | 0.006 | 0.150 | 0.003 | 0.075 | 0.002 | 0.041 |
| | 14 | 0.002 | 0.077 | 0.001 | 0.038 | 0.001 | 0.021 |
| | 21 | 0.001 | 0.052 | 0.001 | 0.026 | <0.001 | 0.014 |
| | 28 | 0.001 | 0.039 | <0.001 | 0.019 | <0.001 | 0.011 |
| | 42 | <0.001 | 0.026 | <0.001 | 0.013 | <0.001 | 0.007 |
| | 50 | <0.001 | 0.022 | <0.001 | 0.011 | <0.001 | 0.006 |

**Table A 4 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 1 x 100 g a.s. ha-1 to winter cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 100 | <0.001 | 0.011 | <0.001 | 0.005 | <0.001 | 0.003 |
| D4, pond | 0 | 0.022 | - | 0.019 | - | 0.021 | - |
| | 1 | 0.021 | 0.022 | 0.019 | 0.019 | 0.021 | 0.021 |
| | 2 | 0.021 | 0.022 | 0.018 | 0.019 | 0.020 | 0.021 |
| | 4 | 0.020 | 0.021 | 0.017 | 0.019 | 0.019 | 0.020 |
| | 7 | 0.018 | 0.020 | 0.016 | 0.018 | 0.018 | 0.020 |
| | 14 | 0.016 | 0.019 | 0.014 | 0.017 | 0.016 | 0.019 |
| | 21 | 0.015 | 0.018 | 0.013 | 0.016 | 0.014 | 0.018 |
| | 28 | 0.013 | 0.017 | 0.012 | 0.015 | 0.013 | 0.017 |
| | 42 | 0.012 | 0.016 | 0.010 | 0.014 | 0.011 | 0.015 |
| | 50 | 0.010 | 0.015 | 0.009 | 0.013 | 0.010 | 0.015 |
| | 100 | 0.008 | 0.013 | 0.006 | 0.010 | 0.007 | 0.012 |
| D4, stream | 0 | 0.546 | - | 0.273 | - | 0.200 | - |
| | 1 | <0.001 | 0.157 | <0.001 | 0.078 | <0.001 | 0.057 |
| | 2 | <0.001 | 0.078 | <0.001 | 0.039 | <0.001 | 0.032 |
| | 4 | <0.001 | 0.039 | <0.001 | 0.023 | <0.001 | 0.023 |
| | 7 | <0.001 | 0.023 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 14 | <0.001 | 0.011 | <0.001 | 0.009 | <0.001 | 0.009 |
| | 21 | <0.001 | 0.008 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 28 | <0.001 | 0.006 | <0.001 | 0.005 | <0.001 | 0.005 |
| | 42 | <0.001 | 0.004 | <0.001 | 0.003 | <0.001 | 0.003 |
| | 50 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| | 100 | <0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.001 |
| D5, pond | 0 | 0.023 | - | 0.012 | - | 0.020 | - |
| | 1 | 0.022 | 0.022 | 0.011 | 0.012 | 0.019 | 0.019 |
| | 2 | 0.021 | 0.022 | 0.011 | 0.011 | 0.019 | 0.019 |
| | 4 | 0.020 | 0.021 | 0.011 | 0.011 | 0.018 | 0.019 |
| | 7 | 0.019 | 0.021 | 0.010 | 0.011 | 0.017 | 0.018 |
| | 14 | 0.018 | 0.020 | 0.009 | 0.010 | 0.016 | 0.017 |
| | 21 | 0.017 | 0.019 | 0.009 | 0.010 | 0.015 | 0.016 |
| | 28 | 0.016 | 0.018 | 0.008 | 0.010 | 0.014 | 0.016 |
| | 42 | 0.014 | 0.017 | 0.007 | 0.009 | 0.012 | 0.015 |
| | 50 | 0.014 | 0.017 | 0.007 | 0.009 | 0.012 | 0.014 |
| | 100 | 0.010 | 0.014 | 0.005 | 0.007 | 0.009 | 0.012 |
| D5, stream | 0 | 0.590 | - | 0.295 | - | 0.215 | - |
| | 1 | 0.003 | 0.223 | 0.002 | 0.112 | 0.001 | 0.081 |
| | 2 | 0.001 | 0.112 | <0.001 | 0.056 | <0.001 | 0.041 |
| | 4 | <0.001 | 0.056 | <0.001 | 0.028 | <0.001 | 0.021 |
| | 7 | <0.001 | 0.032 | <0.001 | 0.016 | <0.001 | 0.012 |
| | 14 | <0.001 | 0.016 | <0.001 | 0.008 | <0.001 | 0.006 |
| | 21 | <0.001 | 0.011 | <0.001 | 0.005 | <0.001 | 0.004 |
| | 28 | <0.001 | 0.008 | <0.001 | 0.004 | <0.001 | 0.003 |
| | 42 | <0.001 | 0.005 | <0.001 | 0.003 | <0.001 | 0.002 |
| | 50 | <0.001 | 0.005 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 100 | <0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.001 |
| D6, ditch | 0 | 0.635 | - | 0.318 | - | 0.176 | - |
| | 1 | 0.523 | 0.576 | 0.261 | 0.288 | 0.027 | 0.156 |
| | 2 | 0.381 | 0.516 | 0.191 | 0.258 | 0.012 | 0.140 |
| | 4 | 0.155 | 0.383 | 0.077 | 0.192 | 0.005 | 0.104 |
| | 7 | 0.069 | 0.262 | 0.035 | 0.131 | 0.002 | 0.071 |
| | 14 | 0.023 | 0.151 | 0.012 | 0.076 | <0.001 | 0.041 |
| | 21 | 0.010 | 0.106 | 0.005 | 0.053 | <0.001 | 0.029 |
| | 28 | 0.006 | 0.081 | 0.003 | 0.041 | <0.001 | 0.022 |

**Table A 4 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 1 x 100 g a.s. ha-1 to winter cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 42 | 0.003 | 0.056 | 0.001 | 0.028 | 0.001 | 0.015 |
| | 50 | 0.002 | 0.047 | 0.001 | 0.024 | 0.001 | 0.013 |
| | 100 | <0.001 | 0.025 | <0.001 | 0.013 | <0.001 | 0.008 |
| R1, pond | 0 | 0.069 | - | 0.063 | - | 0.068 | - |
| | 1 | 0.067 | 0.068 | 0.062 | 0.063 | 0.066 | 0.067 |
| | 2 | 0.066 | 0.068 | 0.061 | 0.062 | 0.065 | 0.066 |
| | 4 | 0.064 | 0.066 | 0.058 | 0.061 | 0.062 | 0.065 |
| | 7 | 0.061 | 0.065 | 0.055 | 0.059 | 0.059 | 0.063 |
| | 14 | 0.061 | 0.064 | 0.057 | 0.059 | 0.060 | 0.062 |
| | 21 | 0.056 | 0.062 | 0.052 | 0.057 | 0.055 | 0.061 |
| | 28 | 0.052 | 0.060 | 0.048 | 0.055 | 0.051 | 0.059 |
| | 42 | 0.046 | 0.057 | 0.042 | 0.052 | 0.045 | 0.055 |
| | 50 | 0.042 | 0.055 | 0.039 | 0.050 | 0.042 | 0.053 |
| | 100 | 0.029 | 0.047 | 0.027 | 0.042 | 0.029 | 0.045 |
| R1, stream | 0 | 0.418 | - | 0.231 | - | 0.231 | - |
| | 1 | <0.001 | 0.188 | 0.001 | 0.188 | 0.001 | 0.188 |
| | 2 | <0.001 | 0.095 | 0.001 | 0.095 | 0.001 | 0.095 |
| | 4 | <0.001 | 0.048 | <0.001 | 0.048 | <0.001 | 0.048 |
| | 7 | <0.001 | 0.039 | <0.001 | 0.039 | <0.001 | 0.039 |
| | 14 | <0.001 | 0.024 | <0.001 | 0.024 | <0.001 | 0.024 |
| | 21 | <0.001 | 0.018 | <0.001 | 0.018 | <0.001 | 0.018 |
| | 28 | <0.001 | 0.019 | <0.001 | 0.019 | <0.001 | 0.019 |
| | 42 | <0.001 | 0.015 | <0.001 | 0.015 | <0.001 | 0.015 |
| | 50 | <0.001 | 0.014 | <0.001 | 0.013 | <0.001 | 0.013 |
| | 100 | <0.001 | 0.008 | <0.001 | 0.007 | <0.001 | 0.007 |
| R3, stream | 0 | 0.585 | - | 0.293 | - | 0.241 | - |
| | 1 | 0.001 | 0.168 | <0.001 | 0.138 | 0.002 | 0.138 |
| | 2 | <0.001 | 0.084 | <0.001 | 0.071 | 0.001 | 0.071 |
| | 4 | <0.001 | 0.044 | <0.001 | 0.036 | 0.088 | 0.036 |
| | 7 | 0.001 | 0.044 | <0.001 | 0.034 | <0.001 | 0.034 |
| | 14 | <0.001 | 0.030 | <0.001 | 0.024 | <0.001 | 0.022 |
| | 21 | <0.001 | 0.020 | <0.001 | 0.016 | <0.001 | 0.015 |
| | 28 | <0.001 | 0.015 | <0.001 | 0.012 | <0.001 | 0.011 |
| | 42 | <0.001 | 0.011 | <0.001 | 0.009 | <0.001 | 0.008 |
| | 50 | <0.001 | 0.009 | <0.001 | 0.009 | <0.001 | 0.009 |
| | 100 | <0.001 | 0.007 | <0.001 | 0.006 | <0.001 | 0.006 |
| R4, stream | 0 | 0.418 | - | 0.331 | - | 0.331 | - |
| | 1 | <0.001 | 0.306 | 0.316 | 0.306 | 0.316 | 0.306 |
| | 2 | <0.001 | 0.270 | 0.002 | 0.270 | 0.002 | 0.270 |
| | 4 | <0.001 | 0.142 | 0.001 | 0.142 | 0.001 | 0.142 |
| | 7 | <0.001 | 0.108 | 0.129 | 0.108 | 0.129 | 0.108 |
| | 14 | 0.331 | 0.075 | <0.001 | 0.075 | <0.001 | 0.075 |
| | 21 | 0.251 | 0.052 | <0.001 | 0.050 | <0.001 | 0.050 |
| | 28 | <0.001 | 0.041 | <0.001 | 0.039 | <0.001 | 0.039 |
| | 42 | <0.001 | 0.027 | <0.001 | 0.026 | <0.001 | 0.026 |
| | 50 | <0.001 | 0.023 | <0.001 | 0.022 | <0.001 | 0.022 |
| | 100 | <0.001 | 0.011 | <0.001 | 0.011 | <0.001 | 0.011 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 5 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to winter cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [μg L-1] | | PECsw [μg L-1] | | PECsw [μg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 1.355 | - | 1.078 | - | 1.060 | - |
| | 1 | 1.194 | 1.276 | 0.995 | 1.037 | 1.011 | 1.031 |
| | 2 | 0.972 | 1.215 | 0.882 | 1.010 | 0.951 | 1.010 |
| | 4 | 0.810 | 1.161 | 0.794 | 0.972 | 0.927 | 0.972 |
| | 7 | 0.769 | 1.095 | 0.763 | 0.959 | 0.901 | 0.959 |
| | 14 | 0.831 | 0.976 | 0.831 | 0.927 | 0.867 | 0.927 |
| | 21 | 0.784 | 0.922 | 0.783 | 0.922 | 0.838 | 0.922 |
| | 28 | 1.213 | 0.923 | 0.966 | 0.923 | 0.830 | 0.923 |
| | 42 | 0.766 | 0.915 | 0.748 | 0.915 | 0.805 | 0.915 |
| | 50 | 0.644 | 0.905 | 0.621 | 0.905 | 0.772 | 0.905 |
| | 100 | 0.245 | 0.837 | 0.235 | 0.837 | 0.755 | 0.837 |
| D1, stream | 0 | 0.919 | - | 0.706 | - | 0.665 | - |
| | 1 | 0.491 | 0.644 | 0.491 | 0.644 | 0.630 | 0.644 |
| | 2 | 0.483 | 0.631 | 0.483 | 0.631 | 0.591 | 0.631 |
| | 4 | 0.471 | 0.608 | 0.471 | 0.608 | 0.578 | 0.608 |
| | 7 | 0.450 | 0.599 | 0.450 | 0.599 | 0.560 | 0.599 |
| | 14 | 0.515 | 0.579 | 0.515 | 0.579 | 0.533 | 0.579 |
| | 21 | 0.474 | 0.575 | 0.474 | 0.575 | 0.510 | 0.575 |
| | 28 | 0.373 | 0.576 | 0.373 | 0.576 | 0.504 | 0.576 |
| | 42 | 0.409 | 0.570 | 0.409 | 0.570 | 0.496 | 0.570 |
| | 50 | 0.018 | 0.563 | 0.018 | 0.563 | 0.459 | 0.563 |
| | 100 | 0.002 | 0.504 | 0.002 | 0.504 | 0.465 | 0.504 |
| D2, ditch | 0 | 1.569 | - | 1.569 | - | 1.569 | - |
| | 1 | 0.635 | 1.148 | 0.635 | 1.137 | 0.635 | 1.132 |
| | 2 | 0.527 | 0.985 | 0.527 | 0.985 | 0.527 | 0.985 |
| | 4 | 0.593 | 0.914 | 0.593 | 0.914 | 0.593 | 0.914 |
| | 7 | 1.467 | 0.878 | 1.467 | 0.878 | 1.467 | 0.878 |
| | 14 | 0.460 | 0.846 | 0.460 | 0.846 | 0.460 | 0.846 |
| | 21 | 1.221 | 0.802 | 1.221 | 0.802 | 1.221 | 0.802 |
| | 28 | 0.792 | 0.761 | 0.792 | 0.761 | 0.792 | 0.761 |
| | 42 | 0.392 | 0.735 | 0.392 | 0.735 | 0.392 | 0.735 |
| | 50 | 0.349 | 0.718 | 0.349 | 0.718 | 0.349 | 0.718 |
| | 100 | 0.462 | 0.656 | 0.453 | 0.656 | 0.449 | 0.656 |
| D2, stream | 0 | 0.980 | - | 0.980 | - | 0.980 | - |
| | 1 | 0.364 | 0.683 | 0.364 | 0.662 | 0.364 | 0.662 |
| | 2 | 0.319 | 0.654 | 0.319 | 0.566 | 0.319 | 0.566 |
| | 4 | 0.334 | 0.621 | 0.334 | 0.537 | 0.334 | 0.537 |
| | 7 | 0.932 | 0.598 | 0.932 | 0.512 | 0.932 | 0.512 |
| | 14 | 0.286 | 0.493 | 0.286 | 0.488 | 0.286 | 0.488 |
| | 21 | 0.794 | 0.460 | 0.794 | 0.460 | 0.794 | 0.460 |
| | 28 | 0.551 | 0.430 | 0.551 | 0.430 | 0.551 | 0.430 |
| | 42 | 0.230 | 0.424 | 0.230 | 0.424 | 0.230 | 0.424 |
| | 50 | 0.206 | 0.415 | 0.206 | 0.415 | 0.206 | 0.415 |
| | 100 | 0.227 | 0.373 | 0.227 | 0.373 | 0.227 | 0.373 |
| D3, ditch | 0 | 0.553 | - | 0.277 | - | 0.144 | - |
| | 1 | 0.290 | 0.439 | 0.145 | 0.220 | 0.075 | 0.114 |
| | 2 | 0.048 | 0.291 | 0.024 | 0.145 | 0.012 | 0.075 |
| | 4 | 0.005 | 0.152 | 0.002 | 0.076 | 0.001 | 0.039 |
| | 7 | 0.002 | 0.088 | 0.001 | 0.044 | 0.001 | 0.023 |
| | 14 | 0.001 | 0.045 | <0.001 | 0.022 | <0.001 | 0.012 |
| | 21 | <0.001 | 0.056 | <0.001 | 0.028 | <0.001 | 0.015 |
| | 28 | <0.001 | 0.043 | <0.001 | 0.021 | <0.001 | 0.011 |
| | 42 | <0.001 | 0.029 | <0.001 | 0.014 | <0.001 | 0.007 |
| | 50 | <0.001 | 0.024 | <0.001 | 0.012 | <0.001 | 0.006 |

**Table A 5 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to winter cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 100 | <0.001 | 0.012 | <0.001 | 0.006 | <0.001 | 0.003 |
| D4, pond | 0 | 0.069 | - | 0.066 | - | 0.068 | - |
| | 1 | 0.067 | 0.069 | 0.065 | 0.066 | 0.067 | 0.068 |
| | 2 | 0.065 | 0.068 | 0.063 | 0.065 | 0.064 | 0.067 |
| | 4 | 0.061 | 0.066 | 0.059 | 0.064 | 0.061 | 0.066 |
| | 7 | 0.057 | 0.064 | 0.054 | 0.061 | 0.056 | 0.063 |
| | 14 | 0.052 | 0.060 | 0.049 | 0.057 | 0.051 | 0.059 |
| | 21 | 0.045 | 0.057 | 0.044 | 0.054 | 0.045 | 0.056 |
| | 28 | 0.042 | 0.054 | 0.040 | 0.052 | 0.041 | 0.053 |
| | 42 | 0.036 | 0.049 | 0.034 | 0.047 | 0.036 | 0.049 |
| | 50 | 0.032 | 0.047 | 0.030 | 0.045 | 0.031 | 0.047 |
| | 100 | 0.023 | 0.037 | 0.021 | 0.035 | 0.022 | 0.037 |
| D4, stream | 0 | 0.417 | - | 0.243 | - | 0.243 | - |
| | 1 | <0.001 | 0.133 | 0.022 | 0.133 | 0.022 | 0.133 |
| | 2 | <0.001 | 0.123 | 0.194 | 0.123 | 0.194 | 0.123 |
| | 4 | <0.001 | 0.090 | 0.003 | 0.090 | 0.003 | 0.090 |
| | 7 | <0.001 | 0.066 | 0.001 | 0.066 | 0.001 | 0.066 |
| | 14 | <0.001 | 0.034 | 0.015 | 0.034 | 0.015 | 0.034 |
| | 21 | <0.001 | 0.025 | <0.001 | 0.025 | <0.001 | 0.025 |
| | 28 | <0.001 | 0.019 | <0.001 | 0.019 | <0.001 | 0.019 |
| | 42 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 50 | <0.001 | 0.010 | <0.001 | 0.010 | <0.001 | 0.010 |
| | 100 | <0.001 | 0.005 | <0.001 | 0.005 | <0.001 | 0.005 |
| D5, pond | 0 | 0.035 | - | 0.020 | - | 0.030 | - |
| | 1 | 0.034 | 0.034 | 0.020 | 0.020 | 0.029 | 0.030 |
| | 2 | 0.033 | 0.034 | 0.019 | 0.020 | 0.029 | 0.030 |
| | 4 | 0.032 | 0.033 | 0.018 | 0.019 | 0.028 | 0.029 |
| | 7 | 0.031 | 0.032 | 0.017 | 0.019 | 0.027 | 0.028 |
| | 14 | 0.029 | 0.031 | 0.016 | 0.018 | 0.025 | 0.027 |
| | 21 | 0.027 | 0.030 | 0.015 | 0.017 | 0.024 | 0.026 |
| | 28 | 0.026 | 0.029 | 0.014 | 0.016 | 0.023 | 0.025 |
| | 42 | 0.024 | 0.028 | 0.012 | 0.015 | 0.021 | 0.024 |
| | 50 | 0.022 | 0.027 | 0.011 | 0.015 | 0.020 | 0.023 |
| | 100 | 0.017 | 0.023 | -** | 0.013 | 0.015 | 0.020 |
| D5, stream | 0 | 0.482 | - | 0.241 | - | 0.170 | - |
| | 1 | <0.001 | 0.047 | <0.001 | 0.023 | <0.001 | 0.022 |
| | 2 | <0.001 | 0.023 | <0.001 | 0.016 | <0.001 | 0.016 |
| | 4 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 7 | <0.001 | 0.009 | <0.001 | 0.009 | <0.001 | 0.009 |
| | 14 | <0.001 | 0.006 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 21 | <0.001 | 0.004 | <0.001 | 0.004 | <0.001 | 0.004 |
| | 28 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| | 42 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 50 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 100 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| D6, ditch | 0 | 0.586 | - | 0.586 | - | 0.586 | - |
| | 1 | 0.087 | 0.505 | 0.087 | 0.294 | 0.087 | 0.294 |
| | 2 | 0.034 | 0.441 | 0.034 | 0.221 | 0.034 | 0.185 |
| | 4 | 0.014 | 0.288 | 0.014 | 0.144 | 0.014 | 0.105 |
| | 7 | 0.006 | 0.173 | 0.006 | 0.087 | 0.006 | 0.065 |
| | 14 | 0.001 | 0.090 | 0.001 | 0.045 | 0.001 | 0.036 |
| | 21 | 0.001 | 0.070 | 0.001 | 0.035 | 0.001 | 0.029 |
| | 28 | 0.001 | 0.054 | 0.001 | 0.028 | 0.001 | 0.027 |

**Table A 5 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to winter cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 42 | 0.003 | 0.048 | 0.003 | 0.031 | 0.003 | 0.023 |
| | 50 | 0.002 | 0.042 | 0.002 | 0.026 | 0.002 | 0.019 |
| | 100 | <0.001 | 0.022 | <0.001 | 0.014 | <0.001 | 0.013 |
| R1, pond | 0 | 0.100 | - | 0.095 | - | 0.097 | - |
| | 1 | 0.098 | 0.099 | 0.093 | 0.094 | 0.096 | 0.097 |
| | 2 | 0.096 | 0.098 | 0.092 | 0.093 | 0.095 | 0.096 |
| | 4 | 0.093 | 0.096 | 0.089 | 0.092 | 0.092 | 0.095 |
| | 7 | 0.089 | 0.094 | 0.086 | 0.090 | 0.089 | 0.093 |
| | 14 | 0.082 | 0.092 | 0.084 | 0.088 | 0.087 | 0.091 |
| | 21 | 0.076 | 0.091 | 0.081 | 0.088 | 0.084 | 0.090 |
| | 28 | 0.073 | 0.090 | 0.076 | 0.086 | 0.078 | 0.089 |
| | 42 | 0.073 | 0.086 | 0.067 | 0.082 | 0.069 | 0.085 |
| | 50 | 0.067 | 0.084 | 0.063 | 0.080 | 0.065 | 0.083 |
| | 100 | 0.087 | 0.076 | 0.056 | 0.071 | 0.058 | 0.074 |
| R1, stream | 0 | 0.529 | - | 0.529 | - | 0.529 | - |
| | 1 | 0.001 | 0.348 | 0.001 | 0.348 | 0.001 | 0.348 |
| | 2 | 0.001 | 0.175 | 0.001 | 0.175 | 0.001 | 0.175 |
| | 4 | 0.004 | 0.088 | 0.004 | 0.088 | 0.004 | 0.088 |
| | 7 | 0.001 | 0.070 | 0.001 | 0.070 | 0.001 | 0.070 |
| | 14 | 0.088 | 0.056 | 0.088 | 0.056 | 0.088 | 0.056 |
| | 21 | <0.001 | 0.043 | <0.001 | 0.042 | <0.001 | 0.042 |
| | 28 | <0.001 | 0.035 | <0.001 | 0.034 | <0.001 | 0.034 |
| | 42 | <0.001 | 0.030 | <0.001 | 0.030 | <0.001 | 0.030 |
| | 50 | <0.001 | 0.027 | <0.001 | 0.026 | <0.001 | 0.026 |
| | 100 | <0.001 | 0.018 | <0.001 | 0.017 | <0.001 | 0.017 |
| R3, stream | 0 | 0.509 | - | 0.496 | - | 0.496 | - |
| | 1 | 0.001 | 0.438 | 0.004 | 0.438 | 0.004 | 0.438 |
| | 2 | <0.001 | 0.238 | 0.003 | 0.238 | 0.003 | 0.238 |
| | 4 | <0.001 | 0.120 | 0.002 | 0.120 | 0.002 | 0.120 |
| | 7 | <0.001 | 0.069 | 0.001 | 0.069 | 0.001 | 0.069 |
| | 14 | 0.002 | 0.047 | <0.001 | 0.045 | <0.001 | 0.045 |
| | 21 | 0.001 | 0.037 | <0.001 | 0.037 | <0.001 | 0.037 |
| | 28 | <0.001 | 0.032 | 0.001 | 0.032 | 0.001 | 0.032 |
| | 42 | 0.374 | 0.030 | 0.001 | 0.030 | 0.001 | 0.030 |
| | 50 | 0.001 | 0.029 | <0.001 | 0.027 | <0.001 | 0.026 |
| | 100 | 0.001 | 0.016 | <0.001 | 0.015 | <0.001 | 0.015 |
| R4, stream | 0 | 0.761 | - | 0.761 | - | 0.761 | - |
| | 1 | 0.001 | 0.607 | 0.001 | 0.607 | 0.001 | 0.607 |
| | 2 | 0.001 | 0.444 | 0.001 | 0.444 | 0.001 | 0.444 |
| | 4 | 0.001 | 0.223 | 0.001 | 0.223 | 0.001 | 0.223 |
| | 7 | 0.001 | 0.128 | 0.001 | 0.128 | 0.001 | 0.128 |
| | 14 | <0.001 | 0.066 | <0.001 | 0.066 | <0.001 | 0.066 |
| | 21 | <0.001 | 0.046 | <0.001 | 0.046 | <0.001 | 0.046 |
| | 28 | 0.169 | 0.051 | 0.169 | 0.051 | 0.169 | 0.051 |
| | 42 | <0.001 | 0.041 | <0.001 | 0.041 | <0.001 | 0.041 |
| | 50 | <0.001 | 0.036 | <0.001 | 0.035 | <0.001 | 0.035 |
| | 100 | <0.001 | 0.022 | <0.001 | 0.021 | <0.001 | 0.021 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 6 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 2 x 100 g a.s. ha-1 to winter cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 0.994 | - | 0.577 | - | 0.577 | - |
| | 1 | 0.932 | 0.961 | 0.554 | 0.566 | 0.554 | 0.566 |
| | 2 | 0.883 | 0.934 | 0.542 | 0.558 | 0.542 | 0.558 |
| | 4 | 0.808 | 0.888 | 0.551 | 0.551 | 0.551 | 0.551 |
| | 7 | 0.730 | 0.836 | 0.528 | 0.547 | 0.528 | 0.546 |
| | 14 | 0.607 | 0.751 | 0.515 | 0.533 | 0.515 | 0.532 |
| | 21 | 0.511 | 0.686 | 0.516 | 0.529 | 0.516 | 0.529 |
| | 28 | 0.431 | 0.646 | 0.518 | 0.527 | 0.518 | 0.527 |
| | 42 | 0.314 | 0.606 | 0.485 | 0.520 | 0.485 | 0.520 |
| | 50 | 0.265 | 0.573 | 0.471 | 0.514 | 0.470 | 0.514 |
| | 100 | 0.114 | 0.475 | 0.288 | 0.474 | 0.287 | 0.474 |
| D1, stream | 0 | 0.486 | - | 0.362 | - | 0.362 | - |
| | 1 | 0.155 | 0.376 | 0.346 | 0.355 | 0.346 | 0.355 |
| | 2 | 0.011 | 0.349 | 0.339 | 0.349 | 0.339 | 0.349 |
| | 4 | 0.004 | 0.345 | 0.344 | 0.345 | 0.344 | 0.345 |
| | 7 | 0.003 | 0.342 | 0.329 | 0.342 | 0.329 | 0.342 |
| | 14 | 0.002 | 0.333 | 0.321 | 0.333 | 0.321 | 0.333 |
| | 21 | 0.003 | 0.331 | 0.322 | 0.331 | 0.322 | 0.331 |
| | 28 | 0.002 | 0.329 | 0.323 | 0.329 | 0.323 | 0.329 |
| | 42 | 0.001 | 0.324 | 0.299 | 0.324 | 0.299 | 0.324 |
| | 50 | 0.001 | 0.320 | 0.299 | 0.320 | 0.299 | 0.320 |
| | 100 | <0.001 | 0.286 | 0.006 | 0.286 | 0.006 | 0.286 |
| D2, ditch | 0 | 1.029 | - | 1.029 | - | 1.029 | - |
| | 1 | 0.711 | 0.892 | 0.711 | 0.738 | 0.711 | 0.738 |
| | 2 | 0.483 | 0.867 | 0.483 | 0.592 | 0.483 | 0.592 |
| | 4 | 0.246 | 0.827 | 0.246 | 0.556 | 0.246 | 0.556 |
| | 7 | 0.206 | 0.783 | 0.206 | 0.539 | 0.206 | 0.539 |
| | 14 | 0.227 | 0.717 | 0.227 | 0.514 | 0.227 | 0.514 |
| | 21 | 0.561 | 0.672 | 0.561 | 0.488 | 0.561 | 0.488 |
| | 28 | 0.244 | 0.637 | 0.244 | 0.457 | 0.244 | 0.457 |
| | 42 | 0.181 | 0.588 | 0.181 | 0.447 | 0.181 | 0.447 |
| | 50 | 0.303 | 0.559 | 0.303 | 0.439 | 0.303 | 0.438 |
| | 100 | 0.448 | 0.504 | 0.300 | 0.401 | 0.229 | 0.400 |
| D2, stream | 0 | 0.738 | - | 0.651 | - | 0.651 | - |
| | 1 | 0.687 | 0.711 | 0.173 | 0.421 | 0.173 | 0.421 |
| | 2 | 0.647 | 0.689 | 0.153 | 0.379 | 0.153 | 0.344 |
| | 4 | 0.589 | 0.653 | 0.137 | 0.361 | 0.137 | 0.328 |
| | 7 | 0.531 | 0.612 | 0.128 | 0.340 | 0.128 | 0.313 |
| | 14 | 0.444 | 0.548 | 0.149 | 0.306 | 0.149 | 0.297 |
| | 21 | 0.379 | 0.502 | 0.162 | 0.282 | 0.162 | 0.276 |
| | 28 | 0.325 | 0.464 | 0.132 | 0.261 | 0.132 | 0.258 |
| | 42 | 0.168 | 0.416 | 0.094 | 0.256 | 0.094 | 0.256 |
| | 50 | 0.171 | 0.417 | 0.087 | 0.254 | 0.087 | 0.254 |
| | 100 | 0.278 | 0.318 | 0.622 | 0.223 | 0.622 | 0.223 |
| D3, ditch | 0 | 0.555 | - | 0.278 | - | 0.144 | - |
| | 1 | 0.427 | 0.490 | 0.214 | 0.245 | 0.111 | 0.127 |
| | 2 | 0.250 | 0.416 | 0.020 | 0.133 | 0.065 | 0.108 |
| | 4 | 0.041 | 0.267 | 0.005 | 0.080 | 0.011 | 0.069 |
| | 7 | 0.010 | 0.160 | 0.002 | 0.041 | 0.002 | 0.042 |
| | 14 | 0.003 | 0.083 | 0.001 | 0.028 | 0.001 | 0.021 |
| | 21 | 0.001 | 0.056 | <0.001 | 0.035 | <0.001 | 0.015 |
| | 28 | 0.001 | 0.070 | <0.001 | 0.025 | <0.001 | 0.018 |

**Table A 6 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to winter cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 42 | <0.001 | 0.050 | <0.001 | 0.021 | <0.001 | 0.013 |
| | 50 | <0.001 | 0.043 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 100 | <0.001 | 0.021 | 0.020 | 0.133 | <0.001 | 0.006 |
| D4, pond | 0 | 0.047 | - | 0.042 | - | 0.045 | - |
| | 1 | 0.046 | 0.047 | 0.041 | 0.042 | 0.044 | 0.045 |
| | 2 | 0.044 | 0.046 | 0.040 | 0.042 | 0.043 | 0.045 |
| | 4 | 0.042 | 0.045 | 0.038 | 0.041 | 0.041 | 0.044 |
| | 7 | 0.039 | 0.043 | 0.035 | 0.039 | 0.038 | 0.042 |
| | 14 | 0.035 | 0.041 | 0.031 | 0.037 | 0.034 | 0.040 |
| | 21 | 0.031 | 0.039 | 0.028 | 0.035 | 0.030 | 0.038 |
| | 28 | 0.029 | 0.037 | 0.025 | 0.033 | 0.028 | 0.036 |
| | 42 | 0.025 | 0.034 | 0.022 | 0.030 | 0.024 | 0.033 |
| | 50 | 0.022 | 0.032 | 0.019 | 0.029 | 0.021 | 0.031 |
| | 100 | 0.016 | 0.026 | 0.014 | 0.023 | 0.015 | 0.025 |
| D4, stream | 0 | 0.473 | - | 0.236 | - | 0.167 | - |
| | 1 | <0.001 | 0.135 | <0.001 | 0.079 | <0.001 | 0.079 |
| | 2 | <0.001 | 0.073 | <0.001 | 0.073 | <0.001 | 0.073 |
| | 4 | <0.001 | 0.053 | <0.001 | 0.053 | <0.001 | 0.053 |
| | 7 | <0.001 | 0.038 | <0.001 | 0.038 | <0.001 | 0.038 |
| | 14 | <0.001 | 0.020 | <0.001 | 0.020 | <0.001 | 0.020 |
| | 21 | <0.001 | 0.014 | <0.001 | 0.014 | <0.001 | 0.014 |
| | 28 | <0.001 | 0.011 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 42 | <0.001 | 0.007 | <0.001 | 0.007 | <0.001 | 0.007 |
| | 50 | <0.001 | 0.006 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 100 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| D5, pond | 0 | 0.033 | - | 0.017 | - | 0.029 | - |
| | 1 | 0.032 | 0.033 | 0.017 | 0.017 | 0.028 | 0.028 |
| | 2 | 0.032 | 0.032 | 0.017 | 0.017 | 0.028 | 0.028 |
| | 4 | 0.031 | 0.032 | 0.016 | 0.017 | 0.027 | 0.028 |
| | 7 | 0.030 | 0.031 | 0.016 | 0.016 | 0.026 | 0.027 |
| | 14 | 0.028 | 0.030 | 0.015 | 0.016 | 0.024 | 0.026 |
| | 21 | 0.026 | 0.029 | 0.014 | 0.015 | 0.023 | 0.025 |
| | 28 | 0.025 | 0.028 | 0.013 | 0.015 | 0.021 | 0.024 |
| | 42 | 0.022 | 0.026 | 0.012 | 0.014 | 0.019 | 0.023 |
| | 50 | 0.021 | 0.026 | 0.011 | 0.014 | 0.018 | 0.022 |
| | 100 | 0.016 | 0.022 | 0.009 | 0.012 | 0.014 | 0.019 |
| D5, stream | 0 | 0.510 | - | 0.255 | - | 0.180 | - |
| | 1 | 0.003 | 0.193 | 0.001 | 0.096 | 0.001 | 0.068 |
| | 2 | 0.001 | 0.097 | <0.001 | 0.048 | <0.001 | 0.034 |
| | 4 | <0.001 | 0.049 | <0.001 | 0.024 | <0.001 | 0.017 |
| | 7 | <0.001 | 0.028 | <0.001 | 0.014 | <0.001 | 0.010 |
| | 14 | <0.001 | 0.014 | <0.001 | 0.007 | <0.001 | 0.005 |
| | 21 | <0.001 | 0.019 | <0.001 | 0.009 | <0.001 | 0.007 |
| | 28 | <0.001 | 0.014 | <0.001 | 0.007 | <0.001 | 0.005 |
| | 42 | <0.001 | 0.009 | <0.001 | 0.005 | <0.001 | 0.003 |
| | 50 | <0.001 | 0.008 | <0.001 | 0.004 | <0.001 | 0.003 |
| | 100 | <0.001 | 0.004 | <0.001 | 0.002 | <0.001 | 0.001 |
| D6, ditch | 0 | 0.577 | - | 0.291 | - | 0.291 | - |
| | 1 | 0.523 | 0.549 | 0.048 | 0.275 | 0.048 | 0.143 |
| | 2 | 0.481 | 0.525 | 0.023 | 0.263 | 0.023 | 0.136 |
| | 4 | 0.398 | 0.483 | 0.010 | 0.242 | 0.010 | 0.125 |
| | 7 | 0.237 | 0.412 | 0.004 | 0.206 | 0.004 | 0.107 |
| | 14 | 0.062 | 0.269 | 0.001 | 0.135 | 0.001 | 0.070 |

**Table A 6 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to winter cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 21 | 0.026 | 0.226 | <0.001 | 0.113 | <0.001 | 0.059 |
| | 28 | 0.014 | 0.201 | <0.001 | 0.100 | <0.001 | 0.052 |
| | 42 | 0.006 | 0.144 | 0.002 | 0.072 | 0.002 | 0.037 |
| | 50 | 0.004 | 0.123 | 0.001 | 0.061 | 0.001 | 0.032 |
| | 100 | 0.001 | 0.064 | <0.001 | 0.034 | <0.001 | 0.019 |
| R1, pond | 0 | 0.143 | - | 0.131 | - | 0.140 | - |
| | 1 | 0.139 | 0.141 | 0.128 | 0.130 | 0.136 | 0.138 |
| | 2 | 0.136 | 0.139 | 0.125 | 0.128 | 0.133 | 0.136 |
| | 4 | 0.130 | 0.136 | 0.120 | 0.125 | 0.127 | 0.133 |
| | 7 | 0.124 | 0.132 | 0.114 | 0.122 | 0.121 | 0.129 |
| | 14 | 0.128 | 0.132 | 0.119 | 0.121 | 0.126 | 0.129 |
| | 21 | 0.117 | 0.129 | 0.108 | 0.119 | 0.115 | 0.126 |
| | 28 | 0.108 | 0.125 | 0.100 | 0.115 | 0.106 | 0.122 |
| | 42 | 0.095 | 0.117 | 0.087 | 0.108 | 0.093 | 0.115 |
| | 50 | 0.088 | 0.113 | 0.081 | 0.104 | 0.086 | 0.111 |
| | 100 | 0.061 | 0.093 | 0.056 | 0.086 | 0.059 | 0.091 |
| R1, stream | 0 | 0.471 | - | 0.471 | - | 0.471 | - |
| | 1 | 0.001 | 0.362 | 0.001 | 0.362 | 0.001 | 0.362 |
| | 2 | 0.001 | 0.193 | 0.001 | 0.193 | 0.001 | 0.193 |
| | 4 | 0.001 | 0.116 | 0.001 | 0.116 | 0.001 | 0.116 |
| | 7 | 0.001 | 0.094 | 0.001 | 0.094 | 0.001 | 0.094 |
| | 14 | <0.001 | 0.058 | <0.001 | 0.055 | <0.001 | 0.054 |
| | 21 | <0.001 | 0.046 | <0.001 | 0.044 | <0.001 | 0.044 |
| | 28 | <0.001 | 0.037 | <0.001 | 0.036 | <0.001 | 0.036 |
| | 42 | <0.001 | 0.030 | <0.001 | 0.030 | <0.001 | 0.029 |
| | 50 | <0.001 | 0.027 | <0.001 | 0.026 | <0.001 | 0.025 |
| | 100 | <0.001 | 0.015 | <0.001 | 0.014 | <0.001 | 0.014 |
| R3, stream | 0 | 0.510 | - | 0.351 | - | 0.350 | - |
| | 1 | 0.003 | 0.235 | 0.003 | 0.235 | 0.003 | 0.235 |
| | 2 | 0.001 | 0.120 | 0.001 | 0.120 | 0.001 | 0.120 |
| | 4 | 0.001 | 0.061 | 0.001 | 0.061 | 0.001 | 0.060 |
| | 7 | <0.001 | 0.042 | 0.001 | 0.036 | 0.001 | 0.036 |
| | 14 | <0.001 | 0.032 | <0.001 | 0.025 | <0.001 | 0.023 |
| | 21 | <0.001 | 0.030 | <0.001 | 0.022 | <0.001 | 0.019 |
| | 28 | <0.001 | 0.022 | <0.001 | 0.018 | <0.001 | 0.017 |
| | 42 | <0.001 | 0.015 | <0.001 | 0.014 | <0.001 | 0.013 |
| | 50 | 0.001 | 0.016 | <0.001 | 0.016 | <0.001 | 0.016 |
| | 100 | <0.001 | 0.010 | 0.130 | 0.009 | 0.130 | 0.009 |
| R4, stream | 0 | 0.686 | - | 0.363 | - | 0.686 | - |
| | 1 | 0.656 | 0.634 | 0.345 | 0.353 | 0.656 | 0.634 |
| | 2 | 0.003 | 0.559 | 0.002 | 0.295 | 0.003 | 0.559 |
| | 4 | 0.002 | 0.294 | 0.001 | 0.155 | 0.002 | 0.294 |
| | 7 | 0.267 | 0.224 | 0.141 | 0.119 | 0.267 | 0.224 |
| | 14 | 0.001 | 0.155 | <0.001 | 0.085 | 0.001 | 0.155 |
| | 21 | <0.001 | 0.107 | <0.001 | 0.056 | <0.001 | 0.104 |
| | 28 | <0.001 | 0.083 | <0.001 | 0.044 | <0.001 | 0.079 |
| | 42 | <0.001 | 0.055 | <0.001 | 0.029 | <0.001 | 0.053 |
| | 50 | <0.001 | 0.047 | <0.001 | 0.025 | <0.001 | 0.045 |
| | 100 | 0.001 | 0.023 | 0.001 | 0.014 | 0.001 | 0.022 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 7 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to spring cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 0.905 | - | 0.585 | - | 0.533 | - |
| | 1 | 0.84 | 0.871 | 0.550 | 0.566 | 0.509 | 0.518 |
| | 2 | 0.789 | 0.842 | 0.521 | 0.551 | 0.475 | 0.508 |
| | 4 | 0.714 | 0.795 | 0.478 | 0.524 | 0.459 | 0.485 |
| | 7 | 0.641 | 0.744 | 0.434 | 0.494 | 0.442 | 0.47 |
| | 14 | 0.532 | 0.663 | 0.363 | 0.458 | 0.423 | 0.458 |
| | 21 | 0.448 | 0.605 | 0.309 | 0.452 | 0.409 | 0.452 |
| | 28 | 0.379 | 0.557 | 0.263 | 0.449 | 0.407 | 0.449 |
| | 42 | 0.276 | 0.479 | 0.195 | 0.444 | 0.398 | 0.444 |
| | 50 | 0.233 | 0.463 | 0.166 | 0.441 | 0.381 | 0.441 |
| | 100 | 0.163 | 0.439 | 0.145 | 0.421 | 0.378 | 0.421 |
| D1, stream | 0 | 0.564 | - | 0.334 | - | 0.334 | - |
| | 1 | 0.182 | 0.438 | 0.317 | 0.324 | 0.317 | 0.324 |
| | 2 | 0.014 | 0.317 | 0.295 | 0.317 | 0.295 | 0.317 |
| | 4 | 0.006 | 0.302 | 0.286 | 0.302 | 0.286 | 0.302 |
| | 7 | 0.005 | 0.293 | 0.274 | 0.293 | 0.274 | 0.293 |
| | 14 | 0.003 | 0.285 | 0.259 | 0.285 | 0.259 | 0.285 |
| | 21 | 0.002 | 0.282 | 0.248 | 0.282 | 0.248 | 0.282 |
| | 28 | 0.002 | 0.279 | 0.246 | 0.279 | 0.246 | 0.279 |
| | 42 | 0.001 | 0.274 | 0.245 | 0.274 | 0.245 | 0.274 |
| | 50 | 0.001 | 0.273 | 0.225 | 0.273 | 0.225 | 0.273 |
| | 100 | 0.076 | 0.26 | 0.233 | 0.260 | 0.233 | 0.26 |
| D3, ditch | 0 | 0.632 | - | 0.316 | - | 0.171 | - |
| | 1 | 0.338 | 0.504 | 0.169 | 0.252 | 0.092 | 0.137 |
| | 2 | 0.059 | 0.337 | 0.030 | 0.168 | 0.016 | 0.091 |
| | 4 | 0.005 | 0.177 | 0.002 | 0.088 | 0.001 | 0.048 |
| | 7 | 0.002 | 0.102 | 0.001 | 0.051 | 0.001 | 0.028 |
| | 14 | 0.001 | 0.052 | <0.001 | 0.026 | <0.001 | 0.014 |
| | 21 | <0.001 | 0.035 | <0.001 | 0.017 | <0.001 | 0.009 |
| | 28 | <0.001 | 0.026 | <0.001 | 0.013 | <0.001 | 0.007 |
| | 42 | <0.001 | 0.018 | <0.001 | 0.009 | <0.001 | 0.005 |
| | 50 | <0.001 | 0.015 | <0.001 | 0.007 | <0.001 | 0.004 |
| | 100 | <0.001 | 0.007 | <0.001 | 0.004 | <0.001 | 0.002 |
| D4, pond | 0 | 0.035 | - | 0.033 | - | 0.034 | - |
| | 1 | 0.034 | 0.035 | 0.032 | 0.033 | 0.033 | 0.034 |
| | 2 | 0.033 | 0.034 | 0.031 | 0.032 | 0.032 | 0.034 |
| | 4 | 0.031 | 0.033 | 0.029 | 0.032 | 0.031 | 0.033 |
| | 7 | 0.029 | 0.032 | 0.027 | 0.030 | 0.028 | 0.032 |
| | 14 | 0.026 | 0.03 | 0.025 | 0.028 | 0.026 | 0.03 |
| | 21 | 0.023 | 0.029 | 0.022 | 0.027 | 0.023 | 0.028 |
| | 28 | 0.022 | 0.028 | 0.020 | 0.026 | 0.021 | 0.027 |
| | 42 | 0.019 | 0.025 | 0.017 | 0.024 | 0.018 | 0.025 |
| | 50 | 0.017 | 0.024 | 0.015 | 0.023 | 0.016 | 0.024 |
| | 100 | 0.012 | 0.019 | 0.011 | 0.018 | 0.012 | 0.019 |
| D4, stream | 0 | 0.517 | - | 0.258 | - | 0.189 | - |
| | 1 | <0.001 | 0.062 | <0.001 | 0.062 | <0.001 | 0.062 |
| | 2 | <0.001 | 0.058 | <0.001 | 0.058 | <0.001 | 0.058 |
| | 4 | <0.001 | 0.043 | <0.001 | 0.043 | <0.001 | 0.043 |
| | 7 | <0.001 | 0.032 | <0.001 | 0.032 | <0.001 | 0.032 |
| | 14 | <0.001 | 0.017 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 21 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 28 | <0.001 | 0.009 | <0.001 | 0.009 | <0.001 | 0.009 |
| | 42 | <0.001 | 0.006 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 50 | <0.001 | 0.005 | <0.001 | 0.005 | <0.001 | 0.005 |

**Table A 7 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 1 x 100 g a.s. ha-1 to spring cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 100 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| D5, pond | 0 | 0.023 | - | 0.013 | - | 0.021 | - |
| | 1 | 0.023 | 0.023 | 0.012 | 0.012 | 0.02 | 0.02 |
| | 2 | 0.022 | 0.023 | 0.012 | 0.012 | 0.019 | 0.02 |
| | 4 | 0.021 | 0.022 | 0.011 | 0.012 | 0.018 | 0.019 |
| | 7 | 0.020 | 0.021 | 0.011 | 0.012 | 0.018 | 0.019 |
| | 14 | 0.018 | 0.02 | 0.010 | 0.011 | 0.016 | 0.018 |
| | 21 | 0.017 | 0.019 | 0.009 | 0.010 | 0.015 | 0.017 |
| | 28 | 0.016 | 0.019 | 0.009 | 0.010 | 0.014 | 0.016 |
| | 42 | 0.014 | 0.017 | 0.008 | 0.009 | 0.013 | 0.015 |
| | 50 | 0.014 | 0.017 | 0.007 | 0.009 | 0.012 | 0.015 |
| | 100 | 0.010 | 0.014 | 0.006 | 0.008 | 0.009 | 0.013 |
| D5, stream | 0 | 0.531 | - | 0.265 | - | 0.194 | - |
| | 1 | <0.001 | 0.029 | <0.001 | 0.015 | <0.001 | 0.011 |
| | 2 | <0.001 | 0.015 | <0.001 | 0.008 | <0.001 | 0.008 |
| | 4 | <0.001 | 0.007 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 7 | <0.001 | 0.004 | <0.001 | 0.004 | <0.001 | 0.004 |
| | 14 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| | 21 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 28 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 42 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 50 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 100 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| R4, stream | 0 | 0.602 | - | 0.602 | - | 0.602 | - |
| | 1 | 0.001 | 0.515 | 0.001 | 0.515 | 0.001 | 0.515 |
| | 2 | 0.001 | 0.464 | 0.001 | 0.464 | 0.001 | 0.464 |
| | 4 | 0.53 | 0.244 | 0.530 | 0.244 | 0.53 | 0.244 |
| | 7 | 0.002 | 0.196 | 0.002 | 0.196 | 0.002 | 0.196 |
| | 14 | 0.001 | 0.133 | 0.001 | 0.133 | 0.001 | 0.133 |
| | 21 | <0.001 | 0.089 | <0.001 | 0.089 | <0.001 | 0.089 |
| | 28 | <0.001 | 0.070 | <0.001 | 0.068 | <0.001 | 0.068 |
| | 42 | <0.001 | 0.047 | <0.001 | 0.046 | <0.001 | 0.045 |
| | 50 | <0.001 | 0.039 | <0.001 | 0.038 | <0.001 | 0.038 |
| | 100 | 0.324 | 0.020 | 0.324 | 0.020 | 0.324 | 0.019 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 8 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 1 x 100 g a.s. ha-1 to spring cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 0.814 | - | 0.493 | - | 0.386 | - |
| | 1 | 0.749 | 0.779 | 0.459 | 0.474 | 0.373 | 0.380 |
| | 2 | 0.700 | 0.751 | 0.433 | 0.460 | 0.353 | 0.373 |
| | 4 | 0.630 | 0.707 | 0.394 | 0.436 | 0.338 | 0.360 |
| | 7 | 0.562 | 0.658 | 0.355 | 0.409 | 0.330 | 0.349 |
| | 14 | 0.464 | 0.584 | 0.296 | 0.366 | 0.312 | 0.346 |
| | 21 | 0.390 | 0.531 | 0.251 | 0.341 | 0.294 | 0.341 |
| | 28 | 0.329 | 0.488 | 0.214 | 0.339 | 0.323 | 0.339 |
| | 42 | 0.238 | 0.419 | 0.158 | 0.335 | 0.304 | 0.335 |
| | 50 | 0.200 | 0.387 | 0.134 | 0.334 | 0.300 | 0.334 |
| | 100 | 0.118 | 0.340 | 0.099 | 0.319 | 0.178 | 0.319 |
| D1, stream | 0 | 0.564 | - | 0.283 | - | 0.242 | - |
| | 1 | 0.179 | 0.435 | 0.091 | 0.237 | 0.233 | 0.237 |
| | 2 | 0.012 | 0.247 | 0.007 | 0.233 | 0.219 | 0.233 |
| | 4 | 0.004 | 0.224 | 0.003 | 0.224 | 0.210 | 0.224 |
| | 7 | 0.003 | 0.218 | 0.003 | 0.218 | 0.204 | 0.218 |
| | 14 | 0.002 | 0.215 | 0.002 | 0.215 | 0.187 | 0.215 |
| | 21 | 0.001 | 0.213 | 0.001 | 0.213 | 0.194 | 0.213 |
| | 28 | 0.001 | 0.211 | 0.001 | 0.211 | 0.204 | 0.211 |
| | 42 | 0.001 | 0.207 | 0.001 | 0.207 | 0.195 | 0.207 |
| | 50 | 0.001 | 0.206 | 0.001 | 0.206 | 0.181 | 0.206 |
| | 100 | 0.001 | 0.196 | 0.001 | 0.196 | 0.001 | 0.196 |
| D3, ditch | 0 | 0.635 | - | 0.318 | - | 0.172 | - |
| | 1 | 0.375 | 0.518 | 0.188 | 0.259 | 0.102 | 0.140 |
| | 2 | 0.086 | 0.363 | 0.043 | 0.182 | 0.023 | 0.098 |
| | 4 | 0.007 | 0.194 | 0.003 | 0.097 | 0.002 | 0.053 |
| | 7 | 0.003 | 0.113 | 0.002 | 0.057 | 0.001 | 0.031 |
| | 14 | 0.001 | 0.057 | 0.001 | 0.029 | <0.001 | 0.016 |
| | 21 | 0.001 | 0.039 | <0.001 | 0.019 | <0.001 | 0.010 |
| | 28 | <0.001 | 0.029 | <0.001 | 0.015 | <0.001 | 0.008 |
| | 42 | <0.001 | 0.019 | <0.001 | 0.010 | <0.001 | 0.005 |
| | 50 | <0.001 | 0.016 | <0.001 | 0.008 | <0.001 | 0.004 |
| | 100 | <0.001 | 0.008 | <0.001 | 0.004 | <0.001 | 0.002 |
| D4, pond | 0 | 0.025 | - | 0.022 | - | 0.024 | - |
| | 1 | 0.024 | 0.025 | 0.022 | 0.022 | 0.024 | 0.024 |
| | 2 | 0.024 | 0.025 | 0.021 | 0.022 | 0.023 | 0.024 |
| | 4 | 0.022 | 0.024 | 0.020 | 0.022 | 0.022 | 0.023 |
| | 7 | 0.021 | 0.023 | 0.019 | 0.021 | 0.020 | 0.023 |
| | 14 | 0.019 | 0.022 | 0.017 | 0.020 | 0.018 | 0.021 |
| | 21 | 0.017 | 0.021 | 0.015 | 0.018 | 0.016 | 0.020 |
| | 28 | 0.015 | 0.020 | 0.014 | 0.018 | 0.015 | 0.019 |
| | 42 | 0.013 | 0.018 | 0.012 | 0.016 | 0.013 | 0.018 |
| | 50 | 0.012 | 0.017 | 0.010 | 0.015 | 0.011 | 0.017 |
| | 100 | 0.009 | 0.014 | 0.007 | 0.012 | 0.008 | 0.013 |
| D4, stream | 0 | 0.547 | - | 0.273 | - | 0.200 | - |
| | 1 | <0.001 | 0.142 | <0.001 | 0.071 | <0.001 | 0.052 |
| | 2 | <0.001 | 0.071 | <0.001 | 0.038 | <0.001 | 0.038 |
| | 4 | <0.001 | 0.036 | <0.001 | 0.028 | <0.001 | 0.028 |
| | 7 | <0.001 | 0.021 | <0.001 | 0.021 | <0.001 | 0.021 |
| | 14 | <0.001 | 0.011 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 21 | <0.001 | 0.008 | <0.001 | 0.008 | <0.001 | 0.008 |
| | 28 | <0.001 | 0.006 | <0.001 | 0.006 | <0.001 | 0.006 |
| | 42 | <0.001 | 0.004 | <0.001 | 0.004 | <0.001 | 0.004 |
| | 50 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |

**Table A 8 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to spring cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 100 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| D5, pond | 0 | 0.023 | - | 0.012 | - | 0.020 | - |
| | 1 | 0.022 | 0.022 | 0.011 | 0.012 | 0.019 | 0.019 |
| | 2 | 0.021 | 0.022 | 0.011 | 0.011 | 0.019 | 0.019 |
| | 4 | 0.020 | 0.021 | 0.011 | 0.011 | 0.018 | 0.019 |
| | 7 | 0.019 | 0.021 | 0.010 | 0.011 | 0.017 | 0.018 |
| | 14 | 0.018 | 0.020 | 0.009 | 0.010 | 0.015 | 0.017 |
| | 21 | 0.017 | 0.019 | 0.009 | 0.010 | 0.014 | 0.016 |
| | 28 | 0.016 | 0.018 | 0.008 | 0.009 | 0.014 | 0.016 |
| | 42 | 0.014 | 0.017 | 0.007 | 0.009 | 0.012 | 0.015 |
| | 50 | 0.013 | 0.016 | 0.007 | 0.009 | 0.012 | 0.014 |
| | 100 | 0.010 | 0.014 | 0.005 | 0.007 | 0.009 | 0.012 |
| D5, stream | 0 | 0.553 | - | 0.277 | - | 0.202 | - |
| | 1 | <0.001 | 0.046 | <0.001 | 0.023 | <0.001 | 0.017 |
| | 2 | <0.001 | 0.023 | <0.001 | 0.012 | <0.001 | 0.008 |
| | 4 | <0.001 | 0.012 | <0.001 | 0.006 | <0.001 | 0.004 |
| | 7 | <0.001 | 0.007 | <0.001 | 0.003 | <0.001 | 0.002 |
| | 14 | <0.001 | 0.003 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 21 | <0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 28 | <0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 42 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 50 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| | 100 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| R4, stream | 0 | 0.419 | - | 0.384 | - | 0.384 | - |
| | 1 | <0.001 | 0.356 | 0.368 | 0.356 | 0.368 | 0.356 |
| | 2 | <0.001 | 0.313 | 0.002 | 0.313 | 0.002 | 0.313 |
| | 4 | <0.001 | 0.165 | 0.001 | 0.165 | 0.001 | 0.165 |
| | 7 | <0.001 | 0.125 | 0.151 | 0.125 | 0.151 | 0.125 |
| | 14 | 0.001 | 0.087 | <0.001 | 0.087 | <0.001 | 0.087 |
| | 21 | 0.001 | 0.062 | <0.001 | 0.060 | <0.001 | 0.059 |
| | 28 | <0.001 | 0.047 | <0.001 | 0.045 | <0.001 | 0.045 |
| | 42 | <0.001 | 0.031 | <0.001 | 0.030 | <0.001 | 0.030 |
| | 50 | <0.001 | 0.026 | <0.001 | 0.025 | <0.001 | 0.025 |
| | 100 | <0.001 | 0.013 | <0.001 | 0.013 | <0.001 | 0.013 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 9 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 2 x 100 g a.s. ha-1 to spring cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 1.189 | - | 1.002 | - | 1.002 | - |
| | 1 | 1.123 | 1.155 | 0.957 | 0.975 | 0.957 | 0.975 |
| | 2 | 1.070 | 1.125 | 0.888 | 0.954 | 0.888 | 0.954 |
| | 4 | 0.987 | 1.076 | 0.857 | 0.908 | 0.857 | 0.908 |
| | 7 | 0.898 | 1.018 | 0.821 | 0.879 | 0.821 | 0.879 |
| | 14 | 0.751 | 0.919 | 0.784 | 0.842 | 0.784 | 0.842 |
| | 21 | 0.636 | 0.853 | 0.758 | 0.827 | 0.758 | 0.827 |
| | 28 | 0.541 | 0.850 | 0.755 | 0.817 | 0.755 | 0.817 |
| | 42 | 0.400 | 0.816 | 0.738 | 0.816 | 0.738 | 0.816 |
| | 50 | 0.340 | 0.809 | 0.707 | 0.808 | 0.706 | 0.808 |
| | 100 | 0.220 | 0.776 | 0.704 | 0.775 | 0.704 | 0.775 |
| D1, stream | 0 | 0.628 | - | 0.628 | - | 0.628 | - |
| | 1 | 0.596 | 0.609 | 0.596 | 0.609 | 0.596 | 0.609 |
| | 2 | 0.551 | 0.595 | 0.551 | 0.595 | 0.551 | 0.595 |
| | 4 | 0.534 | 0.566 | 0.534 | 0.566 | 0.534 | 0.566 |
| | 7 | 0.509 | 0.547 | 0.509 | 0.547 | 0.509 | 0.547 |
| | 14 | 0.480 | 0.523 | 0.480 | 0.523 | 0.480 | 0.523 |
| | 21 | 0.460 | 0.514 | 0.460 | 0.514 | 0.460 | 0.514 |
| | 28 | 0.456 | 0.507 | 0.456 | 0.507 | 0.456 | 0.507 |
| | 42 | 0.454 | 0.507 | 0.454 | 0.507 | 0.454 | 0.507 |
| | 50 | 0.417 | 0.501 | 0.417 | 0.501 | 0.417 | 0.501 |
| | 100 | 0.434 | 0.480 | 0.434 | 0.480 | 0.434 | 0.480 |
| D3, ditch | 0 | 0.553 | - | 0.277 | - | 0.144 | - |
| | 1 | 0.308 | 0.446 | 0.154 | 0.223 | 0.080 | 0.116 |
| | 2 | 0.059 | 0.302 | 0.029 | 0.151 | 0.015 | 0.078 |
| | 4 | 0.005 | 0.160 | 0.003 | 0.080 | 0.001 | 0.041 |
| | 7 | 0.003 | 0.093 | 0.001 | 0.046 | 0.001 | 0.024 |
| | 14 | 0.001 | 0.047 | 0.001 | 0.024 | <0.001 | 0.012 |
| | 21 | 0.001 | 0.061 | <0.001 | 0.031 | <0.001 | 0.016 |
| | 28 | <0.001 | 0.046 | <0.001 | 0.023 | <0.001 | 0.012 |
| | 42 | <0.001 | 0.031 | <0.001 | 0.016 | <0.001 | 0.008 |
| | 50 | <0.001 | 0.026 | <0.001 | 0.013 | <0.001 | 0.007 |
| | 100 | <0.001 | 0.013 | <0.001 | 0.007 | <0.001 | 0.003 |
| D4, pond | 0 | 0.066 | - | 0.063 | - | 0.065 | - |
| | 1 | 0.065 | 0.066 | 0.061 | 0.062 | 0.064 | 0.065 |
| | 2 | 0.063 | 0.065 | 0.059 | 0.062 | 0.062 | 0.064 |
| | 4 | 0.059 | 0.064 | 0.056 | 0.060 | 0.058 | 0.063 |
| | 7 | 0.055 | 0.062 | 0.052 | 0.058 | 0.054 | 0.061 |
| | 14 | 0.050 | 0.058 | 0.047 | 0.055 | 0.049 | 0.057 |
| | 21 | 0.044 | 0.055 | 0.042 | 0.052 | 0.044 | 0.054 |
| | 28 | 0.041 | 0.052 | 0.038 | 0.049 | 0.040 | 0.052 |
| | 42 | 0.035 | 0.048 | 0.033 | 0.045 | 0.035 | 0.047 |
| | 50 | 0.032 | 0.046 | 0.029 | 0.043 | 0.031 | 0.045 |
| | 100 | 0.023 | 0.037 | 0.021 | 0.034 | 0.022 | 0.036 |
| D4, stream | 0 | 0.461 | - | 0.231 | - | 0.212 | - |
| | 1 | <0.001 | 0.120 | <0.001 | 0.120 | 0.022 | 0.120 |
| | 2 | <0.001 | 0.112 | <0.001 | 0.112 | 0.168 | 0.112 |
| | 4 | <0.001 | 0.083 | <0.001 | 0.083 | 0.005 | 0.083 |
| | 7 | <0.001 | 0.063 | <0.001 | 0.063 | 0.001 | 0.063 |
| | 14 | <0.001 | 0.033 | <0.001 | 0.033 | 0.014 | 0.033 |
| | 21 | <0.001 | 0.024 | <0.001 | 0.024 | <0.001 | 0.024 |
| | 28 | <0.001 | 0.018 | <0.001 | 0.018 | <0.001 | 0.018 |
| | 42 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 50 | <0.001 | 0.010 | <0.001 | 0.010 | <0.001 | 0.010 |

**Table A 9 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to spring cereals, BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 100 | <0.001 | 0.005 | <0.001 | 0.005 | <0.001 | 0.005 |
| D5, pond | 0 | 0.032 | - | 0.018 | - | 0.028 | - |
| | 1 | 0.032 | 0.032 | 0.017 | 0.018 | 0.028 | 0.028 |
| | 2 | 0.031 | 0.032 | 0.017 | 0.018 | 0.027 | 0.028 |
| | 4 | 0.030 | 0.031 | 0.016 | 0.017 | 0.026 | 0.027 |
| | 7 | 0.029 | 0.030 | 0.015 | 0.017 | 0.025 | 0.026 |
| | 14 | 0.027 | 0.029 | 0.014 | 0.016 | 0.023 | 0.025 |
| | 21 | 0.025 | 0.028 | 0.013 | 0.015 | 0.022 | 0.024 |
| | 28 | 0.024 | 0.027 | 0.013 | 0.015 | 0.021 | 0.024 |
| | 42 | 0.022 | 0.026 | 0.011 | 0.014 | 0.019 | 0.023 |
| | 50 | 0.021 | 0.025 | 0.010 | 0.014 | 0.018 | 0.022 |
| | 100 | 0.016 | 0.022 | -** | 0.012 | 0.014 | 0.019 |
| D5, stream | 0 | 0.477 | - | 0.238 | - | 0.168 | - |
| | 1 | <0.001 | 0.040 | <0.001 | 0.020 | <0.001 | 0.019 |
| | 2 | <0.001 | 0.020 | <0.001 | 0.013 | <0.001 | 0.013 |
| | 4 | <0.001 | 0.010 | <0.001 | 0.010 | <0.001 | 0.010 |
| | 7 | <0.001 | 0.007 | <0.001 | 0.007 | <0.001 | 0.007 |
| | 14 | <0.001 | 0.005 | <0.001 | 0.005 | <0.001 | 0.005 |
| | 21 | <0.001 | 0.003 | <0.001 | 0.003 | <0.001 | 0.003 |
| | 28 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 42 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 50 | <0.001 | 0.002 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 100 | <0.001 | 0.001 | <0.001 | 0.001 | <0.001 | 0.001 |
| R4, stream | 0 | 1.106 | - | 1.106 | - | 1.106 | - |
| | 1 | 1.002 | 0.750 | 1.002 | 0.750 | 1.002 | 0.750 |
| | 2 | 0.003 | 0.569 | 0.003 | 0.569 | 0.003 | 0.569 |
| | 4 | 0.002 | 0.307 | 0.002 | 0.298 | 0.002 | 0.295 |
| | 7 | 0.001 | 0.282 | 0.001 | 0.277 | 0.001 | 0.275 |
| | 14 | <0.001 | 0.204 | <0.001 | 0.201 | <0.001 | 0.200 |
| | 21 | <0.001 | 0.136 | <0.001 | 0.134 | <0.001 | 0.134 |
| | 28 | <0.001 | 0.105 | <0.001 | 0.102 | <0.001 | 0.101 |
| | 42 | <0.001 | 0.070 | <0.001 | 0.068 | <0.001 | 0.068 |
| | 50 | <0.001 | 0.059 | <0.001 | 0.058 | <0.001 | 0.058 |
| | 100 | 0.001 | 0.033 | 0.001 | 0.033 | 0.001 | 0.033 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 10 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to spring cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| D1, ditch | 0 | 1.041 | - | 0.613 | - | 0.553 | - |
| | 1 | 0.974 | 1.004 | 0.578 | 0.594 | 0.532 | 0.543 |
| | 2 | 0.924 | 0.976 | 0.551 | 0.579 | 0.506 | 0.534 |
| | 4 | 0.847 | 0.930 | 0.509 | 0.554 | 0.486 | 0.515 |
| | 7 | 0.766 | 0.876 | 0.464 | 0.524 | 0.475 | 0.505 |
| | 14 | 0.637 | 0.787 | 0.389 | 0.500 | 0.451 | 0.500 |
| | 21 | 0.536 | 0.719 | 0.330 | 0.495 | 0.424 | 0.495 |
| | 28 | 0.453 | 0.691 | 0.282 | 0.491 | 0.464 | 0.491 |
| | 42 | 0.330 | 0.640 | 0.210 | 0.485 | 0.438 | 0.485 |
| | 50 | 0.279 | 0.604 | 0.179 | 0.483 | 0.431 | 0.483 |
| | 100 | 0.150 | 0.498 | 0.118 | 0.462 | 0.300 | 0.462 |
| D1, stream | 0 | 0.489 | - | 0.346 | - | 0.346 | - |
| | 1 | 0.157 | 0.378 | 0.333 | 0.339 | 0.333 | 0.339 |
| | 2 | 0.012 | 0.333 | 0.314 | 0.333 | 0.314 | 0.333 |
| | 4 | 0.005 | 0.321 | 0.302 | 0.321 | 0.302 | 0.321 |
| | 7 | 0.004 | 0.315 | 0.294 | 0.315 | 0.294 | 0.315 |
| | 14 | 0.486 | 0.311 | 0.270 | 0.311 | 0.270 | 0.311 |
| | 21 | 0.003 | 0.308 | 0.281 | 0.308 | 0.281 | 0.308 |
| | 28 | 0.002 | 0.305 | 0.293 | 0.305 | 0.293 | 0.305 |
| | 42 | 0.001 | 0.300 | 0.280 | 0.300 | 0.280 | 0.300 |
| | 50 | 0.001 | 0.298 | 0.261 | 0.298 | 0.261 | 0.298 |
| | 100 | 0.001 | 0.284 | 0.002 | 0.284 | 0.002 | 0.284 |
| D3, ditch | 0 | 0.556 | - | 0.278 | - | 0.144 | - |
| | 1 | 0.369 | 0.468 | 0.185 | 0.234 | 0.096 | 0.121 |
| | 2 | 0.118 | 0.351 | 0.059 | 0.175 | 0.031 | 0.091 |
| | 4 | 0.010 | 0.195 | 0.005 | 0.097 | 0.003 | 0.051 |
| | 7 | 0.004 | 0.114 | 0.002 | 0.057 | 0.001 | 0.030 |
| | 14 | 0.001 | 0.058 | 0.001 | 0.029 | <0.001 | 0.015 |
| | 21 | 0.001 | 0.067 | <0.001 | 0.034 | <0.001 | 0.017 |
| | 28 | <0.001 | 0.054 | <0.001 | 0.027 | <0.001 | 0.014 |
| | 42 | <0.001 | 0.036 | <0.001 | 0.018 | <0.001 | 0.009 |
| | 50 | <0.001 | 0.031 | <0.001 | 0.015 | <0.001 | 0.008 |
| | 100 | <0.001 | 0.015 | <0.001 | 0.008 | <0.001 | 0.004 |
| D4, pond | 0 | 0.052 | - | 0.048 | - | 0.051 | - |
| | 1 | 0.051 | 0.052 | 0.047 | 0.047 | 0.050 | 0.050 |
| | 2 | 0.049 | 0.051 | 0.045 | 0.047 | 0.048 | 0.050 |
| | 4 | 0.047 | 0.050 | 0.043 | 0.046 | 0.045 | 0.049 |
| | 7 | 0.043 | 0.048 | 0.040 | 0.044 | 0.042 | 0.047 |
| | 14 | 0.039 | 0.045 | 0.036 | 0.042 | 0.038 | 0.044 |
| | 21 | 0.035 | 0.043 | 0.032 | 0.039 | 0.034 | 0.042 |
| | 28 | 0.032 | 0.041 | 0.029 | 0.037 | 0.031 | 0.040 |
| | 42 | 0.028 | 0.038 | 0.025 | 0.034 | 0.027 | 0.037 |
| | 50 | 0.025 | 0.036 | 0.022 | 0.033 | 0.024 | 0.035 |
| | 100 | 0.018 | 0.029 | 0.016 | 0.026 | 0.017 | 0.028 |
| D4, stream | 0 | 0.474 | - | 0.237 | - | 0.174 | - |
| | 1 | <0.001 | 0.135 | <0.001 | 0.090 | 0.014 | 0.090 |
| | 2 | <0.001 | 0.083 | <0.001 | 0.083 | 0.131 | 0.083 |
| | 4 | <0.001 | 0.060 | <0.001 | 0.060 | 0.003 | 0.060 |
| | 7 | <0.001 | 0.045 | <0.001 | 0.045 | 0.001 | 0.045 |
| | 14 | <0.001 | 0.023 | <0.001 | 0.023 | 0.009 | 0.023 |
| | 21 | <0.001 | 0.017 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 28 | <0.001 | 0.013 | <0.001 | 0.013 | <0.001 | 0.013 |
| | 42 | <0.001 | 0.008 | <0.001 | 0.008 | <0.001 | 0.008 |
| | 50 | <0.001 | 0.007 | <0.001 | 0.007 | <0.001 | 0.007 |

**Table A 10 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following application of 2 x 100 g a.s. ha-1 to spring cereals, BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| | 100 | <0.001 | 0.004 | <0.001 | 0.004 | <0.001 | 0.004 |
| D5, pond | 0 | 0.033 | - | 0.017 | - | 0.029 | - |
| | 1 | 0.032 | 0.033 | 0.017 | 0.017 | 0.028 | 0.028 |
| | 2 | 0.032 | 0.032 | 0.017 | 0.017 | 0.028 | 0.028 |
| | 4 | 0.031 | 0.032 | 0.016 | 0.017 | 0.027 | 0.028 |
| | 7 | 0.030 | 0.031 | 0.016 | 0.016 | 0.026 | 0.027 |
| | 14 | 0.028 | 0.030 | 0.015 | 0.016 | 0.024 | 0.026 |
| | 21 | 0.026 | 0.029 | 0.014 | 0.015 | 0.022 | 0.025 |
| | 28 | 0.025 | 0.028 | 0.013 | 0.015 | 0.021 | 0.024 |
| | 42 | 0.022 | 0.026 | 0.012 | 0.014 | 0.019 | 0.023 |
| | 50 | 0.021 | 0.026 | 0.011 | 0.014 | 0.018 | 0.022 |
| | 100 | 0.016 | 0.022 | 0.009 | 0.012 | 0.014 | 0.019 |
| D5, stream | 0 | 0.511 | - | 0.255 | - | 0.180 | - |
| | 1 | 0.002 | 0.185 | 0.001 | 0.093 | 0.001 | 0.065 |
| | 2 | 0.001 | 0.093 | <0.001 | 0.046 | <0.001 | 0.033 |
| | 4 | <0.001 | 0.047 | <0.001 | 0.023 | <0.001 | 0.016 |
| | 7 | <0.001 | 0.027 | <0.001 | 0.013 | <0.001 | 0.009 |
| | 14 | <0.001 | 0.013 | <0.001 | 0.007 | <0.001 | 0.005 |
| | 21 | <0.001 | 0.011 | <0.001 | 0.005 | <0.001 | 0.004 |
| | 28 | <0.001 | 0.008 | <0.001 | 0.004 | <0.001 | 0.003 |
| | 42 | <0.001 | 0.005 | <0.001 | 0.003 | <0.001 | 0.002 |
| | 50 | <0.001 | 0.005 | <0.001 | 0.002 | <0.001 | 0.002 |
| | 100 | <0.001 | 0.002 | <0.001 | 0.001 | <0.001 | 0.001 |
| R4, stream | 0 | 0.420 | - | 0.420 | - | 0.420 | - |
| | 1 | 0.400 | 0.387 | 0.400 | 0.387 | 0.400 | 0.387 |
| | 2 | 0.002 | 0.341 | 0.002 | 0.341 | 0.002 | 0.341 |
| | 4 | 0.001 | 0.179 | 0.001 | 0.179 | 0.001 | 0.179 |
| | 7 | 0.164 | 0.137 | 0.164 | 0.137 | 0.164 | 0.137 |
| | 14 | <0.001 | 0.100 | <0.001 | 0.097 | <0.001 | 0.097 |
| | 21 | <0.001 | 0.070 | <0.001 | 0.067 | <0.001 | 0.066 |
| | 28 | <0.001 | 0.053 | <0.001 | 0.050 | <0.001 | 0.049 |
| | 42 | <0.001 | 0.035 | <0.001 | 0.034 | <0.001 | 0.033 |
| | 50 | <0.001 | 0.030 | <0.001 | 0.028 | <0.001 | 0.028 |
| | 100 | 0.001 | 0.016 | 0.001 | 0.016 | 0.001 | 0.016 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 11 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to spring oilseed rape (as additional surrogate crop ac cording to Austrian national requirements), BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R1, pond | 0 | 0.069 | - | 0.068 | - | 0.069 | - |
| | 1 | 0.068 | 0.068 | 0.066 | 0.067 | 0.067 | 0.068 |
| | 2 | 0.066 | 0.068 | 0.065 | 0.066 | 0.066 | 0.067 |
| | 4 | 0.064 | 0.067 | 0.063 | 0.066 | 0.064 | 0.066 |
| | 7 | 0.062 | 0.065 | 0.061 | 0.065 | 0.062 | 0.065 |
| | 14 | 0.057 | 0.063 | 0.056 | 0.062 | 0.057 | 0.063 |
| | 21 | 0.054 | 0.062 | 0.053 | 0.061 | 0.054 | 0.062 |
| | 28 | 0.061 | 0.061 | 0.060 | 0.060 | 0.061 | 0.061 |
| | 42 | 0.053 | 0.059 | 0.052 | 0.058 | 0.053 | 0.058 |
| | 50 | 0.050 | 0.058 | 0.049 | 0.056 | 0.049 | 0.057 |
| | 100 | -** | 0.057 | -** | 0.056 | -** | 0.057 |
| R1, stream | 0 | 0.417 | - | 0.339 | - | 0.339 | - |
| | 1 | <0.001 | 0.222 | <0.001 | 0.222 | <0.001 | 0.222 |
| | 2 | <0.001 | 0.112 | <0.001 | 0.112 | <0.001 | 0.112 |
| | 4 | <0.001 | 0.056 | <0.001 | 0.056 | <0.001 | 0.056 |
| | 7 | <0.001 | 0.045 | <0.001 | 0.045 | <0.001 | 0.045 |
| | 14 | 0.005 | 0.036 | 0.003 | 0.036 | 0.003 | 0.036 |
| | 21 | 0.001 | 0.027 | <0.001 | 0.026 | <0.001 | 0.025 |
| | 28 | <0.001 | 0.022 | <0.001 | 0.020 | <0.001 | 0.020 |
| | 42 | 0.271 | 0.018 | <0.001 | 0.018 | <0.001 | 0.018 |
| | 50 | <0.001 | 0.017 | <0.001 | 0.016 | <0.001 | 0.016 |
| | 100 | <0.001 | 0.011 | <0.001 | 0.010 | <0.001 | 0.010 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 12 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to spring oilseed rape (as additional surrogate crop ac cording to Austrian national requirements), BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R1, pond | 0 | 0.062 | - | 0.061 | - | 0.061 | - |
| | 1 | 0.061 | 0.061 | 0.059 | 0.060 | 0.060 | 0.061 |
| | 2 | 0.060 | 0.061 | 0.059 | 0.060 | 0.060 | 0.060 |
| | 4 | 0.058 | 0.060 | 0.057 | 0.059 | 0.058 | 0.060 |
| | 7 | 0.057 | 0.059 | 0.055 | 0.058 | 0.056 | 0.059 |
| | 14 | 0.053 | 0.057 | 0.052 | 0.056 | 0.053 | 0.057 |
| | 21 | 0.050 | 0.056 | 0.049 | 0.055 | 0.049 | 0.055 |
| | 28 | <0.001 | 0.055 | <0.001 | 0.054 | <0.001 | 0.054 |
| | 42 | -** | 0.052 | -** | 0.051 | -** | 0.052 |
| | 50 | -** | 0.051 | -** | 0.050 | -** | 0.050 |
| | 100 | -** | 0.05 | -** | 0.049 | -** | 0.050 |
| R1, stream | 0 | 0.419 | - | 0.225 | - | 0.225 | - |
| | 1 | <0.001 | 0.183 | 0.001 | 0.183 | 0.001 | 0.183 |
| | 2 | <0.001 | 0.092 | <0.001 | 0.092 | <0.001 | 0.092 |
| | 4 | <0.001 | 0.046 | <0.001 | 0.046 | <0.001 | 0.046 |
| | 7 | <0.001 | 0.040 | <0.001 | 0.040 | <0.001 | 0.040 |
| | 14 | <0.001 | 0.026 | <0.001 | 0.026 | <0.001 | 0.026 |
| | 21 | <0.001 | 0.020 | <0.001 | 0.020 | <0.001 | 0.020 |
| | 28 | <0.001 | 0.017 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 42 | <0.001 | 0.012 | <0.001 | 0.012 | <0.001 | 0.012 |
| | 50 | <0.001 | 0.010 | <0.001 | 0.010 | <0.001 | 0.010 |
| | 100 | <0.001 | 0.009 | <0.001 | 0.008 | <0.001 | 0.008 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 13 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 2 x 100 g a.s. ha-1 to spring oilseed rape (as additional surrogate crop ac cording to Austrian national requirements), BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R1, pond | 0 | 0.131 | - | 0.129 | - | 0.131 | - |
| | 1 | 0.129 | 0.13 | 0.127 | 0.128 | 0.128 | 0.129 |
| | 2 | 0.127 | 0.129 | 0.125 | 0.127 | 0.127 | 0.128 |
| | 4 | 0.124 | 0.127 | 0.123 | 0.126 | 0.124 | 0.127 |
| | 7 | 0.120 | 0.125 | 0.119 | 0.124 | 0.120 | 0.125 |
| | 14 | 0.112 | 0.121 | 0.111 | 0.119 | 0.112 | 0.120 |
| | 21 | 0.106 | 0.119 | 0.104 | 0.117 | 0.105 | 0.118 |
| | 28 | <0.001 | 0.117 | <0.001 | 0.115 | <0.001 | 0.116 |
| | 42 | -** | 0.111 | -** | 0.110 | -** | 0.111 |
| | 50 | -** | 0.109 | -** | 0.107 | -** | 0.108 |
| | 100 | -** | 0.108 | -** | 0.106 | -** | 0.108 |
| R1, stream | 0 | 0.536 | - | 0.536 | - | 0.536 | - |
| | 1 | 0.001 | 0.438 | 0.001 | 0.438 | 0.001 | 0.438 |
| | 2 | 0.001 | 0.221 | 0.001 | 0.221 | 0.001 | 0.221 |
| | 4 | 0.001 | 0.111 | 0.001 | 0.111 | 0.001 | 0.111 |
| | 7 | <0.001 | 0.083 | <0.001 | 0.083 | <0.001 | 0.083 |
| | 14 | <0.001 | 0.055 | <0.001 | 0.055 | <0.001 | 0.055 |
| | 21 | <0.001 | 0.042 | <0.001 | 0.042 | <0.001 | 0.042 |
| | 28 | <0.001 | 0.036 | <0.001 | 0.036 | <0.001 | 0.036 |
| | 42 | 0.001 | 0.027 | 0.001 | 0.026 | 0.001 | 0.026 |
| | 50 | <0.001 | 0.024 | <0.001 | 0.022 | <0.001 | 0.022 |
| | 100 | <0.001 | 0.018 | <0.001 | 0.018 | <0.001 | 0.018 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
R = Runoff mitigation by vegetated filter strips [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 14 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 2 x 100 g a.s. ha-1 to spring oilseed rape (as additional surrogate crop ac cording to Austrian national requirements), BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R1, pond | 0 | 0.121 | - | 0.119 | - | 0.121 | - |
| | 1 | 0.119 | 0.120 | 0.117 | 0.118 | 0.119 | 0.120 |
| | 2 | 0.118 | 0.119 | 0.116 | 0.117 | 0.117 | 0.119 |
| | 4 | 0.115 | 0.118 | 0.113 | 0.116 | 0.114 | 0.117 |
| | 7 | 0.111 | 0.116 | 0.109 | 0.114 | 0.111 | 0.115 |
| | 14 | 0.104 | 0.112 | 0.102 | 0.110 | 0.103 | 0.111 |
| | 21 | 0.097 | 0.110 | 0.096 | 0.108 | 0.097 | 0.109 |
| | 28 | <0.001 | 0.108 | <0.001 | 0.106 | <0.001 | 0.107 |
| | 42 | -** | 0.103 | -** | 0.101 | -** | 0.102 |
| | 50 | -** | 0.100 | -** | 0.097 | -** | 0.099 |
| | 100 | -** | 0.098 | -** | 0.096 | -** | 0.098 |
| R1, stream | 0 | 0.388 | - | 0.388 | - | 0.388 | - |
| | 1 | 0.001 | 0.255 | 0.001 | 0.255 | 0.001 | 0.255 |
| | 2 | 0.001 | 0.128 | 0.001 | 0.128 | 0.001 | 0.128 |
| | 4 | <0.001 | 0.092 | <0.001 | 0.092 | <0.001 | 0.092 |
| | 7 | <0.001 | 0.080 | <0.001 | 0.080 | <0.001 | 0.080 |
| | 14 | <0.001 | 0.053 | <0.001 | 0.053 | <0.001 | 0.053 |
| | 21 | <0.001 | 0.041 | <0.001 | 0.041 | <0.001 | 0.041 |
| | 28 | <0.001 | 0.035 | <0.001 | 0.035 | <0.001 | 0.035 |
| | 42 | 0.001 | 0.023 | 0.001 | 0.023 | 0.001 | 0.023 |
| | 50 | <0.001 | 0.020 | <0.001 | 0.020 | <0.001 | 0.020 |
| | 100 | <0.001 | 0.016 | <0.001 | 0.016 | <0.001 | 0.015 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 15 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to legumes (as additional surrogate crop according to Aus trian national requirements), BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R3, stream | 0 | 0.511 | - | 0.256 | - | 0.255 | - |
| | 1 | 0.001 | 0.219 | 0.001 | 0.219 | 0.060 | 0.219 |
| | 2 | <0.001 | 0.116 | <0.001 | 0.116 | 0.001 | 0.116 |
| | 4 | <0.001 | 0.059 | <0.001 | 0.059 | 0.001 | 0.059 |
| | 7 | <0.001 | 0.039 | <0.001 | 0.034 | <0.001 | 0.034 |
| | 14 | <0.001 | 0.020 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 21 | <0.001 | 0.013 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 28 | 0.008 | 0.018 | 0.008 | 0.015 | <0.001 | 0.015 |
| | 42 | <0.001 | 0.012 | <0.001 | 0.010 | <0.001 | 0.010 |
| | 50 | <0.001 | 0.010 | <0.001 | 0.009 | <0.001 | 0.008 |
| | 100 | <0.001 | 0.007 | <0.001 | 0.007 | <0.001 | 0.006 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 16 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 1 x 100 g a.s. ha-1 to legumes (as additional surrogate crop according to Aus trian national requirements), BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R3, stream | 0 | 0.511 | - | 0.256 | - | 0.247 | - |
| | 1 | 0.001 | 0.212 | 0.001 | 0.212 | 0.058 | 0.212 |
| | 2 | <0.001 | 0.113 | <0.001 | 0.113 | 0.001 | 0.113 |
| | 4 | <0.001 | 0.057 | <0.001 | 0.057 | 0.001 | 0.057 |
| | 7 | <0.001 | 0.038 | <0.001 | 0.033 | <0.001 | 0.033 |
| | 14 | <0.001 | 0.020 | <0.001 | 0.016 | <0.001 | 0.016 |
| | 21 | <0.001 | 0.013 | <0.001 | 0.011 | <0.001 | 0.011 |
| | 28 | 0.008 | 0.018 | 0.008 | 0.015 | <0.001 | 0.014 |
| | 42 | <0.001 | 0.012 | <0.001 | 0.010 | <0.001 | 0.010 |
| | 50 | <0.001 | 0.010 | <0.001 | 0.008 | <0.001 | 0.008 |
| | 100 | <0.001 | 0.007 | <0.001 | 0.006 | <0.001 | 0.006 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 17 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 2 x 100 g a.s. ha-1 to legumes (as additional surrogate crop according to Aus trian national requirements), BBCH 30**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R3, stream | 0 | 0.481 | - | 0.481 | - | 0.481 | - |
| | 1 | 0.113 | 0.413 | 0.113 | 0.413 | 0.113 | 0.413 |
| | 2 | 0.002 | 0.219 | 0.002 | 0.219 | 0.002 | 0.219 |
| | 4 | 0.001 | 0.111 | 0.001 | 0.111 | 0.001 | 0.111 |
| | 7 | 0.001 | 0.064 | 0.001 | 0.064 | 0.001 | 0.064 |
| | 14 | <0.001 | 0.043 | <0.001 | 0.037 | <0.001 | 0.036 |
| | 21 | <0.001 | 0.029 | <0.001 | 0.025 | <0.001 | 0.025 |
| | 28 | <0.001 | 0.031 | <0.001 | 0.025 | <0.001 | 0.024 |
| | 42 | <0.001 | 0.021 | <0.001 | 0.017 | <0.001 | 0.017 |
| | 50 | <0.001 | 0.018 | <0.001 | 0.016 | <0.001 | 0.016 |
| | 100 | <0.001 | 0.013 | <0.001 | 0.012 | <0.001 | 0.011 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

**Table A 18 Step 3 and 4: PECsw,act and PECsw,twa of mefentrifluconazole following applica tion of 2 x 100 g a.s. ha-1 to legumes (as additional surrogate crop according to Aus trian national requirements), BBCH 59**

| Location | Time* [d] | Step 3 | | Step 4: Buffer zones and mitigation | | | |
|---|---|---|---|---|---|---|---|
| | | Edge-of-field | | 50N | | 5mD | |
| | | PECsw [µg L-1] | | PECsw [µg L-1] | | PECsw [µg L-1] | |
| | | Actual | TWA | Actual | TWA | Actual | TWA |
| R3, stream | 0 | 0.485 | - | 0.485 | - | 0.485 | - |
| | 1 | 0.114 | 0.417 | 0.114 | 0.417 | 0.114 | 0.417 |
| | 2 | 0.002 | 0.221 | 0.002 | 0.221 | 0.002 | 0.221 |
| | 4 | 0.001 | 0.112 | 0.001 | 0.112 | 0.001 | 0.112 |
| | 7 | 0.001 | 0.064 | 0.001 | 0.064 | 0.001 | 0.064 |
| | 14 | <0.001 | 0.043 | <0.001 | 0.037 | <0.001 | 0.036 |
| | 21 | <0.001 | 0.029 | <0.001 | 0.025 | <0.001 | 0.025 |
| | 28 | <0.001 | 0.031 | <0.001 | 0.025 | <0.001 | 0.024 |
| | 42 | <0.001 | 0.021 | <0.001 | 0.018 | <0.001 | 0.017 |
| | 50 | <0.001 | 0.018 | <0.001 | 0.016 | <0.001 | 0.016 |
| | 100 | <0.001 | 0.013 | <0.001 | 0.012 | 0.000 | 0.011 |

* Time = days following maximum concentration (Actual) or time interval (TWA)
** Simulated time too short for calculation (might not be applicable for this table)
D = Drift mitigation by no-spray buffer zones [m]
N = Drift mitigation by drift reducing nozzles [%]

## Sulfur and Sulfate

## Steps 1-2:

**Table A 19 Steps 1 and 2: $PEC_{sw,act}$ of sulfur following single/twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals**

| Time * [d] | Actual | |
|---|---|---|
| | Single application | |
| | $PEC_{sw}$ [µg $L^{-1}$] | |
| | Step 1 | Step 2 (North Europe/South Europe)[a] |
| 0 | 159.52 | 22.07 |
| 1 | 141.14 | 9.88 |
| 2 | 141.04 | 6.51 |
| 4 | 140.85 | 5.32 |
| 7 | 140.56 | 5.22 |
| 14 | 139.88 | 5.19 |
| 21 | 139.20 | 5.16 |
| 28 | 138.53 | 5.14 |
| 42 | 137.19 | 5.09 |
| 50 | 136.43 | 5.06 |
| 100 | 131.78 | 4.89 |

* Time = days following maximum concentration (Actual).
[a] At step 2 only spray drift deposition rates for a single application was considered for sulfur. Therefore, same $PEC_{sw}$ results for North Europe and South Europe zones.

**Table A 20 Steps 1 and 2: $PEC_{sw,act}$ of sulfate following twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals**

| Time * [d] | Actual | | |
|---|---|---|---|
| | Multiple application | | |
| | $PEC_{sw}$ [mg $L^{-1}$] | | |
| | Step 1 | Step 2 North Europe | Step 2 South Europe |
| 0 | 9.72 | 1.64 | 3.16 |
| 1 | 9.71 | 1.64 | 3.16 |
| 2 | 9.71 | 1.64 | 3.16 |
| 4 | 9.69 | 1.63 | 3.15 |
| 7 | 9.67 | 1.63 | 3.15 |
| 14 | 9.63 | 1.62 | 3.13 |
| 21 | 9.58 | 1.61 | 3.12 |
| 28 | 9.53 | 1.61 | 3.10 |
| 42 | 9.44 | 1.59 | 3.07 |
| 50 | 9.39 | 1.58 | 3.05 |
| 100 | 9.07 | 1.53 | 2.95 |

* Time = days following maximum concentration (Actual).

**Table A 21 Step 1: $PEC_{sed,act}$ of sulfur following twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals**

| Time * [d] | Actual<br>Multiple application<br>$PEC_{sed}$ [mg $Kg^{-1}$] |
|---|---|
| 0 | 9.94 |
| 1 | 10.20 |
| 2 | 10.20 |
| 4 | 10.20 |
| 7 | 10.20 |
| 14 | 10.10 |
| 21 | 10.10 |
| 28 | 10.00 |
| 42 | 9.92 |
| 50 | 9.86 |
| 100 | 9.53 |

* Time = days following maximum concentration (Actual).

**Table A 22 Step 2: $PEC_{sed,act}$ of sulfur following single/twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals**

| Time * [d] | Step 2 | | | |
|---|---|---|---|---|
| | March – May | | | |
| | North Europe | | South Europe | |
| | Actual | | Actual | |
| | $PEC_{sed}$ [mg $Kg^{-1}$] | $PEC_{sed}$ [mg $Kg^{-1}$] | $PEC_{sed}$ [mg $Kg^{-1}$] | $PEC_{sed}$ [mg $Kg^{-1}$] |
| | Single application | Multiple application | Single application | Multiple application |
| 0 | 0.928 | 1.82 | 1.72 | 3.39 |
| 1 | 0.928 | 1.82 | 1.72 | 3.39 |
| 2 | 0.927 | 1.81 | 1.72 | 3.39 |
| 4 | 0.926 | 1.81 | 1.72 | 3.38 |
| 7 | 0.924 | 1.81 | 1.71 | 3.38 |
| 14 | 0.920 | 1.80 | 1.70 | 3.36 |
| 21 | 0.916 | 1.79 | 1.70 | 3.35 |
| 28 | 0.911 | 1.78 | 1.69 | 3.33 |
| 42 | 0.902 | 1.77 | 1.67 | 3.30 |
| 50 | 0.897 | 1.76 | 1.66 | 3.28 |
| 100 | 0.867 | 1.70 | 1.61 | 3.17 |

* Time = days following maximum concentration (Actual).

**Table A 23 Step 1: $PEC_{sed,act}$ of sulfate following twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals, $K_{f,oc}$ = 10000**

| Time * [d] | Actual |
|---|---|
| | Multiple application |
| | $PEC_{sed}$ [mg $Kg^{-1}$] |
| 0 | 66.90 |
| 1 | 67.80 |
| 2 | 67.70 |
| 4 | 67.60 |
| 7 | 67.50 |
| 14 | 67.20 |
| 21 | 66.80 |
| 28 | 66.50 |
| 42 | 65.90 |
| 50 | 65.50 |
| 100 | 63.30 |

* Time = days following maximum concentration (Actual).

**Table A 24 Step 2: $PEC_{sed,act}$ of sulfur following twofold application of 2400 g a.s. $ha^{-1}$ to winter cereals, $K_{f,oc}$ = 10000**

| Time * [d] | Step 2 | |
|---|---|---|
| | March – May | |
| | North Europe | South Europe |
| | Actual | Actual |
| | $PEC_{sed}$ [mg $Kg^{-1}$] | $PEC_{sed}$ [mg $Kg^{-1}$] |
| | Multiple application | Multiple application |
| 0 | 6.12 | 11.40 |
| 1 | 6.11 | 11.40 |
| 2 | 6.11 | 11.40 |
| 4 | 6.10 | 11.40 |
| 7 | 6.09 | 11.40 |
| 14 | 6.06 | 11.30 |
| 21 | 6.03 | 11.30 |
| 28 | 6.00 | 11.20 |
| 42 | 5.94 | 11.10 |
| 50 | 5.91 | 11.00 |
| 100 | 5.71 | 10.70 |

* Time = days following maximum concentration (Actual).