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# **Version history**

		Doğument identific and
Date	Data points containing amendments or additions <sup>1</sup> and brief description	Oversion number
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#### **CP 10** ECOTOXICOLOGICAL STUDIES ON THE PLANT PROTECTION **PRODUCT**

#### Use pattern considered in this risk assessment

**Table10-1: Intended application pattern** 

Document MCI TFS WG 50	P: Section 10 Eco	otoxicological	studies		
CP 10	ECOTOXIC PRODUCT	COLOGICA	L STUDIES	S ON THE PI	LANT PROTECTION
Use pattern o	considered in	this risk ass	essment		
<b>Table10- 1:</b>	Intended a	application pa	attern		
Стор	Timing of application (range)	Number of applications	Application interval	Maximum label rate (range) [kg/kg]	Maximum application rate, individual greatment (ranges)  [g a.s./ha]  urifloxystrobin
Apple/Pear/ Quince (early)	BBCH 31 - 89	3	\$10°	0.15%	75 27
Apple/Pear/ Quince (late)	BBCH 55 - 87	3		5.225 F	0 112,5 A
Strawberries	BBCH 55 - 89	2	7 7	039	150
Strawberries	BBCH 10 - 92			\$0.25\$	
Grapes	BBCH 12 -89		\$\frac{10}{2}		\$\frac{125}{2}

# Definition of the residue for risk assessment

Justification for the residue definition for risk assessment , Point 7.4.1 and MCA Sec. 6, Point 6.7.

Definition of the residue for rist assessment **Table10-2:** 

(a)	Residue Definition & S S S
Compartment	
Soil	trifloxystrobin, &GA 357261, &GA 324013, CGA 373366, CGA 381318, NOA 413161, NOA 473163, CGA 387276, NOA 409480
Groundwater	same as soil & S
Surface water	CCA 107176 2 hydroxymathyllhanganitaila
Sediment	same as soil was CGA 357262, CGA 107170, 2-hydroxymethylbenzonitrile trifloxystrobin, CGA 320113
Air 🗣	triffoxystrobin, CGA 107170
	trifloxystrobin, CGA 107170  trifloxystrobin, CGA 107170

#### **CP 10.1** Effects on birds and other terrestrial vertebrates

The risk assessment has been performed according to "European Food Safety Authority; Guidance Document on Risk Assessment for Birds & Mammals on request from EFSA? (EFSA Journa) 2009; 7(12):1438. doi:10.2903/j.efsa.2009.1438).

#### **CP 10.1.1** Effects on birds

Table 10.1.1-1: Endpoints used in risk assessment

Test substance	Exposure	Species 🚜 💇	Endpoint (	Reference Reference
Trifloxystrobin	Acute risk assessment	Bobwhite quan	D <sub>50</sub> pag a.s./k@bw	M-032008-01- KCA-8.1.1.1401
	Reproductive risk assessment	Bobwhite quail	EL mg a.s./kg by/d	100 0220 02 01 1 V

Table 10.1.1- 2: Relevant indicator species for risk assessment on screening level acc. to EFSA GD (2009)

Crop	Indicator species	Acute risk assessment Reproductive risk assessment
Orchards	Small insectivorous bird	A6.8
Strawberries	Small omniver ous bird	64.8 ° 4.4 ° 64.8
Grapes	Small omniorous bird	7, \$\infty 95.3\text{3}  \text{0}  \text{3}  38.9

<sup>&</sup>lt;sup>1</sup> List of Endpoints: EU Review Report for trifloxystrobin (SANCO/4339/2000-Final)

<sup>&</sup>lt;sup>2</sup> NOEC listed as 320 ppm, converted to 32 mg/kg bw/d with default conversion factor from EFSA GD 2009

### ACUTE DIETARY RISK ASSESSMENT

Table 10.1.1-3: Screening level acute risk assessment for birds

						(( ))*	(7)	'n
	Indicator		DDD			<b>₽</b> D50	4	
Crop	species	Appl. rate [kg a.s./ha]	SV90	MAF90	DDD	[mg a.s./kg bw]	TERA	<b>Tri</b> ğger
Trifloxystrobin				>		X C)		*
Orchards 3x 75 g/ha, 10d int. BBCH 31-89	Small	0.075	46,8	1.47	\$.16		\$88 \$88	
Orchards 3x 112.5 g/ha, 10d int. BBCH 55-87	insectivorous bird	0.1125	46.8°	1.40	7.74 2.74		~ ≥,2,38	
Strawberries 2x 150 g/ha, 7d int. BBCH 55-89	Small	0.150	158.8	1.38	3 <u>2</u> 9	\$2000 <sup>℃</sup>	>6	
Strawberries 2x 125 g/ha, 7d int. BBCH 10-92	omnivorous bird	0.125	\$38.8.2\S	1.38	27.4		V > 72	Õ
Grapes 3x 125 g/ha, 10d int. BBCH 12-89	Small, omnivorous bird	Ø.125	\$3.3 \$3.3	(5) (4.47 (5)	17.5		>> 114	

The TERA values calculated in the screening tovel agente risk assessment for birds exceed the a-prioriacceptability trigger of 10 for all evaluated scenarios. Thus, the agente risk to birds can be considered as low and acceptable without need for further, more realistic risk assessment.

Table 10.1.1-4 Screening level reproductive risk assessment for birds

			<del>V</del>	DD &		<b>1</b> /2	NOARI		1
Crop	Indicator &	_^(())	O <sup>r</sup>	DD Ş		DDD	NOAEL [mg	TERLT	Trigger
	species \$	rate¶kg _a.s./ha]_		MAE	fæva		a.s./kg bw/d]		881
Trifloxystrobin				o s	<i>A</i>				
Orchards 3x 75 g/ha, 10 g/ht. BBCH 31-89	Small	0.075	018.2	1.75	0.53	1.27		≥ 25	
Orchards 3x 112 g/ha, 10d int. BBCH 55-87	insectivorous	0.1125	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	¥) 1.75	0.53	2.07		≥ 17	
Strawberries 2x 150 g/ha, 7d and. BBCH 55-89	Small	0.450	\$4.8	1.62	0.53	8.32	≥ 32	≥ 3.8	5
Strawbernes 2x 125 g/ka, 7d int BBCN 10-92	<b>J</b> ord 5	n 🔊 ( ))	64.8	1.62	0.53	6.94		≥ 4.6	
Grapes 3 x 125 gha, 10d sht. BBQ 12-89	Small	0.125	38.9	1.50	0.53	3.87		≥ 8.3	

The TER<sub>LT</sub> values calculated in the screening level reproductive risk assessment for birds exceed the a-priori-acceptability trigger of 5 for the scenarios in grapes and orchards. Thus, the reproductive risk to birds from the use in grapes and orchards can be considered as low and acceptable without need for further, more realistic risk assessment.

The TER<sub>LT</sub> values calculated in the screening level reproductive risk assessment for body do not reach the a-priori-acceptability trigger of 5 for the scenarios in strawberries.

Thus, the reproductive risk to birds from the use in so where is how to be evaluated at the Tier level based on the generic focal species scenarios.

Table 10.1.1- 5: Relevant generic avian focal species scenarios for Tier 1 risk assessment in strawberries

			Y a 2.7	
Crop scenario	Most critical window of relevance for generic focal species scenario	Generic foral species	Representatives species	Short cut values for reproductive RA Sased on RUDm
Strawberries	BBCH ≥ 40	Small omnivoidas bires	Woodbark	4.4
2x 150 g/ha BBCH 55-89	BBCH 61√89 🕵	Frugivorous bird "####	Starling &	13.4
7d int.	BBČ1¥ ≥ 20	Small in ectivorous bird "wag wil"	Yellow/wagtail	9.7
Strawberries	<b>B</b> BCH 10-39	Small omn vorous bird	Woodlark	10.9
2x 125 g/ha BBCH 10-92	BBCH 61-89	Frugivorous bird S  "starting"	StaQmg	13.4
7d int.	BBCH4B-19	Small insectivorous bird	Ye <b>%</b> ow wagtail	11.3

Table 10.1.1-6: The 1 reproductive risk assessment for birds (use in strawberries)

À	Generic foest	1 1 0		MAF <sub>m</sub>	ftwa	DDD	NOAEL [mg a.s./kg bw/d]	TER <sub>LT</sub>	Trigger
Trifloxysorobin	, \$\lambda \tilde{Q}^2				1	1		1	1
Strawberries	Small omnivorous bird "fark"		<b>4.</b> 4			0.57		≥ 57	
2x 150 g/ha BBCH 55-89	Frugivorous bited  "starling",  "starling",	00/50	13.4	1.62	0.53	1.72	≥ 32	≥ 19	5
7d int.	Small insectivorous & bird "wigtail"		9.7			1.25		≥ 26	
Strawberries 2x 125 g/ha	Small ornnivorous bird "lant"	·	10.9			1.17		≥ 27	
BBCH 10€92	Frugivorous bird "stailing"	0.125	13.4	1.62	0.53	1.43	≥ 32	≥ 22	5
7d int.	Small insectivorous bird "wagtail"		11.3			1.21		≥ 26	

The TER<sub>LT</sub> values calculated in the Tier 1 reproductive risk assessment for birds exceed the a-prioriacceptability trigger of 5 for the scenarios in strawberries. Thus, the reproductive risk to birds from all uses in grapes, orchards and strawberries can be considered as low and acceptable without pred for further, more realistic risk assessment.

### Acute risk assessment for birds drinking contaminated water from pools in leaf who is

In the EFSA GD (2009), section 5.5, step 1 the following guidance is given on the selection of relevant scenarios for assessing the risk of pesticides via drinking water to birds and mampals:

- Leaf scenario: Birds taking water that is collected in leaf whork after application of a pesticide to a crop and subsequent rainfall or irrigation.
- Puddle scenario. Birds and mammals taking water from puddles formed on the soil surface of a field when a (heavy) rainfall event follows the application of a pesticide to a crop or lare soil.

For the crops under assessment in this evaluation (grapevine, pome fruit orchards, strawberries) the leaf scenario is not considered relevant. Risk for birds from Grinking water in putalles is addressed in Table 10.1.1-7

# Long-term risk assessment for birds desinking contaminated water in proddles

Table 10.1.1-7: Evaluation of potential concern for exposure of birds drinking water

Crop	Kocy [L/kg]	Application rate * MAF [g a,s. ha]	NO(A)EL Lang a.s.	«Naugy» 🦼	"Escape clapse" No oncern If ratio	Conclusion
Trifloxystrobin					,	
Strawberries	23/9	£1.62	<b>→</b> 32 <b>→</b>	S ≤ 766 S	≤ 3000	No concern

# RISK ASSESSMENT OF SECONDARY POISONING

Table 10.1.1-8: Log Pow values of trifloxystropin and its metabolites a)

Substance	log Pow	Compartment	Reference
Trifloxystrobin Q		Soil Surface water	
CGA 35\(\tilde{Q}\)261	388 (pH2)	Soil, surface water	
CGA 57262	9.39 (ph/) , 9	Surface water	MCA, Section 2, point 2.7
C&A 357276	4.7	Soil, surface water	
√NOA 409480 √S	4.2 0	Soil, surface water	

a) only compounds with log wow > 3 mentioned

In the risk assessment for secondary poisoning, the NOAEL obtained for the parent trifloxystrobin is also used as surrogate emploint for the metabolites under assessment (CGA 357261, CGA 357262, CGA 357276 and NOA 409480). This approach is considered appropriate since the available data suggest in fact lower toxicity of the metabolites than the parent <sup>3</sup>. Furthermore, there are additional margins of affety that can account for any remaining uncertainty.

<sup>&</sup>lt;sup>3</sup> Comparative toxicity data in MCA 5.8.1 (mammals); and MCA 8.2 in Tab. 8.2.1-1 and -2 (fish); Tab. 8.2.4.1-1 and -2 (Daphnia); Tab. 8.2.8-1 and -2 (algae)

Table 10.1.1-9: Avian generic focal species for the Tier 1 risk assessment of secondary poisoning

Generic avian indicator species	Body weight [g]	FIR [g]		FIR/by
Earthworm eater	100	104.6	Z,	1:95
Fish eater	1000	159	4	<b>Q</b> 159

Table 10.1.1- 10: BCF calculation for earthworms

parameter	Trifloxystrobin	CGA-357261	<b>QGA 357276</b> ₹	NOA 469480 J
$K_{OW}$	32000	27244	y " <b>S</b> Ø119 <sup>©</sup>	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
K <sub>OC</sub> [mL/g]	2377		81700	2356
$f_{OC}$	0.02	Q. 102 E	~ 00° 0°	√ 0.0½ √
DCE	4	$BCF_{\text{sym}} = (0.84 + 1.00)$	0.012 K <sub>a</sub> ) / f <sub>oc</sub> *K <sub>oc</sub>	
$\mathrm{BCF}_{\mathrm{worm}}$	8.10	9.00	3.77	♥ 4.1 Å

Long-term DDD and TER calculation for each words eating birds

Table 10.1.1- 11: Tier 1 long form and the second s Table 10.1.1-11: Tier 1 long term DDD and TER calculation for earthworm-eating birds (Trifloxystrobro)

	0.003 0.003 0.004 0.004	Grapes C	Strawberries
Trifloxystrobin 5			1
BCF <sub>worm</sub>	8.10	© 8.10 °	8.10
Trifloxystrobin  BCF <sub>worm</sub> PEC <sub>soil</sub> (twa, 21 d) fing/kg N  PEC <sub>worm</sub> [mg/kg]  FIR/bw  DDD [mg/kg bw/d]	8.10 0.00	8.10	0.012
PEC <sub>worm</sub> [mg/kg	0.905	0.06	0.10
FIR/bw	Q 1.05 0	1.05	1.05
DDD [mg/kg bw/d]	0.04	<b>% %</b> .06	0.10
NO(A)EĽ [mg/kg bw/ð]	\$32 \$	∑ ≥ 32	≥ 32
TER <sub>LT</sub>	\$\frac{1}{2} \frac{1}{2} \fra	≥ 539	≥ 314
Trigger Q 5		5	5
PECworm [mg/kg] PECworm [mg/kg] FIR/bw DDD [mg/kg bw/d] NO(A)EE [mg/kg bw/d] TERLT Trigger  a) Worst-case PEC soil two 21 d value			

Table 10.1.1- 12: Tier 1 long-term DDD and TER estimation for earthworm-eating birds (metabolites)

	CGA 357261	CGA 357276	NOA 409480
BCF <sub>worm</sub>	9.0	3.7	4.14
PEC <sub>soil</sub> (twa, 21 d)[mg/kg] a)	0.024	0.004	00014
PEC <sub>worm</sub> [mg/kg]	0.22	0.01	~0.06~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
FIR/bw	1.05	1.05	
DDD [mg/kg bw/d]	0.23	0.00	\$ \$3.06 \$ W
NO(A)EL [mg/kg bw/d] b)	≥ 32	232 °	
TER <sub>LT</sub>	≥ 141 🔎	~≥ 2067© * *	© ≥ 597 ©
Trigger	5 & 6	5 5 7 J	\$\frac{1}{2}\tag{5}

a) worst-case PEC<sub>soil</sub> twa 21 d value (use in strawberries 2 \$\times 75 g/ha)

### Long-term DDD and TER calculation for fish-eating birds

Table 10.1.1- 13: Tier 1 long-term DDD and TER calculation for fish-eating birds

	Qrchards Q	Grapes S	Strawberries
Trifloxystrobin			
BCF <sub>fish</sub>	\$\times \times \	y 431 y Q	<b>431</b>
PEC <sub>SW</sub> (twa, 21 d)[mg/L] a	© 0.0002\$ L	\$ 0.000 1×12 ×	0.0000586
PEC <sub>fish</sub> [mg/kg]	0.108	© 40.061 <sub>6</sub>	0.025
FIR/bw	\$ \ <b>Ø</b> !159 \$ \$	0.15	0.159
DDD [mg/kg bw/d]	y V 0.02	\$\ 0.\forall 1	0.004
NO(A)EL [mg/kg/bw/d]		₹ <u>32</u> ₹	≥ 32
TER <sub>LT</sub>		> 0 ≥310\$	≥7969
Trigger 🗸 🗶 🐇	3 5 5 ° °		5

a) Worst-case PEC<sub>sw</sub> twa 24 d value, see Capter 9.2.5 of his document

No specific secondary poisoning risk assessment is performed for the metabolites under assessment (CGA 357261, CGA 357265, CGA 357276 and NOV 409480). This approach is considered appropriate since the available data suggest lower toxicity of the metabolites than the parent. The large additional margins of safety in the calculation on the parent can account for any remaining uncertainty.

#### CP 10.1.1.1

No new studies were required

The results presented above, no further studies were necessary.

b) endpoint of parent used in estimation

#### **CP 10.1.2** Effects on terrestrial vertebrates other than birds

Table 10.1.2-1: Endpoints used in risk assessment

Test substance	Exposure	Species/Origin	F	Endpoint 🏀	Reference
	Acute risk assessment	Rat	$\mathrm{LD}_{50}$	>5000 mg a.s.kg bw	LoEP \( \) M-039034-01-1 KCA 5.2 \( \) 01 \( \) 9
Trifloxystrobin		EFSA GD Screening level	ADI NOAEL	J9.8 mg@.s./kg bw/d	LOEP Y
	Long-term	EFSA GD	NOAEL	2.3	Logo o
	risk assessment	Tier 1 level	∡@-gen repro	mg a.s./kg bw@	
		EFSA GD	A CAR 122 M		
		Tier 2 level 🕸	pup weight	∕ mga.s./kg bw/d \	OKCA 8 1.2.2 001

Table 10.1.2- 2: Relevant indicator species foorisk assessment on screening level acc. to EFSA GD (2009)

Сгор	Indicator species Acute risk assessmen Reproductive risk
Orchards	Small herbivorous man sural of \$1366 \$7 \$7 \$7 \$2,3
Strawberries	Small herbivorous mammal 118.4 4 48.3
Grapes	Small herbiyorous mammar

#### ACUTE DIETARY RISK ASSESSMENT

Table 10.1.2- 3: Screening level acute risk assessment for wild manifold

				***			
Crop Indicator species	Appl Tate [ko	\$V90 &	MAF 90	© DDD	LD <sub>50</sub> [mg a.s./kg bw]	TERA	Trigger
Trifloxystrobin			Ž,				
Orchards 3x 75 g/ha, 10d int. BBCH 3199 Orchards	0075	\$6.4 6	҈ 1.47	15.0		> 322	
3x 112.5 % ha, 10d int. BB©H 55-87	0.112/5	136/4	1.47	22.6		> 222	
Strawberries Strall 2x Y50 g/ha, 7d int. BBCH 55-89, mammal	0.150	) 118.4	1.57	24.5	>5000	> 204	10
Strawberries  2x 125 g/ha 7d int.  BBCH 10-92	125@	118.4	1.38	20.4		> 245	
2X 123 g/ha, /d int. // BBCH 00-92 Grapes 3x 125 g/ha, /d int. // BBCH 02-89	0.125	136.4	1.47	25.1		> 199	

The TEN values calculated in the screening level acute risk assessment for wild mammals exceed the a-priori-acceptability trigger of 10 for all evaluated scenarios. Thus, the acute risk to wild mammals can be considered as low and acceptable without need for further, more realistic risk assessment.

#### LONG-TERM REPRODUCTIVE ASSESSMENT

The reproductive risk assessment for wild mammals in the frame of the Annex 1 Renewal of trifloxystrobin is conducted according to the stepwise approach recommended in the EFSA (2009).

This stepwise approach includes a stepwise identification selection of the endpoint to be used at the different stages of the reproductive risk assessment (screening level.) Tier 1 – higher Tier, which recommended in the EFSA GD (2009), of the wild mammal reproductive risk assessment.

Simple reference to the list of endpoints established for the Annex 1 listing of trailoxystrobin (SANCO/4339/2000-Final, 2003) is not considered appropriate, since this dist contains two entries ("2" gen. repro NOEC > 1500 ppm" and "short term oral to dicity to mammals 20-day rat: 100 ppm 6.4 mg/kg bw/day"), and because the rationale behind the inclusion of these two values cannot be unequivocally traced back in the relevant documents.

Therefore it is necessary to re-initial the evaluation for the wild prammal reproductive risk assessment endpoint, starting with the tiered approach recommended in the EFSA GD (2009) for that purpose:

"The screening assessment may be useful to identify quickly those substances that pose very low reproductive risk, for which more detailed assessment is unnecessary"

**Step 1:** "defermine if breeding mammets could be exposed. Qif not, no further assessment is required"

⇒ pplications are made in the field during spring and sunmer: assessment is required.

Step 2: "if expossible when the same endpoint as on the human risk assessment shall be used (without the assessment) factor applied in the human risk assessment)"

- ⇒ In the current Lor OADI \ 0.1 mg/kg by/d; 2 year rat study; safety factor 100)"
- ⇒ NOAEL currently used in human risk assessment: 9.8 mg/kg bw/d

Step 3: "identify the appropriate indicator species and short-cut value for the crop under assessment. ... Cálculate the daily dietary dexe (DDD) =dexpplication rate x shortcut value x TWA x MAFm"

⇒ Table 10.1.244 with TER<sub>Li</sub> calculated for representative uses according to Table 12 of the EFS GD (2009) with MAF calculate according to App. H of EFSA GD (2009) and with the ..... St d free =

Table 10.1.2-4: Screening level reproductive risk assessment for wild mammals

									a.
	I., dia		DDD				NOAEL		. 🐉
Crop	Indicator species	Appl. rate [kg a.s./ha]	SVm	MAFm	f <sub>TWA</sub>	DDD	[mg a.s./kg bw/d]	TER <sub>LT</sub>	Trigger
Trifloxystrobin							. F		
Orchards 3x 75 g/ha, 10d int. BBCH 31-89		0.075	72.3	1.75	0.53	5.03		7 1.9 ×	
Orchards 3x 112.5 g/ha, 10d int. BBCH 55-87	a 11	0.1125	72.3	1.75	0.50	7. <b>5</b> 4	\ \ \ \ \ \	1.3	
Strawberries 2x 150 g/ha, 7d int. BBCH 55-89	Small herbivorous mammal	0.150	<b>48.3</b>	Ž 1.62	0.53 Q	6.20		1.6 4	5
Strawberries 2x 125 g/ha, 7d int. BBCH 10-92		0.125	A8.3	71.62 (	0.53	\$5.17°			
Grapes 3x 125 g/ha, 10d int. BBCH 12-89		0,025	72.3	1.75	9.53 9.53	8.38			

Step 4: "calculate the toxicity exposure ratio and compare the TER to the respective trigger values"

⇒ TER are below the trigger value of 5: 250 to Tier 1 (step 5)

The TER<sub>LT</sub> values calculated in the screening level reproductive risk assessment for wild mammals do not reach the a-prior-acceptability trigger of 5 for the scenarios in orchards, strawberries or grapes. Thus, the reproductive risk to wild mammals from the uses in in Schards, strawberries and grapes has to be evaluated at the fier Juevel based on the generic focal species scenarios and the guidance given for Tier 1 endpoint selection in the EFSA GD (2009).

#### Tier 1 risk assessment)

Step 5: "identify the endpoint from the developmental study that is used in the human risk assessment." Check if the developmental study contained lower endpoints that were considered rodent specific, and if so take the lowest of these instead of the endpoint used for human risk assessment ... Identify the lowest NOAEL from the 2-generation rat study. ... Use the lowest of these endpoints and project to step 6.

... The lowest endpoint is taken to avoid the need for detailed re-evaluation of the Rummanian to sicity studies in Tier 1 of the ecotoxicological assessment. The relevance of the endpoints for wild memmals may be reconsidered as a refinement option (step

⇒ Lowest relevant reproductive NOAEL: 50 ppm (2.30 mg/kg bw/do ("decreased bodyweight gain of pups and delayed eye opening it par atal toxic doses")

Step 6: "identify the appropriate crop and generic focal maximal species of the Appendix. ... Where there are more than one generic focal species in terms of timing etc., Her 1 visk assessments (and refined risk assessments, if necessary should be corried out for all the relevant generic focal species."

⇒ All relevant generic focal species scenagios arcincluded in Table 161.2-

Step 7: "for each relevant generic focal Species scenarios, calculate the daily dietary dose DDD = application rate x shortcut value xTWAXMAFon"

Table 10.1.2-6 with TER calculated for representative uses according to Table 12 of the EFSA GD (2009); MAF calculated according to App. H of FSA GD (2009) and with the

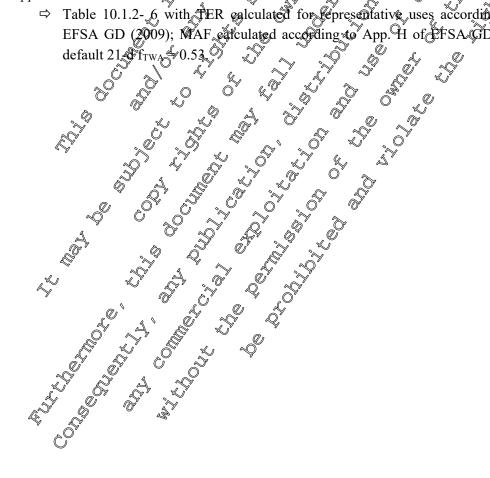


Table 10.1.2- 5: Relevant generic wild mammal focal species scenarios for Tier 1 risk assessment

Crop scenario	Most critical window of relevance for generic focal species scenario	Generic focal species	Representative species	Short cut values for reproductive RA baseCon RHDm
Orchard	BBCH 20-40	Small herbivorous mammal "vol&	Common vole	43.4
3x 75 g/ha BBCH 31-89	BBCH 20-40	Large herbivorous mammal "lagognorph"	Rabbit	<b>9</b> 58.6 5
10d int.	BBCH 20-40	Small omatvorous mammato mouse"	Wood mouse	4.9
Orchard	BBCH ≥ 40	Small herbivorous of maynmal Gole	Common Vole	21.7
3x 112.5 g/ha BBCH 55-87	BBCH ≥ 40	Large herbivorous manmal Dagomorph" '	Rabbit	
10d int.	BBCH ≥ 40	Small omniverous of mainsmal "reduse"	Wood mouse	2.3
	BBCH ≥ 20	Småll insertivorous Omammal "shrew" 🌣	Common shrew	
Strawberries 2x 150 g/ha	BBCH ≥ 40	Smathherbitorous Smathherbitorous Smathherbitorous	Common vole	28.9
BBCH 55-89 7d int.	BBCH ≥40 &	Carge herbivorous	Rabbit &	5.7
	BBČM ≥ 40	Small omnivorous manmal Gnouse	Woodmouse	3.1
	<b>B</b> CH 10 19	Small in ectivorous (mamañal "shrew" (	Common shipew	4.2
Strawberries 2x 125 g/ha	$\mathcal{F} BB(\mathcal{P}_1 \geq 4) \mathcal{F}$	Small herbicorous (5)	Common vole	28.9
BBCH 10-92 7d int.	\$BCH_10-39	& Carge herbivorous mamma "lagonsorph"	@Rabbit	14.3
	BBCH 10.39	Small omnivorous mammal mouse?	Wood mouse	7.8
Cranas	<b>ВВ</b> СНДО-19	Large herbivorous mamnal "lagornorph"	Brown hare	6.7
Grapes 3x 125 g/ha	BROW 10-00	anama shrew	Common shrew	4.2
BBCH 12-89 10d int.	ВВСН 90-19	Small herbivorous  Remmal Hole	Common vole	43.4
	BBCH 1009	Small omnivorous mamma "mouse"	Wood mouse	4.7

Step 8: "for each relevant generic focal species, calculate the toxicity exposure ratio and compare the TER to the respective rigger values?"

<sup>⇒</sup> If TER < 5 "refined assessment required for this generic focal species - go to step 9"

Table 10.1.2- 6: Tier 1 reproductive risk assessment for wild mammals

			DDD	)			NOAEL		
Compound / Crop	Generic focal species	Appl. rate [kg a.s./ha]	SV <sub>m</sub>	MAFm	ftwa	DDD	[mg ②i.s./kg > bw/d]	TER	Trigge
Trifloxystrobin									
Orchard 3x 75 g/ha BBCH 31-89 10d int.	Small herbivorous mammal "vole Large herbivorous mammal "lagomorph" Small omnivorous mammal "mouse"	0.075	43.4 8.65 20.7	1.75	0.59	0.60 0.33	2.3 2.3	0.87 3.8 7.05	
Orchard 3x 112.5 g/ha BBCH 55-87 10d int.	Small herbivorous mammal "vole Large herbivorous mammal "lagomorph" Small omnivorous mammal "mouse"	0.1725 ·	21.7	2 1.75 1.75	0.534	2.26 0.45 0.45		1.0	5 \$5 \$4
Strawberries 2x 150 g/ha BBCH 55-89 7d int.	Small insectivorous mammal "shrew? Small herbiyo@us	7 0 3 50 5 50 5 50	28.9	1.62	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	0.40		0.6 3.1 5.8	5
Strawberries 2x 125 g/ha BBCH 10-92 7d int.	Speal insectivorous	0.125	4.2 28.9 14.3 9.8	1.620	0.53C	0.45 3.09 1.53 0.83	2.3	5.1 0.7 1.5 2.8	5
Grapes 3x 125 g/ha BBCH 12 <sub>x</sub> 89 10d int.	Small herbivorous mammal vlagornorph" Small msectivorous mammal Shrew: Small herbivorous mammal "vole Small omnivorous	Q 125	6.7 4.2 43.4	1.75	0.53	0.78 0.49 5.03	2.3	3.0 4.7 0.5	5
2	mammal mouse		¥4.7			0.54		4.2	

The TER<sub>LT</sub> values calculated in the Vier 1 fevel reproductive risk assessment for wild mammals do not all reach the prioritacceptability trigger of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards, strawberries or grapes of 5 for the generic focal scenarios in orchards or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or grapes of 5 for the generic focal scenarios or g

Thus, the reproductive risk to wild mammals from the uses in orchards, strawberries and grapes has to be evaluated in a refined risk assessment, according to the guidance given in step 9 of that section in the EFSACD (2009).

#### **Step 9: Refinement options**

"Refined assessments should be carried out for all generic focal species that have a TER < 5 at Sep Re-examination of the relevance of mammalian toxicity endpoints for wild mammals. - Evaluate the 2generation (or if absent, extended 1-generation) rat study/studies in detail and determine for each study (or merged dataset, where it is appropriate to merge studies, see Section 2.4.3) The endpoints of that are considered relevant for reproductive performance as listed below:

- NOAEL for body weight change (included as an indicator of porental effects with potential disrupt reproduction), behavioural effects and systemic toxicitys
- NOAEL for indices of gestation, litter size, pur and litter weight (any effects in foctal body weight should be evaluated in the context of all perfinent data including other developmental effects as well as maternal toxicity)
- NOAEL for indices of viability, pre- and post-implantation la

- NOAEL for number aborting and refine delivering early NOAEL for systemic toxicity and effects on adult body weight NOAEL for indices of post-natul growth, indices objectation and data on physical landmarks NOAEL for survival and general joxicity up to sexual indurity.

Effects on other endpoints are insidered not relevant for reproductive performance and may be disregarded. disregarded.

Note that slight deless, e.g., I day in opaining a particular endpoint or developmental milestone can be ignored. However, longer delays could be considered as adverse effect. This is based on the frequency of measuring and hence is a Graginatic approach. Note that a 1-d delay may be of importance for certain substances. It should be checked that this is not treatment related before discounting it. Further discussion of the ecological relevance of test endpoints for wild mammals may be found in Appendix and EFSA (2006). \$\sqrt{2}\$

Examination of additional mammalion toxicity studies. The Tier 1 assessment concentrates on endpoints from the Zeneration ref study and the developmental study. In refined assessments it is desirable also to examine other manipalian foxicity studies to check whether they contain lower NOAEL Sor relevant enapoing. The lowest elevant NOAEL should be used for assessment.

Re-assessment of the exposure period relevant to the toxicity endpoints. – The screening and Tier 1 assessments us@time-weighted averages over 21 days, except where there is specific evidence that the effects could be caused by Fiort-term exposures. The default periods of 21 days for long-term effects and I day for short-term effects are arbitrary choices without specific scientific justification. In refined assessments the evidence for the exposure period relevant to each endpoint should be reviewed in more detail in consultation with a mammalian toxicologist. See Appendix J for more information."

Since there is a need for refinement highlighted in the Tier 1 risk assessment, the guidance given at step 9 for refined endpoint selection has been applied to the specific case of trifloxystrobin. The evaluation is provided in by Hartmann, Ebeling & Diesing (2013 MCA section CA 8.1.2.2/01),

concluding with the proposal to employ the  $BMD_5 = 38.3$  mg/kg bw/d as the reproductive risk assessment endpoint in the  $TER_{LT}$  calculation.

Table 10.1.2-1: Refined reproductive risk assessment for wild mammals

	<u>-</u>	ı				· @	Ž	· *	
Compound /		Appl. rate	DDD	) 		4	NOAEL [mg 🛼		
Crop	Generic focal species	Appl. rate [kg	SVm	MAF <sub>m</sub>	ftwa	PPD	a.s./kg	TERLT	Trigger
<b>P</b>		a.s./ha]	~ ' ' ' ' '	~		W"	bw/d		4 N
Trifloxystrobin						<b>V</b>	× .	Ž į	
	Small herbivorous		1000		Q,	3.02°		12.7	4
Orchard	mammal "vole				/ %	<b>9</b> ,02		127	
3x 75 g/ha	Large herbivorous	0.075	8.6	1.79	0.53	0.60	€8.3	64.0	Ų" <sub>5</sub>
BBCH 31-89	mammal "lagomorph"		- <del>V</del>			20	O L	1	e °
10d int.	Small omnivorous mammal "mouse"		<b>%</b> 7 ×	Ø .	Q ,	0.33	, O'	1177	W.
_	Small herbivorous				-	<b>\</b>	<b>*</b>		
Orchard	mammal "vole	\$ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	21.7		Κ)°	2.26		₹16.9 Ô	25.
3x 112.5 g/ha	Large herbivorous		4.3		~~				
BBCH 55-87			4.3	1.75	0.53	<b>9</b> .45 Ĉ	385	8 <b>5</b> Å	5
10d int.	Small omnivorous	0.1123 4 6	2.8			0.20	8 %	159.6	
	mammai moyise	7 ~	2.45	4	. Ö	0.24 🗞		139.0	
	Small insectivorous			<b>b</b>		n 15 ∞	b &	253.6	
	mammal@shrew®					0.15		233.0	
Strawberries	Small herbivorous		2 <b>8</b> .		<b>L</b>	3.71	8	10.3	
2x 150 g/ha BBCH 55-89	manimal Sole S	0450	S.	(1.62 <sup>©</sup>	٥.53 وا		38.3		5
7d int.	manmal agomorph"		<sup>ال</sup> 5.7 الم	* _@	۰,۳	0.73		52.3	
, a mi.	Small omnivorous &			- Ş	WY .	0.40			
	manimal "mouse"	/ (, © /	37 ·			0.40		96.2	
	Small insectivorous	4 %	4.2 Ô	7 0	<b>X</b> )	0.45		85.2	
	mammal "shrew"				~ O	0.43		83.2	
Strawberries	Small herbivorous		28.9		$\mathbb{O}_{\mathbb{A}}$	3.09		12.4	
2x 123 g/ha	inammal vole	00125 4	Y 4	1.62	0.53	3.07	38.3	12.1	5
BBCH 10-92 7d int.	Farge herbivorous		14.3 °		*****	1.53		25.0	
/d int.	mmmal "lagons rph" Small omnis rous								
	manmal mouse"	Q° ,	9.8	1.Ox		0.83		45.9	
4	Large herbivorous	Q 2							
	mammat "lagora orph"		6.7			0.78		49.3	
Grapes	Small insectivorous					0.40		70.7	
3 <b>x 42</b> 5 g/ha	rnammal shrew	@" \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	¥4.2	1.75	0.53	0.49	38.3	78.7	5
BBCH 12-89	Small Korbivorous	Q.125	43.4	1./3	0.55	5.03	30.3	7.6	
10d int.	🕖 🌣 mammal "🎺 le 🤍		-⊤J. <b>-T</b>			5.05		7.0	
	Small omnworous	<i>Ø1</i>	4.7			0.54		70.3	
	mamma mouse"	~Õ							

The refined TERL values exceed the a-priori acceptability trigger of 5 for long-term exposure. Accordingly, a safe use of the product in all relevant crops can be concluded.

Table 10.1.2- 2: Uncertainty analysis for the refined reproductive risk assessment for wild mammals

mamm				, <b>(</b> )
Source of uncertainty	Potential to make true risk lower	Explanation	Potential to make true risk higher	Explanation (
Use of the <u>BMD<sub>5</sub></u> for 21-d pup weight as reproduction toxicity endpoint	-	BMD <sub>5</sub> (= EC5%) for 21-d pup weight is a consciousitive benchmark selection for ecotoxicological assessment (usually EQ > 10% are considered as acceptable NOAE surrogates for ecotoxicological assessments).		Explanation (
Remainder of the factors in the refined risk assessment: unchanged default Tier 1 values/approaches (therefore no difference to overall evaluation on conservatism in mammalian reproductive risk assessment as provided in the EFSA GD (2009), App. C, Tab. 8	"There are un variation in the experience of protection go diversity, due time, and the	NOAEL surrogates for ecottoxicologo al assessments).  A pricertainites in both directions. Becausicity between species, some of the content of the assessment procediffer is not all of preventing long-term repersussing to variation in exposure between indicated and the content of the content	se of the potentials in sensitive ally by edching of the potentials and one of the potentials and one of the potentials and in the potentials and in the potentials and in the potentials are the potential	he surrogate he denual we and er space and

#### Long-term risk assessment for mammals drinking contaminated water

The puddle scenario is relevant for the long-term risk assessment.

Table 10.1.2-3: Evaluation of potential concern for exposure of mammal drinking water

Crop	K	Application rate * MAF [g a.s./ha]	` /	Ratio (Application rate* (AF) / NO(A)(5)	"Escape clause" C No concern if ratio	Conclusion
Trifloxystrobin			L	, ,		
Strawberries	2377	150 × 1.6	38.3	24.9 00	\$3000 <sub>x</sub>	No concern

# RISK ASSESSMENT OF SECONDARY POISONING

The risk assessment of secondary poisoning for wife manifolds is performed following the principles developed in the secondary poisoning risk assessment for the metabolites under assessment (CGA 357261, CGA 357262, CGA 357276 and NOA 409480). This approach is considered appropriate since the available data suggest in fact lower toxicity of the metabolites than the parent. Furthermore, there are additional margins of safety that can account for any remaining uncertainty.

Table 10.1.2- 4: Mammalian generic focal species for the Tier risk assessment of secondary poisoning

Generic focal spe	cies 4	Body weight (g)	FIR [g]	FIR/bw
Earthworin eater			©12.8	1.28
Fish eater	.0 .5	3000	Ď V 429 ′	0.142

Long-term DDD and TER calculation for earth ormeating mammals

Table 10.1,2-5: Tier 1 tong-term DDD and FER calculation for earthworm eating mammals (trifloxystrebin)

	Orchards	Grapes	Strawberries
Trifloxystrobin	, w		
PECworm [mg/kg(x))	0.04	0.06	0.10
FIR/bw	1.28	1.28	1.28
DDD [mg@/s./kg@w/d]	0.05	0.07	0.12
NO(A) See [mg/ss./kg/sw/d]	38.3	38.3	38.3
TERN O O	739	528	308
Trigger	5	5	5

a) calculation of PEC<sub>worm</sub> see Table 10.1.1-11

Table 10.1.2- 6: Tier 1 long-term DDD and TER calculation for earthworm eating mammals (metabolites)

			6. 💖
	CGA 357261	CGA 357276	NOA 409480
PEC <sub>worm</sub> [mg/kg] <sup>a)</sup>	0.22	0.01	0.06
FIR/bw	1.28	1.28	\$1.28\$\times'
DDD [mg/kg bw/d]	0.28	0.02	0.0L ×
NO(A)EL [mg/kg bw/d] b)	38.3	38,20	\$\int_{\text{28}}\text{.3}  \text{\text{\$\int_{\text{\text{\$\int_{\text{\text{\$\int_{\text{\text{\$\int_{\tiny{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\tiny{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\indth}}}}}}}}}}}}}} \engintermintensum \text{\$\inttitum_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\indth}}\}}}}}}}}}}}} \endotyne{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\tiny{\$\int_{\text{\$\int_{\tiny{\$\int_{\text{\$\int_{\tiny{\$\int_{\tiny{\$\int_{\text{\$\int_{\text{\$\int_{\text{\$\int_{\tiny{\$\int_{\text{\$\int_{\text{\$\int_{\tiny{\$\int_{\tiny{\$\int_{\tiny{\$\intity}}}}}}}}}}}}}}}} \enginentineq \text{\$\inttent{\$\inttitum_{\tiny{\$\inttitul{\int}{\inttitut{\$\inttitul{\$\inttitul{{\intity}}}}}}}}}}}}}} \endotinintensition \end{\text{\$\inttitum_{\text{\$\inttitum_{\inttitut{\$\inttitut{\$\intity}}}}}}}}}} \endotintensime\text{\$\inttitut{\$\intity}}}}}}}}}}}}} \enginentineq \text{\$
TER <sub>LT</sub>	138	2030	527 \$
Trigger	5	Q 5 ·	

a) calculation of PEC<sub>worm</sub> see Table 10.1.1-12

Long-term toxicity exposure ratio for fish-eating manimals

Table 10.1.2-7: Tier 1 long-term ODD and TER calculation for fish eating mammals

Q	Orchards 8	Grappes C	Strawberries
Trifloxystrobin			
PEC <sub>fish</sub> [mg/kg] a)	7 20.108 L	\$\times_0.0\times_0\times_0	0.025
FIR/bw Q	0.142	0,142	0.142
DDD [mg a.s./kg bw/d]	6 02 V	0.01	0.004
NO(A)EL [mg a.s./kg bw/d]	38.3		38.3
NO(A)EL [mg a.s./kg kg/d]	2500 °°	* #407 @	10679
Trigger & & &	√5 √ 1	Z 5Z	5

a) calculation of PEC<sub>fish</sub> see Table 10.1.013

No specific secondary personing risk assessment is performed for the metabolites under assessment (CGA \$57261, CGA 357262, CGA 357276. and NOA 409480). This approach is considered appropriate since the available data suggest lower toxicity of the metabolites than the parent. The large additional margins of safety in the calculation on the parent can account for any remaining uncertainty.

#### CP 10.1.2.1 Acute or al toxicity to mammals

No new studies were required

# CP 10.1.2.2 Pligher tier data on macomals

In view of the results presented above, possible further studies were necessary.

# CP 10.1.3 Effects on other terrestrial vertebrate wildlife (reptiles and amphibians)

Please refer to Point 8.2 % of the MCA.

b) endpoint of parent used in estimation

#### **CP 10.2** Effects on aquatic organisms

The risk assessment is based on the current Guidance Document on Aquatic Ecotoxic Togy, SANCO/3268/2001, rev 4 final, 17 October 2002. Some implications of the new Aquatic Condance Document (EFSA Journal 2013, 11(7):3290, 268 pp. doi:10.2903/j.efsa.2013.3290), which is not set notified, have been taken into consideration as well. 

## Ecotoxicological endpoints used in risk assessment

**Table 10.2-1:** Endpoints used in risk assessment

Test substance	Test species	(a)	Endpoint Q	Reference
	Eigh gayta			Loes
	Fish, acute,	LC <sub>50</sub>	0.036 mg product/L	M-030572-01-1
	Oncorhynchus mykiss		9.036 mg product/L	<b>Æ</b> CP 10. ₹ 1/06° °
	F: 1 1 : 2	, 0° _ 0	3 x 0.0495 mg product/L	CLoEP OF
	Fish, chronic	NOEC~	©rresponding to 3 x	M-056670-07-1
	Oncorhynchus mykts	y"@"	₩.0253@ng a.s./L)	<b>K</b> € 10.25 02
	Invertebrate soute	ACSO CONTRACTOR OF THE CONTRAC		<b>W</b> ŏEP _
	Invertebrate, acute	EC%	0.0103 mg product L	M-051,484-01-1
Trifloxystrobin	Daphnia magna			KĈ₱∕10.2.1/04
WG 50				<b>K</b> oEP
	Invertebrate, acute	EC <sub>50</sub>	V 0.01 Mmg naduct/I	©M-048117-01-1
	Invertebrate, aë yte  Daphria magna	EC <sub>50</sub>	0.014 mg pagadeur	KCP 10.2.1/01
	Invertebrate, chronic	Ç 4.		LoEP
	Invertebrate, chronic	NOE	0.01d mg product/L	M-031771-01-1
	Daphord magiga O		y ording product 200	KCP 10.2.3/03
	Algae, growth whibition	E <sub>b</sub> C <sub>50</sub>	@015 mg mg dugt/I	LoEP
	🍣 PseudokirchnerieUd 🧸	E <sub>b</sub> C <sub>50</sub>	©015 mg product/L 0.15 mg product/L	M-051263-01-1
		ErC56	50.13 tag product/L	KCP 10.2.1/03
	Fish, acute	& 8		LoEP
	Oncorhynchas mykiss	$\mathcal{C}_{50}$	0.915 mg/a.s./L	M-032048-01-1
	Supplies the supplies of the s	) "O"		KCA 8.2.1/01
	Fisto chronic		0 2077 mg a s /I	LoEP
	On contain chief multipe	NBEC	0,0077 mg a.s./L	M-032080-02-1
	## Fist Chronic Oncor Pynchits mykis			KCA 8.2.2.2/01
			<b>*</b>	LoEP
	Invertektrate, aquie	EC	> 0.016 mg a.s./L	M-032085-01-1
		~~		KCA 8.2.4.1/02
	Invertebrate, chronic	NORC		LoEP
	Daphoja magna	NQ≰C	0.00276 mg a.s./L	M-032097-01-1
	**Bupmuu mugnu	~0~		KCA 8.2.5.1/01
Triffoxystrobin	Chiconomid Chronic			LoEP
Y -		NOEC	0.200 mg a.s./L	M-033988-01-1
01	Charonomus repairus			KCA 8.2.5.3/01
	Algae growth hehibition	E <sub>b</sub> C <sub>50</sub>	0.0053 mg a.s./L	LoEP
	Desmodesmus subspicutus	$E_{r}C_{50}$	0.0055 fing a.s./L 0.016 mg a.s./L	M-032098-01-1
4	Desmodesmus suospiculus	LrC50	0.010 mg a.s./L	KCA 8.2.6.1/01
	Aquatic Plants, growth  Semna gibba			LoEP
	Romna gihha	EC <sub>50 (frond nu</sub>	$_{\text{mber})}$ > 1.93 mg a.s./L	M-032662-01-1
	S S S S S S S S S S S S S S S S S S S			KCA 8.2.7/01
		NOEAEC	4 x 0.0120 mg a.s./L	
	Lentic freshwater			LoEP
	,	NOEC	4 x 0.0037 mg a.s./L	M-067201-01-1
	(WG 50)			KCA 8.2.8/09
		LOEC	4 x 0.0067 mg a.s./L	

Fish, acute	Test substance	Test species	Endpoint	Reference
Fish, acute		-		<u> </u>
CGA 321113   Fish, chronic   Daphnia magna   ECso   > 100 mg p.m./L   LoEP   M-032091-01-01-01-01-01-01-01-01-01-01-01-01-01			$IC_{50} > 106 \text{ mg n m/I}$	~ ~
Fish, chronic   Oncorhynchus mykiss   NOEC   ≥ 100 mg p.m./L   CoEP / M.070819-0/1		Oncorhynchus mykiss	100 mg p.m./L	
CGA 321113   Invertebrate, acute			<del></del>	
CGA 321113   Invertebrate, acute		Fish, chronic	NOEC > 100	LOEP
Invertebrate, acute			NOEC $\geq 100 \text{ mg p.m./L}^{30}$	
CGA 321113   Invertebrate, acute				K (3 8.2.2 9) 0
Daphnia magna		Invertebrate acute		
CGA 321113			$EC_{50} > 100 \text{ mg pg/n./L}$	
Invertebrate, chronic   Daphnia magna   NOB   3.2 mg.p.m.	CGA 321113	Вирини тидни		KCA 8.2.4, 1,05
Daphnia magna	CGA 321113	Invertabrata abrania		Logp O
Chironomid, chronic   Chironomus riparius   Chironomus riparius riparius   Chironomus riparius riparius   Chironomus riparius riparius   Chironomus riparius riparius ripariu		*	NO♠¢ 3.2 mg/p.m./J.°	M-0566 9-01-
Algae, growth inhibition   Pseudokirchneriella   Subcapitata   Pseudokirchneriella   Subcapitata   Pseudokirchneriella   Pseudokir		Вирпни тидни		OKCA 86, 2.5.1/802"
Algae, growth inhibition   Pseudokirchneriella   Subcapitata   Pseudokirchneriella   Subcapitata   Pseudokirchneriella   Pseudokir		Cl.:		Logi
Algae, growth inhibition Pseudokirchmeriella, subcapitata  Fish, acute Oncorhynchus mykis  CGA 357262  Invertebrate acute Daphnia magna  Algae, growth inhibition Redudokir hneriella subcapitata  Fish, acute Oncorhynchus mykis  CGA 357261  CGA 357261  Invertebrate acute Daphnia magna  Algae, growth inhibition Redudokir hneriella subcapitata  Fish, acute Oncorhynchus mykiss  CGA 357261  CGA 357261  Invertebrate acute Daphnia magna  LCS0  LCS0  Algae, growth inhibition Redudokir hneriella subcapitata  Fish, acute Oncorhynchus mykiss  CGA 357261  Invertebrate, acute Daphnia magna  LCS0  LCS0  LOS0  M-032074-01-1 KCA 8.2.4.1/04  LOEP  M-032090-01-1 KCA 8.2.4.1/04  LOEP  M-032109-01-1 KCA 8.2.6.1/03  LOEP  M-032078-01-1 KCA 8.2.6.1/03  LOEP  M-032078-01-1 KCA 8.2.6.1/03			NOE 25 mg/p.m./L	M-033991-01-1
Algae, growth inhibition   Pseudokirchneriells   Subcapitata   Pseudokirchneriells   Subcapitata   Pseudokirchneriells   Pseudoki		Cnironomus riparius		<b>KCA 8.2</b> 5.3/02.°
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Algae, growth inhibition		LoEP®
Subcapitata			$E_8^*C_{50}$ $00 \text{ mg} \text{ s.m./L}$	M-032651407-1
CGA 357262   Fish, acute			YErC <sub>50</sub> \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Fish, acide   Oncorhynchus mykles   IC50   I0.1 mgp.m./L   FEFTEL017   M-430569-01-1   KcA 8.2.1/22   Invertebrate acute   Daphnia magna   EC50   3.6 mg p.m./L   EBTFL019   M-431690-01-1   KCA 8.2.4.1/16   EbC50   2.65 mg p.m./L   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11   EbC50   2.65 mg p.m./L   EbC50   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11   LoEP   M-032074-01-1   KCA 8.2.1/13   LoEP   M-032090-01-1   KCA 8.2.4.1/04   EbC50   I.4 mg p.m./L   LoEP   M-032109-01-1   KCA 8.2.4.1/04   EbC50   I.4 mg p.m./L   LoEP   M-032109-01-1   KCA 8.2.6.1/03   LoEP   M-032078-01-1   KCA 8.2.6.1/03   LoEP   M-032078-01-1   KCA 8.2.1/15   L				~ 7
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Fish, acus		40
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			$LC_{50}$ $\mathcal{P}$ 0.1 mgp.m./ $\mathcal{P}$	
CGA 357262   Invertebrate acute   Daphnia magna   EC <sub>50</sub>   3'6 mg p·m./L   EBTFL019   M-431690-01-1   KCA 8.2.4.1/16   (2012)   EBTFL018   M-431690-01-1   KCA 8.2.4.1/16   (2012)   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11   KCA 8.2.6.1/11   LoEP   M-032074-01-1   KCA 8.2.1/13   LoEP   M-032090-01-1   KCA 8.2.4.1/04   LoEP   M-032090-01-1   KCA 8.2.4.1/04   LoEP   M-032090-01-1   KCA 8.2.6.1/03   LoEP   M-032074-01-1   KCA 8.2.6.1/03   LoEP   M-032078-01-1   KCA 8.2.6.1/03   LoEP   M-032078-01-1   KCA 8.2.1/15				
CGA 357262   Invertebrate active   Daphnia magna   EC50   3.6 mg p.m./L   EBTFL019   M-431690-01-1   KCA 8.2.4.1/16   (2012)   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11   LoEP   M-032074-01-1   KCA 8.2.1/13   LoEP   M-032090-01-1   KCA 8.2.4.1/04   LoEP   M-032090-01-1   KCA 8.2.4.1/05   LoEP   M-032078-01-1   KCA 8.2.1/15   LoEP   M-032078-01-1				(C)
CGA 357262   Invertebrate active   Daphnia magna   EC50   3.6 mg p.m./L   EBTFL019   M-431690-01-1   KCA 8.2.4.1/16   (2012)   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11   LoEP   M-032074-01-1   KCA 8.2.1/13   LoEP   M-032090-01-1   KCA 8.2.4.1/04   LoEP   M-032090-01-1   KCA 8.2.4.1/05   LoEP   M-032078-01-1   KCA 8.2.1/15   LoEP   M-032078-01-1				(2012)
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 257262	Invertebrate acute	OFC 2% mother /I	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 557202	Daphn <u>ia</u> magna 🛴	ALC20 & S.O HB.A.H., L.A.	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				
Algae growth inhibition   Redudokir chneriella   Subcapitata   EbC50   22.65 mg p.m./L   EBTFL018   M-429959-01-1   KCA 8.2.6.1/11				
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Algae growth inhibition	E C 0 (2) 65 from M	`
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	٨	Rseudokirchneriella		
Fish, acute Oncorhydrhus mykiss $LC_{50}$ $0.9$ mg p.m./L $CGA$ 357261 $LC_{50}$ $LC_$	ر م	Subcapitata "O"	Ereso >2.00 mg pagr./L	
CGA 357261   CGA 357261   CGA 357261   Invertebrate acute   Daphnia magna   CCS   CSS	Ŏ*		<del>. 4</del>	
CGA 357261 Invertebrate acute Daphnic magna $EC_{50}$ 1.4 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$	Ď	Fish, acute 🗐 🧳		
CGA 357261 Invertebrate acute Daphnia magna $EC_{50}$ 1.4 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$ 1.5 mg p.m./L $EC_{50}$		Omcorhyazhus makiss	20.9 mgp.m./L	
CGA 357261   Invertebrate acute   EC <sub>50</sub>   f.4 mg p.m./L   M-032090-01-1   KCA 8.2.4.1/04   LoEP   M-032109-01-1   KCA 8.2.6.1/03   EC <sub>50</sub>   1.4 mg p.m./L   LoEP   M-032109-01-1   KCA 8.2.6.1/03   LoEP   M-032078-01-1   KCA 8.2.1/15   LoEP   M-032078-01-1   M-032078-		<u> </u>	<u> </u>	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	, , , , , , , , , , , , , , , , , , ,	Invertebrate acute		
Agae, growth inhibition   E/C <sub>50</sub>   1.4 mg p.m./L   LoEP   M-032109-01-1   KCA 8.2.6.1/03	CGA 35/261		1.4 mg p.m./L	
Fish acute $1.650$ $\geq 200$ mg p.m./L $\frac{\text{KCA 8.2.6.1/03}}{\text{KCA 8.2.6.1/15}}$				
Fish acute $1.650$ $\geq 200$ mg p.m./L $\frac{\text{KCA 8.2.6.1/03}}{\text{KCA 8.2.6.1/15}}$	_@	Agae, growth in hibition	$E_{50}^{\nu}$ 1.4 mg p.m./L	
Fish acute $1.650$ $\geq 200$ mg p.m./L $\frac{\text{KCA 8.2.6.1/03}}{\text{KCA 8.2.6.1/15}}$	~Q <sup>-</sup>	Desmodesmus sabsnicatus	E <sub>r</sub> C <sub>50</sub> 2.0 mg p.m./L	
KCA 8.2.1/15	_1_		7 7	
KCA 8.2.1/15	Ø"	Fis <b>©</b> acute		
KCA 8.2.1/15	. ~~	*Concorhynchus mykiss	$\geq 200 \text{ mg p.m./L}$	
CGA 373466    Invertebrate, acute   EC <sub>50</sub>   >100 mg p.m./L   LoEP   M-032092-01-1   KCA 8.2.4.1/06     Algae growth inhibition   E <sub>5</sub> C <sub>50</sub>   > 100 mg p.m./L > 100   LoEP			<del>"</del>	
CGA 373466 Daphria magna EC <sub>50</sub> >100 mg p.m./L M-032092-01-1 KCA 8.2.4.1/06  Algae growth inhib@on E <sub>b</sub> C <sub>50</sub> > 100 mg p.m./L > 100  LoEP	- ¥	Invertebate acute		
KCA 8.2.4.1/06  Algae growth inhibition E <sub>b</sub> C <sub>50</sub> > 100 mg n.m./L > 100  LoEP	CGA 373466	Danhaja maona	$EC_{50}$ >100 mg p.m./L	
Algae growth inhibition   EhC50 > 100 mg n.m./L > 100   LoEP		Dupynu magnu 2		
I I I W MEGON ELLYWALL HILLDRAWILL I DACAH / LUU HIS D.HI./L/ LUU I =		& Algan growth inhibition	$F_{\rm h}C_{\rm so}$ > 100 mg n m /I > 100	
Desirodes must subspicatus  ErC50  mg p.m./L  M-032653-01-1  VCA 8 2 6 1/05		Desimple subspicatus		M-032653-01-1
$E_r$ C <sub>50</sub> $E_r$ E <sub>7</sub> $E_r$ E	~~ ~ @	· Desirouesings subspiculus	LrC50 mg p.m./L	KCA 8.2.6.1/05
LoEP		Fish courts		LoEP
Fish, acute $Onorhynchus mykiss$ $C_{50} > 100 \text{ mg p.m./L}$ $C_{50} > 100 \text{ mg p.m./L}$		On Thun thus multiss	$LC_{50}$ > 100 mg p.m./L	M-033964-01-1
KCA 8.2.1/17		One of hynchus mykiss		KCA 8.2.1/17
NOA Q 3161 LoEP	NOA≈¶3161			LoEP
Invertebrate, acute FC: \$100 mg n m /I M-033972-01-1		Invertebrate, acute	EC > 100 mg /I	M-033972-01-1
Daphnia magna $  EC_{50} > 100 \text{ mg p.m./L}$ $  KCA 8.2.4.1/08  $		Daphnia magna	≥ 100 mg p.m./L	

Test substance	Test species	Endpoint	Reference
	Algae, growth inhibition	$E_bC_{50}$ > 100 mg p.m./L	LoEP &
	Pseudokirchneriella	$E_bC_{50}$ > 100 mg p.m./L $E_rC_{50}$ > 100 mg p.m./L	M-033979-01-1
	subcapitata	L <sub>r</sub> C <sub>50</sub> > 100 mg p.m./L	KCA 8.2601 /07
	Fish, acute		LoEP
	Oncorhynchus mykiss	$LC_{50}$ > 100 mg p.m./L	M-033967-0171
			KG 8.2.148
	Invertebrate, acute		L&EP ~
NOA 413163	Daphnia magna	EC <sub>50</sub> > 100 mg pon./L	M-033975-010
			KCA 8.2.4 199
	Algae, growth inhibition Pseudokirchneriella	$E_bC_s$ $> 100$ mg p.m./L $> 100$ mg p.m./L $> 100$ mg p.m./L	M-033983-01-1
	r seudokirchneriend subcapitata	$E_{\rm r}$ $> 100  {\rm mg  p.m./L}$	OKCA & 2.6.1/08
	suocapitata		Riebschläger
	<u> </u>		(2012)
	Invertebrate, acute	ECS 514 9 p.m 0	ARTEX 05
	Daphnia magna 🆼		M-438856-0121
CGA 357276			KÇA 8.2.4 17
100,210			$(2 \bigcirc 2)$
	Algae, growth inhibition	E <sub>b</sub> C <sub>0</sub>	ØBTFX196
	Pseudokirchneriella	E <sub>1</sub> C <sub>50</sub> > 5.88 mg p.m./L	M-484282-01-1
	subcapitata		KČA 8.2.6.1/12
	Fish acute y		ÉøEP
	Oncorhynchule mykiss	LC <sub>50</sub> 13,6 mg p.m2/L	M-032079-01-1
	Oncornynchus prykiss		KCA 8.2.1/16
	Invertebrate, acute		LoEP
CGA 107170	Daplmia magna	EG 22.7(mg p.m./L )	M-032096-01-1
			KCA 8.2.4.1/07
	Algac growth hhibition	E <sub>b</sub> C <sub>50</sub>	LoEP
څ	Desmodesmus subspicatus	E <sub>r</sub> C <sub>60</sub> 542.2 <b>10</b> g p.m. 1	M-032659-01-1
			KCA 8.2.6.1/06
			(2012)
, Q	Invertebrate, acute	EC <sub>50</sub>	EBTFX201
	Daphyon magner		M-432300-01-1
NOA 409480			KCA 8.2.4.1/18
	Algae, growth inhibition		(2013)
Ó	Algae, growth inhibition	5 00	EBTFL032
(A)	Algae, grown inhibition  Pseudokirchner alla  subcapitata	E <sub>r</sub> C <sub>0</sub> > 5.88 mg p.m./L	M-467271-01-1
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Sweathard &		KCA 8.2.6.1/13
4	0, 0, 4,	9.9 mg p.m./L	(2012)
Ø"	onvertebrate, acute	9.9 mg p.m./L	EBTFX197
2-	Invertebrate, acute  Daphnia magna	7.5 mg p.m./L	M-442300-01-1
Hydroxymethyl			KCA 8.2.4.1/19
benzonitrile	Algae, growth inhibition		(2012)
	Pseud Wirchn Fiella	E <sub>b</sub> C <sub>50</sub> 10.99 mg p.m./L	EBTFL008
Ő	Sibcapitata V	$E_rC_{50}$ 33.2 mg p.m./L	M-441244-01-1
			KCA 8.2.6.1/14
~~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~	Algae, growth inhibition  Pseudakirchneviella  Bibcapitata		
	A 29		
, Š	F Z		
	5 By		
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#### Predicted environmental concentrations used in risk assessment

Table 10.2-2: Initial max PEC<sub>sw</sub> values – FOCUS Step 1, 2

			-	· 		<u> </u>
Compound	FOCUS	Orchards,	Orchards,	Grapes	Strawberries,	
	Scenario	early	late	220	early	
		PECsw, max	PECsw, max	PECsw, max	PECsw, max	PECommax
	~==== 1	[μg/L]	[µg/L]	[μg/L] 🗸	[μg/L]	) [μ <b>g</b> /L] <
TD : Cl	STEP 1	9.927	14.89	13.34	11.14 1.150	13:37 37 3980 4
Trifloxystrobin	STEP 2 - North	3.931	5.897	3.345	1.150	- MOOOO ~ ~
	STEP 1	3.931	5.897	3.345	1.139	Q1.3800 S
OCA 257261	STEP 1	12.21	18 <b>4</b> 2 5963	15.40° ° ° 3.524 ° ° °	8.043	9.609
CGA 357261	STEP 2 - North STEP 2 - South	3.376 3.376	~(/	3,524 0° 0°.524,79	0.886 O'	16964 (V) 44.064 (V)
			W-0	1		
OC 4 2572(2	STEP 1	1.191	1.78 <b>%</b> © 1.243	1.014	0.232	0.279
CGA 357262	STEP 2 - North	0.828	1,243 3,243	0,865 °C	0.205	0.246 ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °
	STEP 1		/ A. V		√37.71 ×	
CC 4 221112	STEP 1	43.33	,64.99, 1 12,#0	62.92 7 12. <b>43</b>	6.500	45.25 5.89\$
CGA 321113	STEP 2 - North	1017	A 30 (1)	12.43	1.527	
	STEP 1	/ALA 4// II		1766		9. <b>2</b> 09 27.73
CC 4 272466		Q4.06	36.09	\$6.87 \$5.25€ €	23.11	
CGA 373466	STEP 2 - North, STEP 2 - South	4.103 0 5.684	4.98 <b>\$</b> 0		73.2470 (v 5.865 0	2.849
	STEP 2 - SQUIII	4,420		7.857 7.367	3.803 () 4.9911 &	4.944
NOA 413161	STEP 1 STEP 2 - North	0.417	630 % 0.313	0.695 A	30.645V	5.894 0.516
NOA 413101	STEP 2 - South	0.834	0.626	1.391	1.29	1.033
	STEP 1	4.636	6.954	7027	5 151	6.182
NOA 413163	STEP 2 North	\$30 \$0.435	<b>3</b> 26	0.725	0.675	0.182
NOA 413103	STEP 2 South	0.870	0.6539 Q		1.350	1.080
	STEP 1 STEP 1	10069	1.604	1.002	0.312	0.374
CGA 35727	STEP 2 - North	Q319 &	478	0.289 <sub>@.</sub>	0.093	0.374
CGA 3372709	SPEP 2 - South		0.478	0.289	0.093	0.112
	STEP 1	2.924	4.386	2.48	0.570	0.684
CGA 207170	STEP 2 - North	2.033	3050	2.023	0.503	0.603
COACIO/1/0	STEP 2 - South	2.033 ° ×	<u>,3</u> €050 € ,	2.123	0.503	0.603
	STEP 1	¥1.31/3× @	<del>♥                                    </del>	2.188	1.459	1.750
NOA 409480	STEP 2 - North	0 120	7 1.9690 0. <b>09</b> 1	0.203	0.190	0.152
NOA 409480	STEP 2 - South	0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × = 0,40±2 × =	0.091	0.406	0.379	0.304
<del></del>	STEP	<u> </u>	6.1120°	6.792	4.528	5.433
CGA 384318	STEP 2 - North	0.30	0.23	0.792	0.522	0.418
COA 3613/16	STEP 2 - Notas	0.616	0.201	1.027	1.044	0.836
	STEPA	9.773 @	1.160	0.658	0.151	0.830
2-Hydroxylmethyl	STEP 2 North		70.807	0.638	0.131	0.181
benzonitrile	STEP 2 - South		0.807	0.561	0.133	0.159
POLD volvoslos	SIEP 2 - SOMM	0.538	0.007	0.301	0.133	0.139

BOLD – values considered in Osk assessment

**Table 10.2-3:** Initial max PEC<sub>sw</sub> values – FOCUS Step 3

Compound	FOCUS Scenario	Orchards, early		
		PECsw, max	Orchards, late PECsw, max	Grapes PECsw, no.
		ΓΕCsw, max [μg/L]	FECsw, max [μg/L]	
_	D3 (ditch)	2.740	[μg/L] 4.115	PECsw, ngs,
	D3 (diteil) D4 (pond)	0.123		- 7
	- 4			
	D5 (pond)	0.123	0.185	
	D5 (polid)	0.123		
Trifloxystrobin	D6 (ditch)	2.311	4.077	2.092
Timoxysucom	R1 (nond)	0.123	0 1/205	2.09D 0.076
	R1 (stream)	2.095	0.183 4.079 0.185 3.108	\Q555 \& \Q
	R2 (stream)	2.776	@#.170.**\	2.092 0.076 0.555 2.062 2.200
_	R3 (stream)	2.964	4.446	2.200
_	R4 (stream)	2.108	3.461	1.555 A.
OLD – values co	nsidered in risk assess	sment &		
		2.565 0.123 2.511		2.062 2.200 1.555 7

Table 10.2-4: Initial max PEC<sub>sw</sub> values – FOCUS Step 4

Compound	FOCUS Scenario	Orchards, earl	y	Orchards, lat	
		PECsw, max		PECsw, max	6
		[µg/L]		<u> [μg/L]</u>	Ũ"
	50	% drift reduction	<u> </u>	~	~ (
	D3 (ditch)	1.370	23	2.058	
	D4 (pond)	0.062		0.092	<i>Q</i>
	D4 (stream)	1.283	<u> </u>	1.990	<u>, (</u>
	D5 (pond)	0.062	Q	0.092	
Trifloxystrobin	D5 (stream)	1,255	X .	₹.039 Q	
Timonysucom	R1 (pond)	△0.062 <sup>4</sup>	9 6 5	§ 0.092	<u> </u>
	R1 (stream)	1.048		1.554 6	
	R2 (stream)	1,388		2.985	N.
	R3 (stream)	482		2.223	4
	R4 (stream)	1.0540		1.586	, y . ((
	<u> </u>	m buffer zone		<u> </u>	
	D3 (ditch)	10849 49 49 49 49 49 49 49 49 49 49 49 49 49 4		2775 <u>(</u>	
	D4 (polid) Q	1% 6 % 1 1 1 6 %		0.211	
	D4 (stream)	2.000		3.108 ©	
	D5 (poad)	0.141		0.2911	
Trifloxystrobin	D5 (stream)	\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\frac{1}{60}\$\fra		Ø.184,	
•	R Morond) N	40.141× Q		<sup>2</sup> 0.215 <sup>2</sup>	
	RY(stream)	2,167		2.426 3.255	
	R3 (stream)	2.314		<u> </u>	
	R4 Stream	0 01.645		2.468	
		0 m paffer zone		2.400	
	D3 (ditch)	U initiativite zione	L O	1.240	
	D4 (pond)			0.117	
~ O	D4 (stream)		<del>)                                    </del>	1.389	
	D5 (pond)	· 4 · 5 · 0		0.117	
	D5 (stream)	15 TO - 01	<i>***</i>	1.423	
Triflox	C R (Fond)		y	0.117	
				1.084	
<b>~</b>	R2 (stream)	\$ \$ - A		1.455	
	A R3 (Stream)	- D		1.551	
@ b	R40 stream			1.103	
	R3 (stream) R3 (stream) R4 (stream)				

# Risk assessment for aquatic organisms ACUTE RISK ASSESSMENT FOR AQUATIC ORGANISMS

**Table 10.2-5:** TER<sub>A</sub> calculations based on FOCUS Step 2

	<b>-</b>	1	_		\\ \frac{1}{2}	
Fish acute	Compound	Species			TERA	Trigger &
Trifloxystrobin Invertebrate, acute   EC <sub>50</sub>   16   1400   1400   1415   1600   1400   1415   1600   1400   1415   1600   1400   1415   1600   1400   1415   1600   1400   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1415   1600   1600   1415   1600   1600   1415   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600   1600	Orchards, early	T			N N	
Invertebrate, acute   I.C.   100   13.76   14.00   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   1	Trifloxystrobin		LC50 ¥ 13	3.93		
CGA 357261		Invertebrate, acute	(7)r	4	4,0	( //
Fish acute	CGA 357261	Fish, acute		2 376 ° 1		- 100
Fish acute	CG/1 337201	Invertebrate, acute	EC <sub>50</sub> Q 1400	3.57	<sup>©</sup> 415	100
Fish acute	CGA 257262	Fish, acute	LC% & >10\000	alero L		400
Invertebrate, acute	0311 33   202	Invertebrate, acute	EC <sub>50</sub> & 2600	\$3020 S	© 4 <b>\$</b> 48	
Invertebrate, acute	CC 4 221112	Fish, acute	LC <sub>50</sub> 106000	124	>8049 4	1,000
Invertebrate, acute	CGA 321113	A .			>75%	<b>400</b>
Invertebrate, acute	CGA 272466	Fish, acute	<b>2000000</b> ≥2000000	5 66A × 8	≥3 <b>,53</b> 11	100
Invertebate, acute   IC50	CGA 373400	Invertebrate, agute			<b>2</b> 376554	100
Invertebate, acute   IC50	NIO A 412171	Fish, acute	LG >109900	£24 8		100
NOA 413163	NOA 413161	Invertebrate, acute	EC <sub>50</sub> >100000	10,834 V &	<sup>©</sup> >11 <b>99</b> 04	100
Invertebrate, acute	NO. 412162		LC <sub>500</sub> @100000		>1/3/4943	100
NOA 409480	NOA 413163	Invertebrate, acute	EQ\$\(\text{E}\) >10000	0.870	114943	100
CGA 107170	CGA 357276	Invertebrate, acute		0.319 %	1611285	100
CGA 381318   Fish, acute   LC <sub>50</sub>   2200000   0516   ≥324675   100	NOA 409480	Invertebrate, acute	EC <sub>50</sub> \$ 225,0	0.249	9259	100
CGA 381318   Fish, acute   LC <sub>50</sub>   2200000   0516   ≥324675   100	CGA 107170	FishOacute 📉 🗸	LC50 15600	\$\tag{\text{\$\pi_{033}}\$	6690	100
CGA 381318   Fish, acute   LC <sub>50</sub>   2200000   0516   ≥324675   100	CGA 10/1/0 0	Invertebrate, acute	$\mathcal{E}C_{50}$ $\mathcal{E}$ 22700	¥.033	11166	100
2-Hydrex limethylbenzonitrile  Orchards, late  Trifloxystrobin  CGA 357261  Tish, acute  Tish, acute  CGA 357262  Tish, acute  Trish, acute  Trish, acute  Trish, acute  CGA 357262  Trish, acute  Trish, acute  CGA 357262  Trish, acute  Tris		Fish, acoute	LC <sub>50</sub> 220000	@ 0 *16	≥324675	100
Denomitrile   Survertebrate, acute   EL $_{50}$   990   0.338   18041   100     Orchards, late   Trifloxystrobin   Tr	CGA 381318	Invertebrate acute	EC >100000,	0.010	>162338	100
Trifloxystrobin Fish acute $EC_{50}$	2-Hydroxylmethyl- benzonitrile	Anvertebrate, acute		0.538	18041	100
Trifloxystrobin privertebrate, acute $EC_{50}$ $16$ $16$ $16$ $16$ $16$ $16$ $16$ $16$	Orchards, late		- <del> </del>	_	T	
CGA 357261 Fish, acute   LC <sub>50</sub>   900   1.243   2896   100    CGA 357262   Fish, acute   LC <sub>50</sub>   >10000   1.243   2896   100    CGA 321113   Fish, acute   LC <sub>50</sub>   >100000   15.05   >6645   100    CGA 373466   Fish acute   LC <sub>50</sub>   >200000   1.505   >16247   100    NOA 413161   Fish, acute   LC <sub>50</sub>   >100000   0.626   >159744   100    NOA 413163   Fish, acute   LC <sub>50</sub>   >100000   0.653   >153139   100    NOA 413163   Fish, acute   LC <sub>50</sub>   >100000   0.653   >153139   100    NOA 413163   Fish, acute   LC <sub>50</sub>   >100000   0.653   >153139   100    NOA 413163   Fish, acute   LC <sub>50</sub>   >100000   0.653   >153139   100    NOA 413163   Fish, acute   LC <sub>50</sub>   >100000   0.653   >153139   100	Trifloxystrobin@,			5.897		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	, , , , , , , , , , , , , , , , , , ,					
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 35726			5.063	178	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Incertebrate, acute	N . ~ / ~ /			
Invertebrate acute   EC   3600   2896   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100	CGA \$57262		3/	1 243	>8126	100
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	~			1.2 13	2896	100
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 321113	Fish, acut	<i>y.</i>	15.05	>7043	100
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CG/1321113	The verte brate, acute	$EC_{50}$ >100000	13.03	>6645	100
Invertebrate, acute   EC <sub>50</sub>   >100000   >16247   100	CGA 373464	Fish Sicute V	$LC_{50} \ge 200000$	6 155	≥32494	100
NOA 403163 Invertebrate, acute $EC_{50}$ >100000 $0.626$ >159744 100 NOA 403163 $EC_{50}$ = 100000 $EC_{50}$ >100000 $EC_{50}$ = 100000 $EC_{50}$ = 1000000 $EC_{50}$ = 100000 $EC_{50}$ = 1000000 $EC_{50}$ = 10000000 $EC_{50}$ = 1000000 $EC_{50}$ = 10000000 $EC_{50}$ = 1000000 $EC_{50}$ = 1000000 $EC_{50}$ = 1000000000 $EC_{50}$ = 10000000 $EC_{50}$ = 10000000 $EC_{50}$ = 100000000000 $EC_{50}$ = 100000000000000000000000000000000000	CGA 373400	Invertebroe, acute	EC <sub>50</sub> >100000	0.133	>16247	100
NOA 407163 Fish, acute $LC_{50}$ >100000 $0.653$   >153139   100 $0.653$     100 $0.653$     100 $0.653$   >153139   100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.653$     100 $0.6$	NOA \$4121619	Fish, acuite	$LC_{50}$ $> 100000$	0.626	>159744	100
NOA 403163 Invertebrate, acute $EC_{50} > 100000 = 0.653 > 153139 = 100$	110A 41310 W	Invertebrate, acute	EC <sub>50</sub> >100000	0.020	>159744	100
Invertebrate, acute $EC_{50}$ >100000 >153139 100	NOA ARTICO	Fish, acute	LC <sub>50</sub> >100000	0.652	>153139	100
CGA 357276 Invertebrate, acute EC <sub>50</sub> 524000 0.478 1075314 100	INUA 403163	Invertebrate, acute	EC <sub>50</sub> >100000	0.033	>153139	100
	CGA 357276	Invertebrate, acute	EC <sub>50</sub> 524000	0.478	1075314	100



Compound	Species	Endp [µg		PECsw,max [µg/L]	TERA	Trigger
NOA 409480	Invertebrate, acute	EC <sub>50</sub>	2250	0.183	12295	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
CC A 107170	Fish, acute	LC <sub>50</sub>	13600	3.050	<b>4459</b>	© 100g
CGA 107170	Invertebrate, acute	EC <sub>50</sub>	22700	3.030	7443	1,00
CGA 381318	Fish, acute	LC <sub>50</sub>	≥200000	0.462	≥432900	\$\forall                                                                                                                                                                                                                                                                                                                                                    \qu
CGA 381318	Invertebrate, acute	EC <sub>50</sub>	<b>≥©</b> 0000	0.402	>216450	100\$
2-Hydroxylmethyl- benzonitrile	Invertebrate, acute	EC <sub>50</sub>	9900	0.867	¥122685	
Grapes		4		Q' & °		
Trifloxystrobin	Fish, acute	LC <sub>50</sub>	1/5	3.345	<b>₹ ©4.5</b>	5 10 <b>0</b>
111110111701110111	Invertebrate, acute	EC <sub>0</sub> 0	° 546		\$\cdot\ 4:8\cdot\	ŽÝÔ
CGA 357261	Fish, acute	LO <sub>0</sub>	900	3.524	255	<u>100</u> .
CG/1 337201	Invertebrate, acute	EC50	<u></u> 1400 €	3.521 \$	, ©397 (	100
CGA 357262	Fish, acute	LC50	>10,190	03865	<b>11676</b>	<b>£</b> 000
CGA 337202	Invertebrate, acute	EC <sub>50</sub>	<b>₹</b> \$600 €		<b>4</b> 4 62	$\circ_{100}$
CC A 221112	Fish, acute	EC <sub>50</sub> 2	×40600€0	17 2	<b>\$6</b> 002_{\lambda}	9 100
CGA 321113	Invertebrate, aoute	EC 🚱	>100000	17.6	©>5663¥	100
GG 1 272 466	Fish, acute	LC50	≥200000	Q'	© ≥254 <b>8</b> 5	100
CGA 373466	Invertebrate, acute	EC <sub>50</sub>	≈100006√	7.8570	≥12728	100
	Fish acute	LC	>100000	29 - 3	<b>ॐ</b> 71891	100
NOA 413161	Invertebrate acute	<b>E</b> 50	>1 <b>0</b> 00000 %	1.391 🔊	\$\frac{1}{6} >71891	100
	Fish, acute 7	$LC_{50}$	×100000		>68918	100
NOA 413163	Invertebrate, adute	EC <sub>50</sub>	>10000	1.451	>68918	100
CGA 357276	Invertebrate, acute,	EC 50	524000	Ø.289	1778547	100
NOA 409480 O		EC <sub>50</sub>	225	0.40%	5541	100
l &	Fish, acute	LO	13600	W	6406	100
CGA 107 176	Invertebrate, acute	EC <sub>50</sub>	22700 £	<b>2</b> 9123	10692	100
	Fish, acute &	<del></del>	2 ≥2000@0°	1	≥194742	100
CGA 381318	Invertebrate Sicute	LC <sub>50</sub> V	<b>Y</b>	1.027	>97371	100
2-Hydroxylmethyl-			1 9		/9/3/1	100
benzonitrile	Movertebrate, acute	EC50, 0	® 9900	0.561	17647	100
Strawberries, early			<b>)</b>			
<b>A</b>	Fish, acute	[250 . V	15	1 150	13.0	100
Trifloxy	^ 8/ A/ //	EC <sub>50</sub> ~Q	16	1.150	13.9	100
\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Fish, wite	LC	900	0.006	1016	100
CGÂ⁄357261	Invertebrate, acute	EC 50	1400	0.886	1580	100
	Fish, acute	$\mathcal{C}_{50}$	>10100		>49268	100
CGA 357262 O*	Invertebrate, acute	EC <sub>50</sub>	3600	0.205	17561	100
	Fish, acute	LC <sub>50</sub>	>106000		>9406	100
CGA 321913	Avertébrate, acute	EC <sub>50</sub>	>100000	11.27	>8873	100
	Fish, acute	LC <sub>50</sub>	≥200000		≥34101	100
CGA 373468	Invertebrate, acute	EC <sub>50</sub>	>100000	5.865	>17050	100
P"	Fish, acute	LC <sub>50</sub>	>100000		>77459	100
NOA 413161	Invertebrate, acute	EC <sub>50</sub>	>100000	1.291	>77459	100
NOA 413163	Fish, acute		>100000	1.350	>74074	100
NOA 413103	rish, acute	$LC_{50}$	Z100000	1.330	-/40/4	100



Compound	Species		point g/L]	PEC <sub>sw,max</sub> [µg/L]	TERA	Trigger
	Invertebrate, acute	EC <sub>50</sub>	>100000		>74074	~ <b>1</b> 00 0
CGA 357276	Invertebrate, acute	EC <sub>50</sub>	524000	0.093	\$ 5526882	© 100
NOA 409480	Invertebrate, acute	EC <sub>50</sub>	2250	0.379	5937	1,00
CGA 107170	Fish, acute	LC <sub>50</sub>	13600	0.503	27038	\$100 J
CGA 10/1/0	Invertebrate, acute	EC <sub>50</sub>	<b>3</b> 2700	0.303	431,29	100
CGA 381318	Fish, acute	LC <sub>50</sub>	<b>2</b> 00000	1 000	≥191571≈	7 160
CUA 381318	Invertebrate, acute	EC <sub>50</sub>	>100000	1.094		
2-Hydroxylmethyl- benzonitrile	Invertebrate, acute	EC <sub>50</sub>	9900	0.13%	73436	100
Strawberries, late		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ħ JĀ			W
Trifloxystrobin	Fish, acute	$L\mathbb{Q}_{50}$	15	7.380	<b>10.9</b>	<u>100</u> .
	Invertebrate, acute	EC50.	10	<u> </u>	91.6 g	100
CGA 357261	Fish, acute	LC50	2900	10064	846	<b>10</b> 0
	Invertebrate, acute	EC <sub>50</sub>	¥400 °		Ø 1 <b>3</b> √6	© <sub>100</sub>
CGA 357262		EC50 >	<b>√</b> 10100√	0 24	>4057	§ 100
	Invertebrate, acute	- ~ «	3600	200	©1463 <b>4</b> 7	100
CGA 321113	Fish, acute	LC50	<sup>'</sup> >106000	7096	© >109¥8	100
CG/1 321113	Invertebrate, acute	ÉC <sub>50</sub> €	<i></i> ≥100006√	7.70,0	>10300	100
CGA 373466	Fish, acute O	LC	≥200000	4 944 4 9	<b>₹</b> 40453	100
CG/13/3400	Invertebrate acute	<b>150</b> 50	>1 <b>0</b> 00000	Y 6. %	⑤ >20227	100
NOA 413161	Fish, acute 2	$LC_{50}$	<b>≈</b> 100000	1.033	>96805	100
NOA 413101	Invertebrate, adute	EC <sub>50</sub>	) >10 <b>00</b> 00	1.033	>96805	100
NOA 413163	Fish, acuté 🖔	£ 50	>100000	1.080	>92593	100
NOA 413163	Fivertebrate, acute	EC <sub>50</sub>	\$10000p	. @	>92593	100
CGA 3572 <b>7</b> €	Invertebrate, acute	E Co	<sup>3</sup> 524900	0 12	4589286	100
NOA 409480	Invertebrate, acute	EC <sub>50</sub>	\$2250°	0.304	7401	100
CCA 107170 °C	Fish, acute 🗸 💍	LC <sub>50</sub>	( <u>)</u> 136 <b>0</b> 0	0.603	22554	100
CGA 107170	Invertebrate acute	ECO (	22,700	0.003	37654	100
CC A 201210 @:	FiQ, acute	<b>1</b> 5€ <sub>50</sub> \$	>200000	0.926	≥239234	100
CGA 381318 @	Onvertebrate, acute	EC <sub>59</sub>	>100000	0.836	>119617	100
2-Hydroxylmethyl- benzonitrie	Invertebrate acut	EG50	9900	0.159	62264	100

Bold yalues do not poss the risk assessment

# CHRONIC RISK ASSESSMENT FOR AQUATIC ORGANISMS

Table 10.2- 6: TER<sub>LT</sub> calculations based on FOCUS Step 2

	c .	1		DEC.	O mps	
Compound	Species		point g/L]	PEC <sub>sw,max</sub> [μg/L]	TER <sub>LT</sub>	Trigger
Orchards, early		լրջ	;/Lj	[μg/L] · ①	S. S.	
Orenarus, carry	Fish, chronic	NOEC	(°a) 7.7		<b>2</b> .0	10.00
	Invertebrate, chronic	NOEC	2.76	Ű	0.7	10 0
Trifloxystrobin	Sediment dweller	NOEC A	200 4	2031	50.0	\$10 \( \)
Timoxysuoom	Green algae, chronic	EC <sub>50</sub>	5.3	y.731	\$\frac{30.\cdot\}{\sqrt{1.3}}	10.5
	Aquatic plants, chronic	EC50 7 F	>1230	, Ø	× × × × × × × × × × × × × × × × × × ×	104
CGA 357261	Green algae, chronic	E©50	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	3376	415	$\mathcal{V}_0$
CGA 357262	Green algae, chronic	$EC_{50}$	©>265©	0.828	>2200	1000
CGA 337202	Fish, chronic	NOEC ~	<u>@</u> , 20,00° У≥100000	11		
	Invertebrate, chronic		\$200 c		2 2 1 3 9 3	010
CGA 321113	Sediment dwelle	NØEC Ø EC50. ♥	\$2500 \$2500	13.17		10 10
		<del>                                     </del>	>100000		7502	10
CGA 373466	Green algae, chronic	EC <sub>50</sub> F	>1000000 >1000000	<b>3</b> .664 <b>3</b>	©>17 <b>6</b> 55	10
NOA 413161	Green algae, chronic	EC <sub>50</sub>	\$1000g	0.834	>11 <b>9</b> 04	10
NOA 413163	- X Ci			0.834 60870 ~	211 <del>99</del> 04 249188	10
CGA 357276	Green algae, chronic Green algae chronic	ECG	\$5880	0.319	\$\frac{1000}{2} > 10929	10
CGA 107170	Green algae, chronic	EC <sub>50</sub>	30900 ×	2.0\$3	35517	10
NOA 409480			<del>V                                      </del>	0.243		10
	Green algae, orionic	EC3	> <b>5</b> 880	e en	>24196	+
CGA 381318	Green algae, chronic	V	A, A	0.616	>162338	10
2-Hydroxylmethol- benzonitrile	Green a gae, chonic	EC.	0 10990	0.538	45226	10
Orchards; late		<del>                                     </del>		T		l
	Fish, chronic	NOE	<del>\</del> 70		1.3	10
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Invertebrate, chronic	NØFC &	."У		0.5	10
Trifloxystrobin	Sediment deller	NOEC O	° 200	5.897	33.9	10
	Green algae, chronic	EC <sub>50</sub>	5.3		0.9	10
~	Aquatic plants chronic	ECO O	•		>327	10
CGA 35726	Green algae chroping	EC 50 & 1		5.063	277	10
CGA 35\$262	Green algae, chronic	EC <sub>5</sub> Q	>2650	1.243	>2132	10
8	Fish, Chronic	NOEC	≥100000	-	≥6645	10
**	Invertebrate chronic	POEC	3200		213	10
CGA 321113	Sediment dweller Q	EC <sub>50</sub>	25000	15.05	1661	10
	Green algae, chronic	EC <sub>50</sub>	>100000		>6645	10
CGA 373466	Green algae, chronic	EC <sub>50</sub>	>100000	6.155	>16247	10
NOA 413/161	Areen a Qae, chronic	EC <sub>50</sub>	>100000	0.626	>159744	10
NOA 13163 6	<del>** . **</del>	EC <sub>50</sub>	>100000	0.653	>153139	10
CGA 357276	Green algae, chronic	EC <sub>50</sub>	>5880	0.478	>12301	10
CGA 107170	Green algae, chronic	EC <sub>50</sub>	30900	3.050	10131	10
NOA 409480	Green algae, chronic	EC <sub>50</sub>	>5880	0.183	>32131	10
CGA 381318	Green algae, chronic	EC <sub>50</sub>	>100000	0.163	>21645	10
CGA 301310	Green argae, emonic	LC30	> 100000	0.702	- 21UTJ	10



Trifloxystrobin   Sediment dweller   NOEC   200   3.3	Compound	Species	Endpoint [µg/L]	PEC <sub>sw,max</sub> [µg/L]	TER <sub>LT</sub>	Trigger
Fish, chronic   NOEC   7.7   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0		Green algae, chronic	EC <sub>50</sub> 1099	0 0.807	13618	10
Invertebrate, chronic   NOEC   2.76   3.37   59.8   10	Grapes			- Ô	, ·	* . Ç
Trifloxystrobin   Sediment dweller   NOEC   200   3,3/8   59,8/8   1/6   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/0   1/		Fish, chronic	NOEC 7.	7	2.3	STO Q
Green algae, chronic   EC <sub>50</sub>   5.3   1.6   70   10   10   10   10   10   10   10		Invertebrate, chronic	NOEC 2.7	6		** 10 ×*
Aquatic plants, chronic   EC <sub>50</sub>   >19306     377   100	Trifloxystrobin	Sediment dweller	NOEC 🔻 20	0 3.343		) 10°
CGA 357261         Green algae, chronic         ECst         1400         3.34         397, 16           CGA 357262         Green algae, chronic         RCs         550         5865         >3064         10           CGA 357262         Fish, chronic         RCs         00000000         5863         10s           LOGA 357163         Invertebrate, chronic         RCs         25000         3663         10s           CGA 373466         Green algae, chronic         ECso         100000         7.37         32728         10           NOA 413161         Green algae, chronic         ECso         100000         7.37         32728         10           NOA 413163         Green algae, chronic         ECso         100000         7.37         32728         10           NOA 409480         Green algae, chronic         ECso         30000         7.1891         10           CGA 381318         Green algae, chronic         ECso         30000         2.123         14555         10           CGA 381318         Green algae, chronic         ECso         100000         1.627         >97371         10           11ysenzolitrile         Green algae, chronic         ECso         109900         0.561         19590		Green algae, chronic	$EC_{50}$ $\lesssim$ 5.	3 0	1.0	6¥0 €
CGA 357262   Green algae, chronic   Fish, chronic   NOE		Aquatic plants, chronic	EC <sub>50</sub> >193		<b>√</b> > <b>5</b> 77	0 10
Fish, chronic	CGA 357261	Green algae, chronic	EC 60 140	0 3,5,5,4	397 <sub>4</sub>	) The
Invertebrate, chronic   NOSE   2000   16.66   181   18	CGA 357262	Green algae, chronic	EC <sub>50</sub> 2 265		>3064	$\checkmark _0$
Sediment dweller   BC <sub>50</sub>   35000   1416   10   10   10   10   10   10   10		Fish, chronic		QO S	©° ≥ <b>5</b> 663	⇒ 10 <u>    °                                </u>
Sediment dweller   Green algae, chronic   EC <sub>50</sub>   \$000006   \$0663   10	CC A 221112	Invertebrate, chronic	NOEC > 320		181 4	
CGA 373466   Green algae, chronic   EC <sub>50</sub>   >100000   7.877   32728   10     NOA 413161   Green algae, chronic   EC <sub>50</sub>   >100000   9.391   >71891   10     NOA 413163   Green algae, chronic   EC <sub>50</sub>   400000   1.454   >68918   10     CGA 357276   Green algae, chronic   EC <sub>50</sub>   >5880   4289   ≈20346   10     CGA 107170   Green algae, chronic   EC <sub>50</sub>   >5880   0.496   >14483   10     CGA 381318   Green algae, chronic   EC <sub>50</sub>   >5880   0.496   >14483   10     CGA 381318   Green algae, chronic   EC <sub>50</sub>   >109900   1.627   >97371   10     2-Hydroxylmethyl   Green algae, chronic   EC <sub>50</sub>   >109900   0.561   19590   10     Strawberries, early   Eisle, chronic   EC <sub>50</sub>   >5.3   4.6   10     Aguatic plants, chronic   EC <sub>50</sub>   >1930   >1678   10     CGA 357261   Green algae, chronic   EC <sub>50</sub>   >1930   >1678   10     CGA 357262   Green algae, chronic   EC <sub>50</sub>   >2650   0.205   12927   10     Fish, chronic   EC <sub>50</sub>   >2650   0.205   12927   10     Fish, chronic   EC <sub>50</sub>   >100000   ×8873   10     CGA 373466   Green algae, chronic   EC <sub>50</sub>   >100000   ×8873   10     CGA 373466   Green algae, chronic   EC <sub>50</sub>   >100000   0.866   >11280   10     CGA 373466   Green algae, chronic   EC <sub>50</sub>   >100000   0.886   >11280   10     CGA 373466   Green algae, chronic   EC <sub>50</sub>   >100000   0.8873   10     CGA 373466   Green algae, chronic   EC <sub>50</sub>   >100000   0.291   >77460   10     NOA 413161   Green algae, chronic   EC <sub>50</sub>   >100000   1.350   >74074   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>   >5880   0.093   >63226   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>   >5880   0.379   >15515   10     NOA 409480   Green algae, chronic   EC <sub>50</sub>   >5880   0.379   >15515   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>   >5880   0.379   >15515   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>   >5880   0.379   >15515   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>   >5880   0.379   >15515   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>   >5880   0.379   >15515   10     CGA 367276   Green algae, chronic   EC <sub>50</sub>	CGA 321113	Sediment dweller	$\mathbb{E}\mathcal{G}_{50}$ $\mathbb{Q}'$ $\mathfrak{Z}_{500}$		1416	<b>1</b> 0
NOA 413161   Green algae, chronic   EC <sub>50</sub>   >1,60000   0.391   >71891   10     NOA 413163   Green algae, chronic   EC <sub>50</sub>   4000000   1.454   >68918   10     CGA 357276   Green algae, chronic   EC <sub>50</sub>   >5880   0.389   20346   10     CGA 107170   Green algae, chronic   EC <sub>50</sub>   >5880   0.389   20346   10     NOA 409480   Green algae, chronic   EC <sub>50</sub>   >5880   0.406   >14483   10     CGA 381318   Green algae, chronic   EC <sub>50</sub>   >100000   1.627   >97371   10     2-Hydroxylmethyl benzonitrile   Green algae, chronic   EC <sub>50</sub>   >100900   0.561   19590   10     Strawberries, early		Green algae, chronic &	EC <sub>50</sub>		> <b>56</b> 63	10
NOA 413163   Green algae, chromic   EC <sub>50</sub>   T00000   T.4545   Se8318   10	CGA 373466	Green algae, chronic			2728	10
NOA 413163   Green algae, chronic   EC <sub>50</sub>   \$100000   1.45b   >68918   10	NOA 413161	Green algae, chronic	F650 \$ >16000	0 ₩.391 🏷	O>71891 <sup>*</sup>	10
CGA 107170   Green algae, chronic   EC <sub>50</sub>   20900   2.123   14555   10     NOA 409480   Green algae, chronic   EC <sub>50</sub>   55880   0.406   >14483   10     CGA 381318   Green algae, chronic   EC <sub>50</sub>   >100000   1.627   >97371   10     2-Hydroxylmethylbenzonitrile   Green algae, chronic   EC <sub>50</sub>   310990   0.561   19590   10     Strawberries, early   EC <sub>50</sub>   310990   0.561   19590   10     Strawberries, early   EC <sub>50</sub>   310990   0.561   19590   10     Strawberries, early   EC <sub>50</sub>   2.70   2.4   10     Trifloxystrobin   Green algae, chronic   EC <sub>50</sub>   5.3   4.6   10     Green algae, chronic   EC <sub>50</sub>   5.3   4.6   10     Apatic plants, offonic   EC <sub>50</sub>   5.3   4.6   10     Apatic plants, offonic   EC <sub>50</sub>   5.3   4.6   10     CGA 357262   Green algae, chronic   EC <sub>50</sub>   22600   0.205   12927   10     ECGA 321113   ECGA 373466   Green algae, chronic   EC <sub>50</sub>   25000   11.27   2218   10     Green algae, chronic   EC <sub>50</sub>   25000   11.27   2218   10     Green algae, chronic   EC <sub>50</sub>   25000   5.865   >11280   10     NOA 413461   Green algae, chronic   EC <sub>50</sub>   >100000   1.291   >77460   10     NOA 41363   Green algae, chronic   EC <sub>50</sub>   5880   0.93   >63226   10     CGA 357276   Green algae, chronic   EC <sub>50</sub>   30900   0.503   61431   10     NOA 409480   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 3672776   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 30740   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 30740   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 30740   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 30740   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 30740   Green algae, chronic   EC <sub>50</sub>   5880   0.379   >15515   10     CGA 30740   CGA 30740   CGA 30740   CGA 3079   >15515   10     CGA 30740   CGA 30740   CGA 3079   >15515   10     CGA 30740   CGA 30740   CGA 30740   CGA 3079   >15515   10     CGA 30740   CGA	NOA 413163			1.450 <sub>5</sub>	>68918	10
NOA 409480	CGA 357276	Green algae, chronic	EC >588	0 0289	<b>2</b> 0346	10
CGA 381318         Green algae, abronic         ECs.         >100000         1.027         >97371         10           2-Hydroxylmethyl, benzonitrile         Green algae, chronic         ECs0         109900         0.561         19590         10           Strawberries, early           Fish, chronic         NOEC         2.76         2.4         10           Trifloxystrobin         Sediment dwelfer         NOEC         200         1.150         174         10           Green algae, chronic         ECs0         5.3         4.6         10           Aguatic plants, chronic         ECs0         >1930         >1678         10           CGA 357262         Green algae, chronic         ECs0         >2650         0.205         12927         10           CGA 357262         Green algae, chronic         NOEC         3200         28873         10           CGA 321113         Invertebrate, chronic         NOEC         32000         28873         10           CGA 373466         Green algae, chronic         ECs0         >100000         >8873         10           CGA 373466         Green algae, chronic         ECs0         >100000         5.865         >11280         10           NOA 4	CGA 107170	Green algae, chronic	FC 50 \$ 20090	0 2.123	14555	10
2-Hydroxylmethyl benzonitrile    Fish chronic   EC <sub>50</sub>   J109900   0.561   19590   10	NOA 409480	Green algae, chronic	EC <sub>50</sub> >588	<b>0</b> √0.4 <b>0</b> 6 %	>14483	10
Strawberries, early	CGA 381318	Green algae, Gronic	ECs >10000	0 1.627	>97371	10
Fish, chronic   NOEC   7.7   6.7   10		Green algae, chronic	FC50 31099	00.56£	19590	10
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Strawberries, Carly			, W		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	, Q	Fish, chronic		7 6	6.7	10
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Invertebrate, chronic	NOE 2.7	6	2.4	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Trifloxystrobin		NQEC (, 20	0 1.150	174	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Green algae Chronic	EC 50 5.	3	4.6	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	@.	Aquatic plants, chronic		0	>1678	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 357261©		EÇ 🔭 140	0 0.886	1580	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 357262,	Green algae chronic .	E€ <sub>50</sub>	0 0.205	12927	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$				0	≥8873	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Invertebrate, Orronic	NÖEC 320	0	284	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 321113		1.00	0 11.27	2218	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	( ° )	Green algae, chronic	EC <sub>50</sub> >10000	0	>8873	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	CGA 373466 💆 🐧	4 6 × 16 /			1	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	/\\\\\	Green algae, chronic		0 1.291	> 77460	10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	NOA 41\$163	Green algae, chronic	EC <sub>50</sub> >10000	0 1.350	> 74074	10
CGA 107100 Green algae, chronic $EC_{50}$ 30900 0.503 61431 10 NOA 409480 Green algae, chronic $EC_{50}$ >5880 0.379 >15515 10		Green algae, chronic		0 0.093	> 63226	10
NOA 409480 Green algae, chronic EC <sub>50</sub> >5880 0.379 >15515 10		1 3 "		0 0.503	61431	10
	@ <i>"</i>	Green algae, chronic		0 0.379	>15515	10
CGA 381318 Green algae, chronic EC <sub>50</sub> >100000   1.044 >95785   10	CGA 381318	Green algae, chronic	EC <sub>50</sub> >10000	0 1.044	>95785	10

Compound	Species	Endpoint [µg/L]	PECsw,max [µg/L]	TER <sub>LT</sub>	Trigger
2-Hydroxylmethyl- benzonitrile	Green algae, chronic	EC <sub>50</sub> 10990	0.133	82632	510
Strawberries, late			ô	,	4 .5
	Fish, chronic	NOEC 7.7	A	5,6	\$\text{70}
	Invertebrate, chronic	NOEC 2.76		2.0	× 10 ×
Trifloxystrobin	Sediment dweller	NOEC T 200	1.380	©145<	10° C
	Green algae, chronic	EC <sub>50</sub> 5.3		3.8	\$10 KP
	Aquatic plants, chronic	EC <sub>50</sub> >1930		>13,99	
CGA 357261	Green algae, chronic	EC\$\tilde{\text{O}} 1\hat{200}	1,064	1316	
CGA 357262	Green algae, chronic	<b>E</b> C <sub>50</sub>	0.246 V	\$10772V	<b>40</b>
	Fish, chronic	NOEC 2000000		© ≥1 <b>0</b> \$00	⇒ 10√°
CC A 221112	Invertebrate, chronic	NOEC > 3200		330 <	
CGA 321113	Sediment dweller	EC50 @ 25000	9(709 . )	2575	<b>1</b> 0
		N ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		>10300	10
CGA 373466	Green algae, chronic	EC <sub>50</sub> >100000	4.033 0 1.080	20227	10
NOA 413161	Green algae chronic	EC 50 > 100000	∯.033 °	©>96 <u>8</u> 05	10
NOA 413163	Green algae, chronic	EC <sub>50</sub> 70000	1.080	>92593	10
CGA 357276	Green algae, chronic	EC® >5880	QQ 12 ~	<i>\$</i> 52500	10
CGA 107170	Green algae, chronic	EC <sub>50</sub> 20900	0.603	51244	10
NOA 409480	Green algae, chromic	EC <sub>50</sub> >5880	0.304	>19342	10
CGA 381318	Green algae, a Fonic	EC\$ >100000	0.836	>119617	10
2-Hydroxylmethyl benzonitrile	Green algae, chronic	EC <sub>50</sub> 310990	0.159	69119	10
	Green algae, chronic  Green algae, chronic				

Table 10.2-7: refined TER calculations using endpoints derived from higher tier studies (NOECs cover acute and chronic exposure) based on FOCUS Step 2

					. 💝 . (
Compound	Species	Endpoint [µg/L]	PEC <sub>sw,max</sub> [μg/L]	TER	<b>Frigger</b>
Orchards, early			Ø,		
Tuiflouvetuolein	Fish species <sup>a</sup>	NOEC 25.3	2 8/2/1	6.4	\$10 ×
Trifloxystrobin	Aquatic species except fish b	NOEC 33	3.93/1"	0.9	1,5
Orchards, late		* W	Q	, Ø 3	9 25
Trifloxystrobin	Fish species <sup>a</sup>	NOEC 25.3	5 907	4.3	
	Aquatic species except fish b	NOF 3.7	5.897	y 0.8	
Grapes				, , K	
T: 61	Fish species <sup>a</sup>	NOEC 25.3	2.50%	₹ 7.6°	<sub>4</sub> 10
Trifloxystrobin	Aquatic species except fish	NOFC 307 Q	3343	13	
Strawberries, ea	rly		A . O		* <i>L</i> Q
T : 0 t 1:	Fish species a	MOEQ 252	P 250	© 22.0°	010
Trifloxystrobin	Aquatic species except fish	NOEE 3.7			<b>2</b> 1
Strawberries, ea	2 %			S V	Ĵ
TT : 01	Fish species a Q	NOES 25, W	1 290	18.9	10
Trifloxystrobin	Aquatic species except fish		1,380	2.9"	1
	•	~ // 4//19	- // 6 4	(0, 1	

a endpoint based on a repeated (3x) was exposure study with the formulation (WO 50), and the most sensitive fish species (rainbow trout) and life stage valevin stage farvae) that covers both, acute and chronic effects of , 2002M-05670-019, KC\$/10.23/02). 🎺 trifloxystrobin (

The TER values for the uses in strawbetties meet the trigger value based on FOCUS Step 2 PEC application of the product in these cross.

For the uses in orchards (early and late) and grapes further redimenent using FOCUS Step3 values in necessary. values. Therefore, an unacceptable risk to advatic organisms is not to be expected following the

b endpoint based on a lattic freshwater community mesocosm with the formulation (KCA 8.2.8/09)

Table 10.2- 8: refined TER calculations using endpoints derived from higher tier studies (NOECs cover acute and chronic exposure) based on FOCUS Step 3

(1	1	ID 1 1 1	DEC	FOCUS		
Compound	Species	Endpoint [μg/L]	PEC <sub>sw,max</sub> [µg/L]	FOCUS scenario	TER <sub>@</sub>	Trigger
Orchards, early		N 0 7	1, 0 1	8	· · · · · · · · · · · · · · · · · · ·	. 2
			2.740	D3 (ditell)	9.20	
			0.023	D4 (pend)	\$206 \sqrt{2000}	
			2.565	D4Qstream)	9.9.5	
			0.123	D5 (pond)	296	
T 'C + 1'	Fish,	NOTO 25.2	2.511	D5 (Gream)	<b>10</b> 7.1	
Trifloxystrobin	acute and chronic	NOEC 25.3	0.123	R1 (pond)	2060	
			2.095	R1 (stream)	7 12.1	
		A . õ	2.576	R2 (shream)	<b>%</b> .1 &	
			×2.964°	R3 (stream)	<b>≪</b> 8.5 <sup>∞</sup>	
			2.108	R4 (stream)	* 1	Õ
			<b>2</b> .740 ~ (	D3 (ditch)	J.4 D	
			0.123	DG (pond)	© 30.1°√	
			\$\tag{2.565}	D4 (stream)	) <b>(</b> k.4	
	*	* 4, 5° 4	0.123	D5 (pond)	30.1	
Trifloxystrobin	Aquatic	NOEC 37	2.511	DS (stream)	<b>G</b> 1.5	1
Timoxysuoom	except fish		© 0.123 (	R1 (pond)	30.1	1
			2, <b>0</b> 95 O	R1 stream	1.8	
			2.776@	R2 (stream)	1.3	
			2.964	CR3 (stream)	1.2	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		0, 4,0, 5	(D) 108	R4 (stream)	1.8	
Orchards Jate	· · · · · · · · · · · · · · · · · · ·	NOEC 3.7 S				
			4.1Q5 °	D3 (ditch)	6.1	
<b>4</b>			0.185	D4 (pond)	137	
	3		3.981	D4 (stream)	6.4	
			0.185	D5 (pond)	137	
Trifloxystroby	acute and O	NOEC 25.3	4.079	D5 (stream)	6.2	10
4	chronic		0.185	R1 (pond)	137	
			3.108	R1 (stream)	8.1	
, <b>&amp;</b>	SA		4.170	R2 (stream)	6.1	
			4.446	R3 (stream)	5.7	
Q.			3.161	R4 (stream)	8.0	
			4.115	D3 (ditch)	0.9	
a G		\$ ~Q	0.185	D4 (pond)	20.0	
	1, 4		3.981	D4 (stream)	0.9	
Trifloxvstrol@n	species >	NOEC 3.7	0.185	D5 (pond)	20.0	1
	except Tish		4.079	D5 (stream)	0.9	-
ÇO*			0.185	R1 (pond)	20.0	
<u> </u>			3.108	R1 (stream)	1.2	
			4.170	R2 (stream)	0.9	

Compound	Species	Endpoint [μg/L]	PEC <sub>sw,max</sub> [μg/L]	FOCUS scenario	TER	Trigger
			4.446	R3 (stream)	0.8	
			3.161	R4 (stream)	1.2	
Grapes				Õ	~	
			2.092	D6 (diteh)	12.6	
			0.076	R1 (pond)	<b>₹333</b> ₹	
TT : CI 1 :	Fish,	NOEC 25.3	1.555	R1Qstream)	©16.3 \$\text{\$\ext{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\ext{\$\text{\$\exitt{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\exittit{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\exittit{\$\text{\$\}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	
Trifloxystrobin	acute and chronic		2.062	R2 (stream)	12.30	
		l and the second	2.200	R3 (speam)	<b>1</b> 4.5 €	
		<b>Q</b>	1.555	R4 (stream)	16.3	
		<b>Y</b>	2.092°	D6 (ditch)	) 1.8 ° 4	
	4	4	(n . (C) . 4	R1 (pend)	<b>48</b> .7	\$\circ\(\dots\)
TT : CI 1 :	Aquatic	NOTE Size 7	×1.555	RA (stream)	√ 2.4 <sup>©</sup>	
Trifloxystrobin	species	Aquatic species except fish	2.062 .	R2 (stream)	1.8	
<u> </u>	except fish		2.700 Q	R3 (Stream)	J.7 6	
			21.555	Re (stream)	2.4%	

The TER values for the use in grapes meet the trigger value based on FOCUS, Seep 3 PEC values. For the uses in ordered, early application (fish species only) and orchards, late application, further refinement using 3 OCUS step A values in necessary. Therefore, an unacceptable risk to aquatic organisms is not to be expected following the application of the product in this crops

Table 10.2- 9: refined TER calculations using endpoints derived from higher tier studies (NOECs cover acute and chronic exposure) based on FOCUS Step 4 including mitigation measures

	intigation inc		1		1	
Compound	Species	Endpoint [µg/L]	PEC <sub>sw,max</sub> [μg/L]	FOCUS Scenario	TER &	Trigger
Orchards, early					, O,	
50% drift reduct	tion		Ö			
			1₹370	D30 ditch)	<b>8</b> .5 S	
T 'Cl 4 1'	E. 1	NOTO 25.2	1.283	D4 (stream)	¶19.7-Q	
Trifloxystrobin	Fish species	NOEC 25.3	1.388	R2 (staream)	1852	
		Q	1.482	R2 (stream)	N7.1 🗳	
5 m buffer zone	1					, <b>*</b>
		4 6	1849	D3 (Dtch)	13 7	A ~ .
T : Cl	E' 1 '	NOTE OF 25 25	2.003	D4 (stream)	√ 12.6 ©	
Trifloxystrobin	Fish species	NOEC \$25.3	2.167	®2 (stream)	711.7	210
			2,914 n	R3 (stream)	100	
Orchards, late	1					
50% drift reduct	tion	0 , L, O	S. O		) <u>(</u> ,	
	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		2.058	D3 (Sitch)	129	
	Eigh S	NOEC 25.3	<b>P</b> .990	Da (stream)	, <b>@</b> 12.7	
	Fish,		2.039	D5 (stream)	12.4	
Trifloxystrobin	acute and	NOEC 25.3	Ĵ? <b>5</b> ⁄54 Ô	R1 (stream)	16.3	10
	chronic		₩2.085@	R2 (stream)	12.1	
į į			2.22	A3 (stocam)	11.4	
			<b>\$</b> 580 \$	R4 (stream)	16.0	
<i></i>	0 V		\$2.058 °	Q3 (ditch)	1.8	
			1.990	D4 (stream)	1.9	
				D5 (stream)	1.8	
Trifloxystrobin	species	SOEC 3.7	0 1.554	R1 (stream)	2.4	1
	except Ash		2.085	R2 (stream)	1.8	
, W			2.223	R3 (stream)	1.7	
4			1.580	R4 (stream)	2.3	
5 m buffer zone	<u> </u>		1.300	iti (sircuiii)	2.3	
3 III DUI CA ZONC			2.775	D3 (ditch)	1.3	
4			3.108	D4 (stream)	1.2	
			3.184	D5 (stream)	1.2	
Trifloxystrob	Aquatic ()	NOEC 37	2.426	R1 (stream)	1.5	1
	except fish	₩ ₩ ₩	3.255	R2 (stream)	1.1	1
Trifloxystrob		Neec 3.7	3.471	R3 (stream)	1.1	
			2.468	R4 (stream)	1.5	
10 m buffee zone		<u> </u>	2.100	it (sacum)	1	<u> </u>
	<u> </u>		1.240	D3 (ditch)	20.4	
Trifloxystrobin	Fish, acute and	NOEC 25.3	1.389	D4 (stream)	18.2	10
	chronic		1.423	D5 (stream)	17.8	- 0
	1	İ	- · · <del>- ·</del>			1



Compound	Species	Endpoint [µg/L]	PEC <sub>sw,max</sub> [μg/L]	FOCUS scenario	TER	Trigger
			1.084	R1 (stream)	23.3	
			1.455	R2 (stream)	17.4	
			1.551	R3 (stream)	16.3	
			1.103	R4 (stréam)	22.90	

According to the presented risk assessment based on FOCUS Step 4 calculations, the risk to a organisms from the use of the product in orchards unlikely if 30% drift reducing rozzles are used. Alternatively, a buffer zone of 5 m (early application) and 10 m (late application) should maintained during application of the product.

# CP 10.2.2 Additional long-term and chromic toxicity studies on fish, aquatic invertebrates and sediment dwelling organisms. No new studies were necessary. CP 10.2.3 Further testing on advatic organisms. No studies were accessary.

### **CP 10.3 Effects on arthropods**

### **CP 10.3.1 Effects on bees**

Details of the honeybee testing with the active substance trifloxystrobin are presented in MCA.

Section 6, Point 8.3.1, as well as within the existing Review Report for trifloxystrobin (SANCO/4339/2000-Final, 2003).

Table 10.3.1- 1: Acute toxicity of trifloxystrobin (tech.) to been

	Tost species/starl	trifloxystrobin (tech.) to bees Reference
Test substance	Test species/study design	Endpoint  LD — oral > 200 μg as./bee  LD — oral > 200 μg as./bee  LD — oral > 100 μg as./bee
Trifloxystrobin	Honey bee	LDA oral > 200 ug a hee CLOEPC
tech.	48 h	LDs contact 200 µg a.s./bec M-092668-00-1
		LD - oral > 200 μg a .s./bee M-03/2668-07-1 LD - contact > 200 μg a .s./bee M-03/2668-07-1 LGA 8.3.11.1/0
Trifloxystrobin,	Honey bee,	LD - orat > 100 mg a w/bee 67570035
tecn.	4811	LD <sub>50</sub> contact γ00 μg/s.s./becc M = 1911-01-1   KQA 8.3 № 1.1/0
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(C) n		
Q.		
		Endpoint    LD   - oral   - 200

Table 10.3.1-2: Honey bee toxicity data generated with Trifloxystrobin WG 50

Acute oral and contact toxicity (laboratory)   Trifloxystrobin   Honey bee,   LDs0- oral   >94.8 μg a.s./bee   LOs0- oral   >101.6 μg a.s/bee   LOs0- oral   >101.8 μg a.s./bee   LOs0- oral   >100 μg a.s./be	Test substance	Test species/study	Endpoint	Reference
Trifloxystrobin WG 50  Honey bee, 48 h  LD <sub>50</sub> - contact >101.6 μg a.s./bee LD <sub>50</sub> - contact >101.6 μg a.s./bee CCF 10.3 [3-1/0] (2012)  Trifloxystrobin WG 50  Honey bee, LD <sub>50</sub> - contact >100 μg a.s./bee LD <sub>50</sub> - contact >100 μg a.s./bee CD <sub>5</sub>	Test substance	•	Enapoint	Therefore The Total Control of
Honey bee,   LD <sub>50</sub> - contact   >101.6 \text{ mg a.s./bee}   LD <sub>50</sub> - contact   >100 \text{ mg a.s./bee}	Acute oral and co	ntact toxicity (laboratory	y)	
Trifloxystrobin WG 50  Honey bee, 48h  LDso-contact >107.8 µg a.s./bee LDso-contact >107.8 µg a.s./bee LDso-contact >100 µg a.s./bee KCP 10.3.1.1.1/02 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1/01 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1/01 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1/01 KCP 10.3.1.3.1.1/02 KCP 10.3.1.3.1/01 KCP 10.3.1.3.1/02 KCP 10.3.1.3.1/01 KCP 1	Trifloxystrobin	Honey bee,	LD <sub>50</sub> – oral >94.8 μg a.s./bæe <sup>1</sup>	
Trifloxystrobin WG 50  Trifloxystrobin Semi-field tanget study in Phaceliar application during full-bloom and bees actively foraging of the frop under confined conditions  Trifloxystrobin Semi-field tanget study in Phaceliar application during full-bloom (BBCH 59-61) without bees present 3 and phication during full-bloom (BBCH 59-61) without bees present 3 and phication during full-bloom (BBCH 59-61) without bees present 3 and phication during full-bloom (BBCH 69-65) and bees actively foraging catalyty, behaviour nectar- and pollen storage, queen survival, brood- and colony development (covering two complete brigg ocycles) after an application during full-bloom (BBCH 69-65) and bees actively foraging catalyty, behaviour nectar- and pollen storage, queen survival, brood- and colony development (covering two complete brigg ocycles) after an application during full-bloom (BBCH 69-65) and bees actively foraging catalyty, behaviour nectar- and pollen storage, queen survival, brood- and colony development (covering two complete brigg ocycles) after an application during full-bloom (BBCH 69-65) and bees actively foraging on the crop under confined foraging on the cr	WG 50	48 h	LD <sub>50</sub> – contact >101.6 μg a.s. bee <sup>1</sup>	
Trifloxystrobin WG 50  Honey bee brood feeding test  Trifloxystrobin WG 50  Honey bee brood feeding (Ootnen et al., 1992)  Trifloxystrobin WG 50  Honey bee brood feeding (Ootnen et al., 1992)  Trifloxystrobin WG 50  Trifloxystrobin WG 50  Fluopyram Trifloxystrobin EC 312.5 (187.5±125)  Fluopyram Trifloxystrobin Sc 500 (2509.250)  Flu			~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~ ~~	V \$27 h
Cage and tunnel studies  Trifloxystrobin Propiconazole (187.5+125)  Fluopyram Trifloxystrobin SC 500 (2509.250)  Emi-field tunnel study Fluoretian BECH 55-61 Sin and bees actively foraging of the crop under confined conditions  Fluopyram Trifloxystrobin SC 500 (2509.250)  Fluopyram Triflox				
Trifloxystrobin WG 50  Bee brood feeding test  Honey bee brood feeding (Oomen et al., 1992)  Honey bee brood feeding (Oomen et al., 1992)  Trifloxystrobin WG 50  Semi-field cage study in Propionazole EC 312.5 (187.5+125)  Fluopyram Trifloxystrobin SC 500 (250.250)  Trifloxystrobin SC 500 (250.250)  Honey bee brood feeding test  No adverse effects on mortality, foraging activity, befraviour ducen survival brood- and colony development (every new trifloxystrobin as the first on mortality, foraging activity, befraviour ducen survival brood- and offoliony development (covering two complete brood cycles) after an application during infilment or flowering (BBCH 59-61) without bees greenty floating full-bloom (BBCH 64-65) and bees actively foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees green (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging on the crop under confined (BBCH 64-65) and bees greenty foraging the foraging on the crop under confined (BBCH 64-65) and bees greenty foragin	W G 30	4011		
Trifloxystrobin WG 50  Bee brood feeding test  Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin WG 50  Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin WG 50  Trifloxystrobin WG 50  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee brood feeding (Oopren et al., 1992)  Trifloxystrobin (Feeding Honey bee study in the proposition of	Chronic toxicity t	o adult bees (laboratory)		
Bee brood feeding test  Trifloxystrobin WG 50  Honey bee brood feeding (Oomen et al., 1992)  Cage and tunnel studies  Trifloxystrobin + Propiconazole EC 312.5 (187.5±125)  Fluopyram Trifloxystrobin SC 500 (250.5250)				
Bee brood feeding test    Honey bee brood feeding (Oomen et al., 1992)   Honey bee brood feeding (Oomen et al., 1992)   Gage and tunnel studies   Semi-field case study in Placelia; application during full-bloom and bees actively designed for the crop under confined miniment pre-field tungel study in Placelia; 1st application during full-bloom SC 500 (250-250)   Gage and tunnel studies   Semi-field tungel study in Placelia; 1st application during full-bloom and bees actively designed for the crop under confined complete brood complete brood complete brood and colony development after an application corresponding to 186 g from the crop under confined conditions   Semi-field tungel study in Phacelia; 1st application during imment pre-field tungel study in Phacelia; 1st application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles) after an application during full-bloom group to the crop under confined complete brood cycles after an application during honey bees actively forging on the crop under confined complete brood confined complete brood cycles after an application during honey bees actively forging on the crop under confined complete brood cycles after an application during honey bees actively forging on the crop under confined complete brood cycles and colony development (covering two complete brood and colony development (covering two complete brood cycles) after an application corresponding to 146 group to the crop transpor			LC6 > 1200mg a. & kg ""	
Trifloxystrobin WG 50  Honey bee brood feeding (Oomen et al., 1992)  Cage and tunnel studies  Trifloxystrobin EC 312.5 (187.5±125)  Fluopyram Trifloxystrobin SC 590 (250.8±50)  Cage and tunnel studies  Semi-field tunnel study in Phacetia; 1st opplication during imminence pre-flowering (BBCH-59-61) without bees dresent; 2nd application to consider the crop under confined conditions  Semi-field tunnel study in Phacetia; 1st opplication during imminence pre-flowering (BBCH-59-61) without bees dresent; 2nd application to corresponding to 186 g trifloxystrobin activity, behaviour nectar- and pollen storage, dreen survival, brood- and colony development (covering two complete brood cycles) after an application during the cycles of the cycles and the cycles after an application during the cycles after an application during honey bees actively foraging on the crop under confined conditions.  Conditions  Semi-field tunnel study in the cycles after an application corresponding to 146 g and colony development (covering two complete brood cycles) after an application corresponding to 146 g and colony development (covering two complete brood cycles) after an application corresponding to 146 g and colony development (covering two complete brood cycles) after an application corresponding to 146 g and colony development (covering two complete brood cycles) after an application corresponding to 146 g and colony development (covering two complete brood cycles) after an application corresponding to 146 g and colony development (covering two complete brood cycles) after an application corresponding	WG 30	reeding study	Nore 2120 mg a.s./kg	
Trifloxystrobin WG 50  Honey bee brood feeding (Oomen et al., 1992)  Cage and tunnel studies  Trifloxystrobin Propiconazole EC 312.5 (187.5+125)  Fluopyram Trifloxystrobin SC 500 (250(250))  Fluopyram	Bee brood feeding	g test		
Trifloxystrobin WG 50  Honey bee brood feeding (Oomen et al., 1992)  Cage and tunnel studies  Trifloxystrobin Propiconazel (187.5+125)  Semi-field tunnel study brood and bees actively doraging infinite phace fair; 1st application during infinite phace fair and pollen storage, queen survival, brood- and colony development (covering two complete brood cycles) after an application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering phace fair and palication corresponding to 146 g trifloxystrobin a.s./ha into full-flowering phace fair and pollen storage. Queen survival, brood- and colony development (covering two complete brood cycles) after an application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering phace fair and pollen storage. Queen survival, brood- and colony development (covering two complete brood cycles) after an application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering p				
rifloxystrobin SC 500 Semi-field tuniel study Trifloxystrobin SC 500 (250) (25		, , , , , , , , , , , , , , , , , , ,	brood development (cogs, young larvae,	(2012)
Trifloxystrobin  Semi-field case study in Phaceliar application during infinite process of the crop under confined conditions  Fluopyram Trifloxystrobin SC 500 (250 250)  RO adverse effects on mortality, foraging activity, bethaviour queen survival broad- and colony development after an application corresponding to 186 g frifloxystrobin. s./ha into full-flowering Phacelia during honey bees actively foraging activity, behaviour nectar- and pollen storage, queen survival broad- and colony development (covering two complete broad cycles) after an application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-59-61 without bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-59-61) without bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees gresent application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees green application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering (BBCH-64-65) and bees green application corresponding to 146 g trifloxystrobin a.s./ha into full-floweri		feeding (Ones et al.		
Cage and tunnel studies  Trifloxystrobin (+ Propiconazole EC 312.5 (187.5+125)  (187.5+125)  Fluopyram Trifloxystrobin SC 560 (2504250)  EC 360 (2504250)  Trifloxystrobin (BCH 59-61) without bees are study for a grip of the cation during full-bloom and bees actively foraging activity, behaviour agueen survival (brood- and colony development after an application corresponding to 186 g frifloxystrobin a.s./ha into full-flowering phacelia during honey bees actively foraging activity, behaviour nectar- and pollen storage, queen survival, brood- and colony development (covering two complete brood cycles) after an application during tull-bloom (BBCH 59-61) without bees agreement application corresponding to 146 g tiffloxystrobin a.s./ha into full-flowering (2012)  Trifloxystrobin (BBCH 59-61) without bees agreement agreement after an application corresponding to 146 g tiffloxystrobin a.s./ha into full-flowering honey bees actively foraging on the crop under confined	WG 50	1 8/0 8		
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Trifloxystrobin (Semi-field case study in + Propiconazole (187.5+125)  EC 312.5 (187.5+125)  Semi-field tunnel study in the crop under confined (2002)  Emi-field tunnel study in the crop und			sprace (75 ppm)	7
Trifloxystrobin (Semi-field cage study in + Propiconazol (187.5+125)  EC 312.5 (187.5+125)  (187.5+125)  Fluopyram Trifloxystrobin SC 500 (2500 250)  ED 312.5 (2000)  Phaceta; 1st (2000)  Fluopyram (BBCH 59-61) without bees are subjected in during full-bloom (BBCH 65) and bees actively foraging the crop under confined conditions (2012)  Fluopyram (BBCH 65) and bees actively foraging activity, behaviour queen survival (2000)  Phaceta; in the crop under confined conditions (2012)  Trifloxystrobin SC 500 (250)  Fluopyram (BBCH 65) and bees actively foraging activity, behaviour nectar- and pollen storage, queen survival (2000)  Fluopyram (BBCH 65) and bees actively foraging activity, behaviour nectar- and pollen storage, queen survival (2000)  Fluopyram (BBCH 65) and bees actively foraging on the crop under confined (2012)  Fluopyram (BBCH 65) and bees actively foraging on the crop under confined (2012)	Cage and tunnel s	studies		T
Trifloxystrobin ( Propiconazole EC 312.5 (187.5+125) Procedure application during full-bloom and bees actively foraging of the crop under confined conditions  Trifloxystrobin ( Semi-field case study in Procedure application corresponding to 186 g frifloxystrobin ( Semi-field tunior) study foraging of the crop under confined conditions  Trifloxystrobin ( Semi-field tunior) study foraging activity, behaviour nectar- and pollen storage, queen subvival, brood- and colony development (covering two complete brood cycles) after an application during full-bloom ( BBCH 59-61 ) without bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g to 186 g) and bees gresent ( 2nd application corresponding to 146 g) and the crop under confined ( 2012) and the			SNo adverse effects on mortality, foraging	
Placelia application corresponding to 186 g (187.5+125)  Phacelia application corresponding to 186 g (187.5+125)  Phacelia application corresponding to 186 g (187.5+125)  Phacelia during honey bee actively foraging on the crop under confined  Conditions  No adverse effects on mortality, foraging activity, behaviour nectar- and pollen storage, queen subvival, brood- and colony development (covering two complete brood cycles) after an application during full-bloom (BBCH 59-61) without bees gresent 2nd appli- cation during full-bloom (BBCH 54-65) and bees actively foraging on the crop under confined  Phacelia during honey bees actively foraging on the crop under confined  99106/01-BZEU M-050990-01-1 KCP 10.3.1.5/01  64861037 M-435338-01-1 KCP 10.3.1.5/02	Trifloxystrobin	Semi-tield case study in		(2000)
Trifloxystrobin SC 500 (250)  EC 312.5  (187.5+125)  Agring full-bloom and bees actively foraging bees actively foraging on the crop under confined conditions  No adverse effects on mortality, foraging activity, behaviour nectar- and pollen storage, over subvival, brood- and colony development (covering two complete brood cycles) after an application during full-bloom (BBCH 59-6) without bees present 2nd application during full-bloom (BBCH 54-65) and bees present 2nd application during full-bloom (BBCH 54	+ Propiconazo		application corresponding to 186 g	``
Fluopyram Trifloxystrobin SC 500 (250)  Fluopyram BBCH 59-61 Swithout bees present 2nd application during full-bloom BBCH 64-65) and bees present 2nd application during full-bloom BBCH 64-65) and bees present 2nd application corresponding to 146 g  Trifloxystrobin application corresponding to 146 g  Trifloxystrobin application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrobin a.s./ha into full-flowering application corresponding to 146 g  Trifloxystrob		chiring full-bloom and		
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Fluopyram Trifloxystrobin SC 500 (250)  BBCH 59-6 Without bees gresent 2nd application during full bloom BBCH 64-65) and bees gresent 2nd application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application during full bloom BBCH 64-65) and bees gresent 2nd application corresponding to 146 g application corres	. , ,			
Fluopyram Trifloxystrobin SC 500 (250 250)  BBCH 59-61 without bees present 2nd application during full-bloom BBCH 64-65) and bees present 2nd application during honey bees actively forwing on the crop under confined  Storage, direct survival, broad- and colony development (covering two complete broad cycles) after an application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering hazely a during honey bees actively forwing on the crop under confined	Č		activity, behaviour nectar- and pollen	
Trifloxystrobin SC 500 (250-250)  BBCH 59-61 without bees present 2nd application during full-bloom BBCH 59-65) and bees present 2nd application during full-bloom BBCH 59-65) and bees present 2nd application during full-bloom BBCH 59-65) and bees present 2nd application during full-bloom BBCH 59-65) and bees present 2nd application during full-bloom BBCH 59-65) and bees present 2nd application of the corp under confined (2012)  Complete brood cycles) after an application corresponding to 146 g  Thickness the corp of	a l	1: 4: X 1: C1	storage, cween survival, brood- and	
(BBCH-59-6) without bees present 2nd application corresponding to 146 g application during full bloom Phacelia during honey bees actively forwing on the crop under confined	riuopyrain	in minen Opre-flowering	colony development (covering two	
bees present 2nd appli- cation during full-bloom  (250-250)  BBCH 64-65) and bees  (and appli- cation during full-bloom  (BBCH 64-65) and bees  (and appli- cation during full-bloom  (BBCH 64-65) and bees  (and appli- cation during full-bloom  (bloom)  (cation during full-bloom)  (c		(BBCH 39-6 Nowithout)	compacte brood cycles) after an	
BBCH 6565) and bees foraging on the crop under confined	(250,050)	bees present appli-		
actions   victor	(2300230)	cation during full-bloom	Phacelia during honey bees actively	KCP 10.3.1.3/02
actions   victor	2	(BBCH 64) and bees	for a sure on the crop under confined	
	7	actorely foraging		

Bold values: Endpoints considered relevant for ask assessment

Based on an analysed active substance content of 50.8% [original 48 h - LD<sub>50</sub> - values: 186.7 (oral) and 200 (contact) be product/beel

### Risk assessment for bees

Table 10.3.1-3: Hazard quotients for bees – oral exposure

Compound	Oral LD <sub>50</sub> [µg a.s./bee]	Max. application rate [g a.s./ha]	Hazard quotient Qно	Trigger	A-faiori & acceptable risk for aduktbees
Trifloxystrobin	>107.8	150 a	<u>~</u> < 1.4	50	

<sup>&</sup>lt;sup>a</sup> maximum application rate (strawberries)

The hazard quotient for oral exposure is below the validated trigger value for higher tier testing (i.e.  $Q_{HO} < 50$ ).

Table 10.3.1-4: Hazard quotients for bees – contact exposing

Compound	Contact LD <sub>50</sub> [μg a.s./bee]		Hazard Autotient Quo	Trigger 🗸	A-priori acceptable risk Vor adult bees
Trifloxystrobin	>100	150 a	\$\tag{2}\tag{5}\tag{5}	W ~	

a maximum application rate (straw derries)

The hazard quotient for contact exposure is below the validated trigger value for higher tier testing (i.e.  $Q_{HC} < 50$ ).

# Further considerations for the risk assessment

In addition to acute laboratory studies with adult honey bees, trifloxystrobin was further subjected to chronic laboratory testing with adult loney bees.

This chronic study was designed as a funit test by exposing adult honey bees for 10 consecutive days to a concentration of nominally \$\tilde{\pi}0\$ mg trifloxystrobin a.s./kg in aqueous sugar solution. As trifloxystrobin is only very slightly soluble in water (\$\tilde{\pi}61\$ mg a.s./L at 25 °C), the test was conducted by using the formulated product Trifloxystrobin \$\tilde{\pi}G\$ 50. The nominal test concentration as such equals about \$200 \tilde{\tilde{\pi}}\$ water solubility of trifloxystrobin. No adverse lethal-, sub-lethal, behavioural or delayed effects were found by exposing adult honey bees for ten consecutive days exclusively to sugar solution, containing 120 ppm trifloxystrobin (nominal).

In order to reveal whether trifle systrobin poses a risk to immature honey bee life stages, a bee brood feeding study has been conducted by following the provisions/method of Oomen P.A., de Ruijter, A. & van der steen, S. (OEPP/EPPO Bulletin 22:613-616 (1992)), which require, amongst other parameters to "...use formulated products only... products are fed at a concentration recommended for high volume use...". The honey bee brood feeding test is a worst-case screening test, by feeding the honey bees directly in the hive with a treated sugar solution which contains the test substance at a concentration typically present in the spray tank (and as such at a very high concentration) and by



investigating the development of eggs, young and old larvae by employing digital photo imaging technology. The study was conducted with Trifloxystrobin WG 50 and the tested concentration corresponded to a typical high-volume use (actual test concentration of trifloxystrobin: 75 mg/s trifloxystrobin a.s./L). The administration of 1 litre sugar solution per colony, containing 75 ppm trifloxystrobin has neither resulted in adverse acute or chronic effects on adult honey bees not in adverse effects on immature honey bee life stages (eggs, young larvae, old larvae, pupae) or on the colony itself. Neither mortality of worker bees and pupae (as assessed via dead bee traps) nor the termination rate of eggs, young larvae and old larvae (as assessed via digital imaging of individual marked cells) was statistically significantly different from the untrasted control.

Moreover, two cage/tunnel studies were conducted with tritloxystrobin containing mixture formulations.

In a cage study, trifloxystrobin was applied via Trifloxystrobin + Propisonazole EQ 312.5 (187.5 125) at a rate corresponding to 186 g trifloxystrobin a.s./ha during honey bees actively foraging on the full flowering and highly bee attractive surrogate crop *Phacelin tandeetifolia*. This application rate has not resulted in adverse effects on mortality, foraging activity, behaviour, queen survival, brood- and colony development.

In a tunnel study, trifloxystrobin was applied via Fluoppram + Prifloxystrobia SC 500 (250+250) at a rate corresponding to nominally 140 gerifloxystrobia a.s. ha on the highly bee attractive surrogate crop *Phacelia tanacetifolia* during both, imminent pre-flowering and during full-bloom, respectively. The study comprises in total 6 tunnels in the test item treatment group: three replicate tunnels were exclusively used for plossom, nectar and pollen collection for subsequent residue analysis. Two sequential applications were conducted in the test item treatment group: The 1st test item application just at the beginning of the flowering period of the *Phacelia* crop at BBCH 59 - 61 without honey bees present followed by the 2nd test item application during full flowering of the *Phacelia*-crop (BBCH 64 - 65), with confined honey bees actively foraging on the crop during application.

Mortality, for aging activity and behaviour was assessed daily throughout the 11 days lasting confinement period (i.e. D'days before antil J days after the 2<sup>nd</sup> test item application; only in those colonies used for apidological assessments) including assessments of brood, food and colony strength - were performed 6 days before the 2<sup>nd</sup> test item application and 7 days after the 2<sup>nd</sup> test item application; after the colonies were released from confinement, colony assessments - including assessments of brood, food and colony strength - were continued on a monitoring site on day 14, 21, 28 and 42 after the 2<sup>nd</sup> test item application.

In the three tunnels which were exclusively used for residue-sample collection, blossoms were collected by and whereas honey bees were used as a sampling device for nectar and pollen. Residue samples were collected on the day of the 2<sup>nd</sup> test item application and on the following day. Collected foraget bees were immediately placed in their respective tunnels on dry ice after collection and the bees were kept deep frozen until nectar and pollen extraction from the bees; thereafter, the collected nectar and pollen was continued to be stored deep frozen until residue analysis.



In the three tunnels which were used exclusively for apidological assessments, effectively 145 g trifloxystrobin a.s./ha (1st test item application at BBCH 59 - 61 without honey bees present) and 146 g trifloxystrobin a.s./ha (2nd test item application at BBCH 64 - 65 with confined honey bees present) foraging on the crop during application) were applied; in the three tunnels which were exclusively used for residue-sample collection, the effective application rates were 144 and 143 g trifloxystrobin a.s./ha.

Considering the residue-analytical assessments, the analysis of nectar and pollen samples as collected on the day of the 2<sup>nd</sup> test item application (day 0) and on the following day (day 1) revealed a decline of trifloxystrobin-residues in nectar and pollen from day 0 to day 1 as well as within temporally consecutive samplings on a given day. The maximum measured trifloxystrobin-residue in pollen was 25 mg trifloxystrobin a.s./kg (0.74 ppm), the maximum measured trifloxystrobin-residue in pollen was 25 mg trifloxystrobin a.s./kg (25 ppm).

Considering the apidological assessments the study revealed to adverse effects on mortality, foraging activity, behaviour, nectar- and pollen storage, outen survival brood and colony development (covering two complete honey be brood cycles) after an application corresponding to 146 g trifloxystrobin a.s./ha into full-flowering *Phaoelia* during honey bees actively foraging on the crop under confined conditions.

# Synopsis

The calculated Hazard Quotients for triflexystroom are well below the validated trigger value which would indicate the need for a refined risk assessment on adverse effects on honey bee mortality are to be expected. This conclusion is confirmed by the results of the bee brood feeding study as well as by the results of the two semi-field studies, covering foliar application rates of up to 186 g trifloxystrobin a.s./ha.

Regarding potential side effects of trifloxystrobin residues in pectar and pollen on immature honey bee life stages as well as on colony development, the maximum actually measured trifloxystrobin-residue concentration in nectar and pollen in the highly bee attractive surrogate crop *Phacelia* (0.74 ppm and 25 ppm, see above) after two consecutive applications of about 150 g trifloxystrobin a.s./ha (i.e. at imminent pre-flowering and during first-bloom, respectively) was below both, the tested trifloxystrobin-concentration (15 ppm), which had not shown adverse/statistical significant effects on mortality of worker bees and supae nor adverse/statistically significant effects on the termination rate of eggs, young larvae and old larvae (as assessed via digital imaging of individually marked cells) in the bee brood feeding study on colony level; this maximum actually measured trifloxystrobin-residue concentration in nectar and collen was accomplished below the concentration which was tested without adverse effects in the chronic laboratory deeding study with adult honey bees (120 ppm).

In turn, those two consecutive applications of about 150 g trifloxystrobin a.s./ha (i.e. at imminent preflowering and during full-bloom, respectively) - with bees actively foraging during the 2<sup>nd</sup> application at full-bloom of the highly bee attractive surrogate crop *Phacelia* under confined and as such forced exposure conditions - were found not to cause adverse lethal, sub-lethal, behavioural and delayed effects as well as no adverse effects on brood- and colony development (covering two complete honey bee brood cycles).



Overall, it can be concluded that trifloxystrobin, when applied at the maximum envisaged application rate of 150 g a.s./ha even during the flowering period of a bee-attractive crop, does not pose an unacceptable risk to honey bees and honey bee colonies.

# **CP 10.3.1.1**

**CP 10.3.1.1.1 Acute oral toxicity to bees** 

Report:

Title:

Report No: Document No:

Guidelines:

Deviations:

GLP:

Effects of trifloxystrobin WG 50 W (Acute Contactand Oral) on Honey Bees (Apis mellifera L.) in the Laboratory 67561035
M-431974-01-1
DECD Guideline 213 and 214 (1998) lone
es (certified laboratory)

s study was to determine the deute contact and oral toxicity of triff
see (A. mellifera L.) is swas used as the toxic endpoint. Subfath-1 Objective:

The purpose of this study was to determine the soute contact and oral toxicity of trifloxystrobin WG

50 W to the honey bee (A mellifera L.) Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint. Subject of the bees was used as the toxic endpoint.

# Materials and methods:

Test item: Triffoxystrobin WG 50 W: triffoxystrobin CGA 6792020 50 % w/w (nominal), 49.8 % w/w (analytical), (Origin Batch No.: EDFL0 0509, Sample description: TOX09344-00; Specification No.: 102000007798 - 92; Martial No.: 05584493) 

Test organism: Honey bee Apis mellifer OL.), female worker bees, obtained from a healthy and queenright colony, bred by IBACON Collected on the morning of use.

Under laboratory conditions, *Apis mellifera* (50 worker bees per dose; 10 individuals in 5 replicates per test item dose level, controls and reference item doses) were exposed for 48 hours to a single dose of 100.0 μg/a.s. per bee by topical application (contact limit test) and to a single dose of 107.8 μg a.s. per bee by feeding (oral limit test; value based on the actual intake of the test item).

# Oral foxicity study

Aqueous stock colutions of the test tem and reference item were prepared in order to achieve the target concentration after being mixed with sugar syrup (ready-to-use syrup, sugar component: 30% sucrose, 31% glucose, 39% fructose) at a ratio of 1:1.

After mixing of these test or reference item solutions with ready-to-use sugar syrup, the final concentration of swear symp in the test and reference item solutions offered to the bees was 50 % (50 % aqueous test or reference item solution and 50 % syrup (w/w)). For the control, water and sugar syrup was used at the same ratio (50 % water and 50 % syrup (w/w)).

The treated food was offered in syringes, which were weighed before and after introduction into the cages (duration of uptake was 1 hour for the test item treatments). After a maximum of 1 hour, the

uptake was complete and the syringes containing the treated food were removed, weighed and replaced by ones containing fresh, untreated food.

The mean target dose levels (e.g. 100 µg a.s./bee nominal) would have been obtained if \*\*actly\*\* 20 mg/bee of the treated food were ingested. In practice, uptake of the treated agar solution different slightly from the nominal 20 mg/bee and results are given based on the measured consumption.

The test was conducted in darkness, temperature was 25°C and humidity between 57 and 3%.

Biological observations including mortality and behavioural changes were recorded at 48 hours after dosing. Results are based on measured concentrations of the a.s. per live

# Contact toxicity study

Contact toxicity study

A single 5 µL droplet of trifloxystrobin WG 50 W in an appropriate carries (acetone) was placed on the dorsal bee thorax.

For the control, one 5 µL droplet of tap water containing 5.5% adhäsit was used. The reference item was also applied in 5 µL tap water (dimethoate made up in tap water containing 0.5 % Adhasit).

A 5 μL droplet was chosen in deviation to the guideline recommendation of a μL droplet since a higher volume ensured a more reliable dispersion of the test item?

The test was conducted in darkness, temperature was 25% and Dumidity between \$7 and 83%. Biological observations, including mortality and behavioural changes were recorded at 4, 24 and 48 hours after application. Results are based on nominal concentrations of the product per bee.

The results can be considered as valid, as all validity criteria of the test were met: control mortality is < 10% in the oral and in the contact test, LD<sub>50</sub> (24%) of the toxic standard in the oral test equals 0.16 μg a.s./bee the LD (24 h) of the toxic standard in the contact test equals 0.14 μg/bee.

A summary of effects of the dest item on mortality and behavioural abnormalities of the bees is given

e Adhäsit was user

<sup>&</sup>lt;sup>4</sup> The Adhäsit was used to improve the adhesion of the droplet on the bee body. Adhäsit is non-toxic to honey bees.

### Table: Mortality and behavioural abnormalities of the bees in the contact toxicity test

						(//)
	afte	r 4 hours	after	24 hours	after	48 hours
dosage [μg a.s./bee]	mortality	behavioural abnormalities	mortality	behavioural abnormalities	mertality	behavioural abnormalities
	mean %	mean %	mean %	mean %	mean %	S means of
test item 100.0	0.0	0.0	0.0	0.0	0.0	0.0
water	0.0	0.0	0.0	0.00		Q 95 4
reference item						
0.30	6.0	30.0	90.0 。	2.0	© 98: <b>9</b>	
0.20	0.0	8.0	*		<b>\$</b> 2.0 (	0.0
0.15	2.0	14.0	~060.0~0	\$8.0 <u>1</u>	74.0 °	0.0
0.10	0.0	0.0	100	2.6	28.0	

0.10	0.0	0.00,000		~ <sup>2</sup> 0° ~	7 29.9	
results are average	results are averages from five replicates (cn bees each) per desage / control water = CO <sub>2</sub> /water treated control  Mortality and behavioural abnormalities of the bees in the oral toxicity test					
water = $CO_2$ /water	treated contro	ol 🖋 💇	~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			
						~
Mortality and beha	avioural ab <b>n</b>	rmalities of the	bees in the or	al toxicity test		¥
	efter	4 kgurs	©″ after	24 hours	A Gatter	48 hours
consumed		🐧 behavioural 🍰	modality (		m <b>ô</b> rjality	behavioural
dosage	mortality	autormannes		abrormalifies	morganity	abnormalities
[µg a.s./bee]	Ghean %	mean	mean	mean ®	mean %	mean %
test item	050		0,00		0.0	0.0
107.8					0.0	0.0
water	Ø <sub>0.0</sub> ≪	© 0.0 J	× 0.0	0.0	0.0	0.0
reference item				*46		
0.31	j2,0 >	48.0	~98.0 W	<u>\$</u> 2.0	100.0	0.0
0.16	2.0	\$\tilde{\pi}\)12.\tilde{\pi}\	50.0°	6.0	64.0	0.0
0.08			. 6.0 S	2.0	10.0	0.0
0.06	9.0 S	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\$\int_0.0 \text{\int}	0.0	0.0	0.0

results are averages from five replicates from bees each per dosage / control water = water/sugar treated control water = water/sugar treated control

# Observations,

Contact toxicity test?

At the end of the contact toxicity test (48 hours after application), there was no mortality at 100.0 usa.s./bee. Also no portality occurred in the control group (water + 5% Adhäsit). No induced behavioural effects were observed at any time.

# Oral toxicity test:

The maximum nominal test level of Trifloxystrobin WG 50 W (i.e. 100 µg a.s./bee) corresponded to an actual intake of 107.8 µg a.s./bee. This dose level led to no mortality after 48 hours. Also now mortality occurred in the control group. No induced behavioural effects were observed at any Gime

# **Conclusion:**

### Toxicity to Honey Bees; laboratory tests

Conclusion:	sts S S S S S S S S S S S S S S S S S S
Toxicity to Honey Bees; laboratory te	sts S S S S S S S S S S S S S S S S S S
Test Item	Trifloxystobin WG 50 W
Test object	Apis mellifera V O Q V
Application rate (µg a.s./bee)	10000 2 2 2 107.87
Exposure	(softwion in Adhäsit (0.5%)/water) (sugar solution)
LD <sub>50</sub> μg product/bee	>100.0 > 100.8

The toxicity of Trifloxystrobin Wo toxicity test on honey bees.

The LD<sub>50</sub> (48 h) value was > 100.0 µg a.s. Dee in the contact toxicity test. The LD<sub>50</sub> (48 h) value was 107. Sug a bee

# CP 10.3.1.1.2 Acute contact toxicity to

Please refer to Point 10.3.1.1.1

# Chronic toxicity to bees

was conducted with Trifloxystrobin WG 50, the corresponding A 10 de chronic orale toxición study 2 summary is filed under KCA, point 8.3

# CP 10.3.1.3 Effects on boney bee development and other honey bee life stages

A honey bee brood feeding stroy (Ochren et al.) has been conducted with the WG 50-formulation (Schmitzer, 2012, M-438966-Q1-1) and is included in the MCA document (see MCA 8.3.1.3/01).

### Sub-lethal effects **CP 10.3.1.4**

There is no particular study design / test guideline to assess "sub-lethal effects" in honey bees. However, in each suboratory study as well as in any higher-tier study, sub-lethal effects, if occurring, are described and reported.



### **CP 10.3.1.5** Cage and tunnel tests

Report:

Title:

Report No: Document No: Guidelines:

Deviations:

GLP:

### **Materials and methods:**

Assessment of side effects of CGA279202 + CGA64250 EC 312.5 (A-9524 B) on the lightey bee (Apis mellifera L.) under semi-field conditions 99106/01-BZEU M-050990-01-1 EPPO No. 170 (1992) None Yes (certified laboratory) The side effects of the test substance CGA279202 (Arifloxystrobin) + CGA64250 (=propiconazole) EC 312.5 (187.5 + 125; product code: A 9524 By were sested in the boney bee (Apris methylera L.) under semi-field conditions according to the guideline of the European and Mediterranean Flant Protection Organization No. 170(EPPOZ) 1992

The test substance CGA279202 + CGA64250 EC \$12.5 mas applied at an application at a fill of 1000 mL formulation/ha in 300 L water/hox, which corresponds to 366 g Fiflox strobin a.s./ha + 126 g propiconazole a.s./ha, based on the analysed content of both active Substances as given in the certificate of analysis.

Plots treated with drinking water sorved as control. As toxic standard Plostathion 400EC was applied at a rate of 0.6 L/ha in 300 L watet/ha.

The effects of the test substance were examined in small bee of lonies in cases placed over plots of flowering Phacelia tanagelifolia Bently The influence of CGA279202 \* CGA64250 EC 312.5 (A 9524 B) was evaluated by comparing the effect of the test substance treatment to the effect of the control and toxic standard treatment regarding the following observations:

- Mortality at the edge of the treated orea and in the bee traps.
- Foraging activity (number of forager bres/m² flowering Phaselia crop).
- Behaviour of the bees on the cop
- Development of the bee brook

The application of CGA279202 + CGA64250 EC 312.5 on flowering *Phacelia* did not result in an acute intoxication of adult bees. Comparing the average pre-application mortality and the average post-application interest post-application interest post-application in the test substance CGA279202 + CGA64250 EC \$12.5 treatment when compared to the control.

# Effects on koney bee flight intensity:

Shortly Defore application, an average of approximately 15 bees/m<sup>2</sup> were observed foraging in all plots. The application of CGA279202 + CGA64250 EC 312.5 did not cause a decrease of flight intensity compared to the average flight intensity in the control treatment on the day of test substance



application (average flight intensity in the CGA279202 - CGA64250EC312.5 treatment: 13.4 bees/m², and in the control treatment: 12.7 bees/m²). In the toxic standard treatment, the flight intensity dropped on a low level of 6.1 bees/m² on the day of test substance application. On the following evaluation days, no differences were observed concerning the flight intensity in the flowering *Phacelia* between the three treatments.

# Effects on honey bee brood development:

In the bee brood development, no abnormal difference which could be attributed to the influence of the test substance was observed between the test substance and control treatments.

# Behaviour of the bees:

No abnormal difference in behaviour of the bees was observed between the test substance treatments and the control treatments at any time during the period of assessment.

### **Conclusions:**

It was concluded that this study demonstrates that CGA279202 + CGA64250 EQ312.5 (product code: A 9524 B) did not have a harmful effect on honey bees when applied to a flowering crop of *Phacelia tanacetifolia* at an application rate of 1000 mL formulation/hain 3000 wate/ha.

Report: KCP 10.3.1.5402;

Title: Toxicity testing of the pyram + trifle ystrobin SC 500 (250 250) G on honey bees (Apis

me Ufera k.) under semi-frest conditions - Dinnel test -

Deviations; None

GLP: Yes (certified aborators)

# Materials and methods;

# Test Item:

Fluopyram + oriflox/strobin SC 500 (250+250) & fluopyram (AE C656948): 21.6 % w/w (252.4 g/L), trifloxystrobin (CGA 279202) 21.6 % w/w (252.2 g/L), (all values analytical), Batch ID.: 2011-002701 Sample Description: TOX09384-00: Material No.: 06033007, Specification No.: 102000012886 - 03, Tensity 1.169 g/mL 20 °C)

### Test Species:

Honey bees *Apis mellifere* carnica L.), small bee colonies were maintained according to normal beekeeping practice, containing 5 combs with honey, pollen and all brood stages present. The mean strength of the colonies per reatment group, six days before the 2<sup>nd</sup> test item application (prior to exposure to the test pem), was similar and ranged between 2280 and 2625 adult bees.

### Test Design:

The test was conducted under forced/confined exposure conditions (tunnel), in order to assess the potential effects of fluopyram + trifloxystrobin SC 500 (250+250) G on honey bees and honey bee

colonies. 12 tunnels (14 m length x 5.5 m width x 2.5 m height) were set up on a 40 m<sup>2</sup> plot of flowering Phacelia tanacetifolia (2 x 20 m²).

Six tunnels were treated with the test item:

- a) 1 x just at the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61), without honey bees produced in the beginning of the flowering period (at BBCH 59 61). 1st test item application) and, again,
- b) 1 x during full flowering of the crop (at BBCH 64 65), with honey bees actively foraging on crop during application (=  $2^{nd}$  test item application).

Three tunnels were concurrently to the 2<sup>nd</sup> test item application treated with tax water (controls) three tunnels were treated with a reference item (Perfekthion EC (BAS 32 110), 400 g/L dimethoate). respectively, during honey bees actively foraging on the crop.

The honey bee colonies were introduced into their respective tunnels 11 days before the 2nd test item application (during full flowering) and the corresponding applications in the control group and in the reference item group, respectively. One honey bee colony was used for tunnel.

Three of the six tunnels being treated with the text item were assigned for exclusively monitoring residues, collected by foraging hongy bees pollen and neotar) on the day of 2 test icom application as well as on the day following the 2 test item application.

The confined exposure phase of the honey bees incide the treated crop was 7 days following the 2nd test item application (during full flowering) and the corresponding applications in the control group and in the reference item group, respectively. The conditions of the colonies were examined until day 42 following the 2<sup>nd</sup> test item application.

The collected honey bees were dispatched deep-frozen to Bayer CropScience AG in Monheim, Germany, for further processing. The results were reported in a separate gudy at Bayer CropScience AG. The study number of the report is \$2319.4290-8. The analytical report is attached to this biological find report as Appendix II.

### Endpoints

Mortality and foraging activity (flight density) of the honey been were assessed before and after the  $2^{nd}$ application. Sub-lemal effects, with as changes in behaviour (e.g. intensive cleaning, dis-coordinated movement, exaggerate@motibly, aggressiveness, lethargy apathy, obvious symptoms of intoxication, etc.) were also montored Colony assessments (nestar stores, pollen stores, eggs, larvae, pupae, colony strength) were made 6 days before the 2nd application and at days 7, 14, 21, 28 and 42 following the 2<sup>nd</sup> test item application and the corresponding applications in the control group and in the reference item group, respectively

# Test Concentrations

- 1st application: 560 mil test item in 400 L water/ha (corresponding to nominally 140 g a.s. fluopyram/ha 140 a.s. to loxystrobin/ha), applied to the *Phacelia*-crop before flowering without hones bees present at BBCH 59 - 61).
- 2<sup>nd</sup> application: 560 m<sup>2</sup> test item in 400 L water/ha (corresponding to nominally 140 g a.s. fluopy@m/ha + 140 g a.s. trifloxystrobin/ha), applied during full flowering of the crop (BBCH 64 -65) when honey bees were actively foraging on the *Phacelia*-crop.

Reference Item (concurrently to the  $2^{nd}$  test item application):



1.5 L Perfekthion EC in 400 L tap water/ha (corresponding to 3.75 mL/L or 4.03 g/L), applied during honey bees actively foraging on the *Phacelia*-crop.

Control (concurrently to the 2nd test item application):

400 L tap water/ha, applied during honey bees actively foraging on the *Phacelia* crop.

### **Test Conditions:**

Natural field conditions. Weather conditions were good during both applications. The sky was a little cloudy but warm with no precipitation. First rain occurred following 2 days after the remainder of days after the 2<sup>nd</sup> test item application. The weather was variable but warm for the remainder of the trial.

### Statistics:

Statistical evaluation was done for mortality and the brood termination rates using Shapiro-Wilk's test (check for normal distribution), Levene's test (check for homogeneity of variance) Student's thest (pairwise). Software: TOX Rat Professional, Version 2, 10.05 ® Tox Rat Solutions CombH.

Dates of experimental apidological works:

Dates of experimental residue-analytical work:

August 18, 2017 to October 19, 2017 Margh 01, 2012 to March 28, 2017

### **Results:**

### **Mortality**

Starting conditions of the experiment were ideal, indicating similar natural mortality levels among the different treatment groups before the application during full flowering (no statistical significant difference of the colonies. Student t-test, pairwise comparison to the control, two-sided,  $\alpha=0.05$ ). On the day of the  $2^{nd}$  test item application and the corresponding applications in the control group and in the reference item group, respectively, mortality rates were slightly higher in the test item group (27.3) compared to the control (19.7), but the number of dead bees found on the day of application in the test open treated group was not statistically significantly increased compared to the control (Student t-test, pairwise comparison,  $\alpha=0.05$ ) one sided greater). Until the end of the confined exposure period, at each assessment day following the  $2^{nd}$  test item application and the corresponding applications in the control group and in the reference item group, respectively, the number of dead bees found in the control group. There was no statistical significant difference to the control group (Student t-test, pairwise comparison, one-sided greater,  $\alpha=0.05$ ) at any assessment day.

An overall comparison of the mean dead bees found in the traps and on the gauze after the full-flowering application from day 0 to day 7 and also not show a statistical significant difference between the control and the fluor fram + triflowstrobin SC 500 (250+250) G - treatment (Student t-test, pairwise comparison, one-sided greater,  $\alpha = 0.05$ ). A mean of 35.4 dead bees per day and tunnel was found for the period from day 0 to day 7 after treatment in the test item group, whereas a mean of 33.5 dead bees were found in the control group.

In contraction the observations in the test item treatment group and the control group, application of the reference item (dimethoate at a rate of 600 g a.s./ha) resulted in a markedly increased number of dead bees found in the traps and on the gauze strips in the crop between day 0 and day 4, which was statistically significant different from the control (Student t-test, pairwise comparison,  $\alpha = 0.05$ , one-

sided greater). Mortality increased up to ca. 24 x the levels of the control values on day 1 following the application.

# Foraging Activity

After the 2<sup>nd</sup> test item application of fluopyram + trifloxystrobin SC 500 (250+250) G, the foraging activity of the bees was comparable or even higher in the test item treatment group compared to the control group. An overall comparison of the mean flight activity did not show a statistical significant difference between the control and the test item treatment (Student thest, pair-wis@comparison to the control, one-sided smaller,  $\alpha = 0.05$ ).

In contrast, the application of the reference item dimethoate) resulted in a glear decrease of flight intensity until the end of the confined exposure period (day 7), which was statistically significantly lower compared to the control (Student t-test pairwise comparison one-sized smaller,  $\alpha = 0.05$ ).

### Behavioural Abnormalities

No behavioural abnormalities occurred in the fluoreram + inflow strobin SC the control group at any assessment day, respectively.

The reference item treatment caused behavioural abnormalities (moving abnormal cleaning) at least until the first day following application

# **Brood Assessment**

Over the entire assessment period of 42 days (i.e. over a period comprising two complete honey bee brood cycles) following the 2<sup>rd</sup> test tem application and the corresponding applications in the control group and in the recording foup, respectively, the proportions of the different brood stages (eggs, larvae, pupae) fluctuated according to a normal development pattern in the control and in test item treated group respectively. The Observed variability of different brood stages was typical and followed a matural pattern. The total number of brood cells (i.e. sum) of eggs + larvae + pupae) in the fluopyram + trifloxystrobin \$C 500 (250+250) G reatment group was not statistically significantly different to the control group at any assessment date. Overall, no adverse effects of the test item on honey bee brood have been observed throughout the study. All queens in the respective colonies of the three experimental groups were either directly observed during all colony assessments or at least a sufficient amount of freshly laid eggs was observed during the assessments, as a clear sign of the presence of a healthy queen.

### Strength of the Colonies

The mean number of honey bees per colony of all test item groups including the colonies to be used for residue analysis was very similar six days before application and did not differ statistically (mean of 2280 to 2025 per colonia. The subsequent development of the colony strength among the colonies in the control and test from treatment groups followed the same pattern. There was no statistical significant difference in the colony strength between the test item treated colonies and the control colonies at any assessment date. Overall, no adverse effects of the test item on colony strength and population development have been observed throughout the study.

### **Conclusions:**

In order to assess the risk of fluopyram + trifloxystrobin SC 500 (250+250) G to honey bees and honey bee colonies, honey bees were exposed under the realistic but severe (forced) exposure conditions of a semi-field test (confinement in gauze tunnels). The test item was applied two times applied to the times ap the highly bee attractive surrogate crop *Phacelia tanacetifolia*, the 1st test item application was conducted at BBCH 59 - 61, just at the beginning of the flowering period, without hone bees present. The 2<sup>nd</sup> test item application was conducted concurrently at a tap water control group and a reference item application (reference item group) during honey bees actively foraging on the full flowering Phacelia crop (BBCH 64 - 65). Both test item applications were conducted at a rate of 560 mL of fluopyram + trifloxystrobin SC 500 (250+250) G in 400 L water/ha (corresponding to nominally 140 g a.s. fluopyram/ha + 140 g a.s. trifloxystrobin/ha).

No adverse effects on mortality, foraging activity behaviour, hectar and pollen storage, brood-CP 10.3.1.6 Field tests with honeybees

Not necessary when considering the outcome of the risk assessment and the results of the lower-tiered studies. abundance and development, colony strength as well as on queen survival were observed Based on the results of this study, it can be concluded that fluory rand triffoxystrop in \$\infty\$ 500, (250+250) G

# CP 10.3.2 Effects on non-target arthropods other than bees

The risk assessment was performed according to Guidance Document on Terrestrial Ecotoxicology (SANCO/10329/2002) and to the Guidance Document on regulatory testing and risk assessment procedures for plant protection products with non-target arthropods (ESCORT 2, 2000<sup>5</sup>).

In the first Annex I listing process non-target arthropod data for two formulations of trifloxystrobits have been submitted and have been evaluated. The formulation TFS EC 125 (Twist) is no longer supported, but the available non-target arthropod data for this formulation are provided as supportive information in the two tables below followed by a table with the NTA data for TFS WG 50 (Flips) which is the representative formulation for the Amer I renewal.

Table 10.3.2- 1: Non-target arthropod studies for Prifloxystrobin EC 25 (Studies were submitted and evaluated during the first Antex I Jisting process.)

T		
Test species,	Tested Formulation, study	Egotoxicological Endpoint & & &
Dossier-file-No.,	type, exposure	Ecotoxical ogical Endpoint
reference		
Aphidius colemani	TFS EC 125Q	
M-052698-01-1	Laboratory, glass prates	Corr. Mortality[%] Effect on Reproduction [%]
Rep.No: 963577A	\$50 °√g a.s./ha	0 1/400 n/4 n/49.
,		
1997		
KCA 8.3.2/09		
Aphidius colemani	UFS EQIŽ5 🔑 🔍	
M-052721-01-1	Laboratory, class places	Core Mortality [% Effect on Reproduction [%]
Rep.No: 963577B	500) ga.s./ha	n.a.
,		
1997		
KCA 8.3.2/10 °		
Aphidius rhopalosiphi	TFS EC 123	
M-031787-01-1	Extended lab., exposure on	Corr Mortality [%] Effect on Reproduction [%]
Rep.Nos 983761	potted Parley plants	
, 1998	10 g @s./ha	20.3
, 1998 KCA 8.3.2/11	280 ga.s./ha	100 n.a.
	\$00 og a.s.ha	n.a.
Aphidius rhopalosiphi	Semantic of the Study, wonter of	
Rep.No: NOV-99-17	what application atom 012	
1999	wheat, application interval 13	Effect on Activity [%] Effect on Reproduction [%]
KCA 8.3.2/12	2 x 12.5 g a s./ha	30 -20.4 A
KCA 3.3.2/12	2 x 250 ga.s./hac	25 -10.2 A
Typhlodromus pyri	TPS EC. Q5	10.2
M-052259-01-1	Laboratory, extended tab.	
Rep.No: 97200	exposure on bean leaves	Corr. Mortality [%] Effect on Reproduction [%]
, 1997	250 @a.s./ha	74.1 35.3
KCA 8.3.2004	© 5000 g a.s./ha	92.9 n.a.
	- ( )	1

bet al.: Guidance document on regulatory testing and risk assessment procedures for plant protection products with non-target arthropods; ESCORT 2 workshop (European Standard Characteristics Of Non-Target Arthropod Regulatory Testing), Wageningen, NL, March 21-23, 2000, SETAC Europe; SETAC publication August 2001

Test species,	Tested Formulation, study	Ecotoxicological Endpoint		
Dossier-file-No.,	type, exposure	Q d		
reference				
Typhlodromus pyri	TFS EC 125			
M-051235-01-1	Laboratory, glass plates	Corr. Mortality [%] Effect on Reproduction [%]		
Rep.No: 3900063	10 g a.s./ha	-4.9 B -16.5 A		
,	250 g a.s./ha	3.7 <u>4</u> -6.6 <sup>A</sup>		
1998	500 g a.s./ha	12.4		
KCA 8.3.2/05	_			
Chrysoperla carnea	TFS EC 125	Eggs/ O S		
M-048976-01-1	Laboratory, glass plates	Corr. Mortality [%] female/day Hatering [6]		
Rep.No: 983760	Control	- 9.3 91.4 91.4 91.4 P		
, 2000	10 g a.s./ha	🔭 2.5 🦴 🐧 14.9% 🔎 94 <b>2</b> 9 💞		
KCA 8.3.2/21	250 g a.s./ha	0 15 0 15 0 15 0 15 16 0 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15 16 15		
	500 g a.s./ha	15.7 4 6.3 5 92.7		
Coccinella	TFS EC 125	Corr. Critile Eggs/ A 2°		
septempunctata	Laboratory, glass plates	Mortality [%] A Female Day Hateling [%]		
M-050382-01-1	Control 4	43.6		
Rep.No: 97-166-1008	250 ga.s.Mag	26,7 27.2 \$ 58.0		
1997				
KCA 8.3.2/15				
Coccinella	TFS EC 125 Q Q	Copr. Forthe Eggs		
septempunctata	Laboratory, glass plates	Morfality [20] Female/Day Hatching [%]		
M-050966-01-1	Control S	- S 5,4 43.6		
Rep.No: 97-174-1008	500° gas./ha	© 39.1 × 3,5 © 49.1		
1997				
KCA 8.3.2/16				
Poecilus cupreus	TFS EO 125 😂 🧠 🍒			
M-051762-01-1	Laboratory spray toposits on			
Rep.No: 963578A	quartz sand "	Corr. Mortality [%] If fect on Feeding rate [%]		
, 1997	250 📞 g a.s. Ja			
KCA 8.3.2/26				
Poecilus cupreus	TFS EC 1265			
M-051767*01-1	Laboratory, spray deposits on			
Rep.No; 963578B	quartz sand	Corresponding [%] Effect on Feeding rate [%]		
, 1997	500kg g & s./ha			
KCA 8.3.2/27		0' 2		
Aleochara bilineat@	THS EC 25			
M-049724-01-1	Laboratory, spray deposits on	) <sup>v</sup>		
Rep.No: 97-17 1008	quarto sand	Effect on Reproduction [%]		
1997	quanto sand	© 17.1		
KCA 8.3.2028		<b>*</b>		
Aleochara bilineata 🦽	TFS EC 125 S			
M-050424-01-1	Laboratory, Gpray deposits on			
Rep.No: 97-178-1008	quartz sand	Effect on Reproduction [%]		
1997	500 g a. Ma	9.0		
KCA 8.3.2/29				
		n the treatment than in the control.		
P: A negative value indic	ates a lower mortality rate in the	treatment than in the control.		
n.a.: not assessed				
A. O.	-			
Õ				

**Table 10.3.2- 2: New non-target arthropod study for Trifloxystrobin EC 125** (The study was not available during the first Annex I listing process and is provided here as additional information.)

Test species,	Tested Formulation, study	Ecotoxicological Endpoint
Dossier-file-No.,	type, exposure	7 .5"
reference		
Typhlodromus pyri	TFS EC 125	$LR_{50} > 500 \text{ g a.s./ha}$ ; $ER_{50} > 500 \text{ g a.s./ha}$
M-078388-01-1	Extended lab., exposure on	
Rep.No: B105TPE	detached cowpea leaves	Corr. Mortality [% Effect on Reproduction [%]
, 2003	4.7 g a.s./ha	
KCA 8.3.2.2/06	22.4 g a.s./ha	1.4 2 (0) 0 (11.3 (1) (2)
	106 g a.s./ha	35 2 2 2
	250 g a.s./ha	
	500 g a.s./h	27 × 27 × 27 × 27 × 27 × 27 × 27 × 27 ×

A: A negative value indicates a higher reproduction rate in the treatment than in the control

Table 10.3.2- 3: Trifloxystrobin WO 50 (corrent representative formulation), (Stories were submitted and evaluated during the first Annex 1 listing process.)

Test species,	Tested Formulation, study	Krotoxicologica Endpoint &
Dossier-file-No.,	type, exposure	
reference		
Aphidius colemani	TES WG 50 Laboratory, glass plates	LR <sub>50</sub> > 250 g a.s. Ana
M-034654-01-1	Laboratory, glass plates	
Rep.No: 963617A		Corr, MortaOty [% Effect on Reproduction [%]
	250 gas./ha	-25.8 <sup>A</sup>
.; 1997 🔊		
KCP 10.3.2.1/10		
Aphidius colemoni 🖇	TFS VG 50 C C C C C C C C C C C C C C C C C C	LR5 500 a.s./ha
M-034667-01-1	Laboratory@glass_plates	
Rep.No: 963617B		Corr. Mortality [%] Effect on Reproduction [%]
2.0	g a.s./ha	♥ <b>*</b> \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
C.; 1997		L L
KCP 10.3.2.1/11		O <sup>*</sup> 2
Typhlodromus pyr	JAS WESO O	LR <sub>50</sub> > 383 g a.s./ha
M-048971-01-1	Laboratory, glass plates	Cort Mortality [%] Effect on Reproduction [%]
Rep.No: 981048048	gars./ha	
1999	192 4 a.s./h@	$\mathcal{L}$ 2 19
KCP 10.3 2.1/03	© 383 ©g a.s. Fa	3 21
Typhlodromus pyri	TFS WG 50	LR <sub>50</sub> > 250 g a.s./ha
M-022704-01-1	Extended Lab., exposure on	
Rep.No: 963620A	detached bean leaves	Corr. Mortality [%] Effect on Reproduction [%]
, B.; 1997 @	250 g a. Tha	7.1 6.9
KCP 10.3.2.1/06		
Typhlodromas pyri J	TESWG 50	$LR_{50} > 500 \text{ g a.s./ha}$
M-032708 01-1	Extended Lab., exposure on	
Rep.No: 963620	detached bean leaves	Corr. Mortality [%] Effect on Reproduction [%]
B.; 1990 KCP 0.3.2 407	y 500 g a.s./ha	-1.2 <sup>B</sup> 5.2
KCP 0.3.2 007 0		

Test species,	Tested Formulation, study	Ecotoxicological Endpoint
Dossier-file-No.,	type, exposure	
reference		
Chrysoperla carnea	TFS WG 50	$LR_{50} > 383 \text{ g a.s./ha}$
M-048967-01-1	Laboratory, glass plates	Corr. Mortality [%] Eggs/Famale Hatching [%]
Rep.No: 98 10 48 049	Control	- 230.1 64
1999	31 g a.s./ha	4 230.8 63
KCP 10.3.2.1/02	192 g a.s./ha	4 79.9 59 59
	383 g a.s./ha	222.1 5 5 V
Coccinella	TFS WG 50	LR <sub>50</sub> > 250 g a.s./hgQ
septempunctata	Laboratory, glass plates	Fertile Eggs Q Q
M-034674-01-1	1st	Fertile Eggs Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q
Rep.No: 97-175-1008	1 <sup>st</sup> test:	
.; 1997	Control g a.s./ha	0 20 2 4 2 43.6 3
KCP 10.3.2.1/12	250 g a.s./ha\(\frac{1}{2}\)	3.8 7 48.9
	Control	115 not Eporte
	250	2.13
Coccinella	TFS WG 50 g(a.s./ha~)	LK50 > 500 g a.s. ha
septempunctata	Laboratory, glass plates	Corr. Pertile Eggs/
M-034677-01-1	1 <sup>st</sup> test:	Mortality [%] Female Day Hatching [%]
Rep.No: 97-176-1008	Control &	5.4.0 × 43.6
.; 1997	5000 a.s./h	7.8 % 67.6
KCP 10.3.2.1/13	2 <sup>nd</sup> test:	
1101 10.3.2.1713	Control O A	o - 🐣 🏋 🎜 🗞 not reported
	500 ga.s./ha	8.7\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Poecilus cupreus	TFS WG 50	2R <sub>50</sub> > 250 g acs./ha
M-032697-01-1	Laboratory, spray deposits on	
Rep.No: 963618A	quartz sand 💸 🧳 🍣	Cour. Mortality [% Effect on Feeding rate [%]
, M.; 1997	250 4g/a.s./ha	2.3
KCP 10.3.2.1/04		
Poecilus cuprens	TFS VOG 50 O W	LR <sub>50</sub> 500 gar.s./ha
M-032701-01-1	Laboratory spray deposits on	
Rep.No: 963618B	quartz sand 💮 "	Corr. Mortality [%] Effect on Feeding rate [%]
, M. (1997	© \$500 & g a.s./ha	1.1
KCP 10.3.2.1/05		L D
Orius laevigatus	Laboratory, glass plates	LP < 250 g a.s./ha
M-032718-01-1	Laboratory, glass plates	Forr. Mortality [%]
Rep.No: 963619A	TFS WG 50 Laboratory, glass plates 250 gas./ha	2 100
		100
, <u>G</u> ., 1997		X 1
KCP 10.3 201/08	TFS WG 50 Laboratory, glass plates 250 gas./ha TFS WG 50 Laboratory, glass plates	T.D. < 500 //
Orius laevigatus M-032/25-01-1	I - L - L - L - L - L - L - L - L - L -	$LR_{50} < 500 \text{ g a.s./ha}$
M-032725-01-1	Laboratory, grass prates	Com Montolity [9/]
Kep.140. 903019B	1500 Quantity	Corr. Mortality [%] 100
C 1007	g a.Sha	100
KCD 10 2 2 1990		
KCP 10.3.2.4009 5		
Rep.No: 963619B  , C., 1997  KCP 10.3.2, 1999		
	<b>)</b>	
	W. Carlotte and the control of the c	
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$\bigcirc$		



Test species,	Tested Formulation, study	Ecotoxicological Endpoint
Dossier-file-No.,	type, exposure	
reference	type, enposure	
Orius laevigatus	TFS WG 50	LR <sub>50</sub> 21.6 g a.s./ha
M-048955-01-1	Extended lab., spray deposits	Corr. Effect on Effect on Mortality [%] Fecundity [%] Fertility [%]
Rep.No: 2003647	on detached bean leaves	Mortality [%] Fecundity [%] Fertility [%]
, B.; 2000	6 g a.s./ha	4.3 49.8° -0.1 4
KCP 10.3.2.1/01	13 g a.s./ha	27.7 \$\sum_{-7.4}^{\infty} \cdot   \qquad  \qquad \qqq \qq           \qua
10.5.2.1/01	25 g a.s./ha	
	51 g a.s./ha	66.0 n.a. n.a. n.a. n.a. 95.7 n.a. n.a. n.a. n.a. n.a. n.a. n.a. n.
	102 g a.s./ha	87.2 n.a. 2 Q. n.a. 4
	204 g a.s./ha	95.7 • n.a. • n.
	407 g a.s./ha	95.7 ° n.a.
	814 g a.s./ha	. 100 % , on a
	Aged Resi	95.7 n.a. (n.a. (n
Coccinella	TFS WG 50	
septempunctata	Aged residues, spray deposits	
M-048983-01-1	on potted grapeving plants	
Rep.No: 1047.074.375	under semi-field anditions,	
. M.; 2000	3 appl. of 38 or \$92 g & s./ha	
KCP 10.3.2.1/14	(2 test rates) Interval 010-14d	
		Tertile Y
	Control V	Corr. Mortality [%] Eggs/Feragle/Day, Hatching [%]
	Residues aged for 0 deces:	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
	Residues aged for 14 days:	0 - × × × 9.3 © 93.3
	Residues aged for & days	\$\int_{\infty} \sqrt{\sqrt{\gamma}} 9.5 \times 91
	3 3 38 g.a.s./ha	93.3 91 13.0 4.6 6.6 89.2 11.1 87.9
A	Residues aged for 0 days:	\$\times_13.0 \times_\times_223 \times_78.2
	Residues aged for 14 days:	4.6 0 6.6 89.2 -66 87.9
	Residues aged for 28 days:	-63 0.0 87.2 -13 0.2 4 3 80 3
	3 x 192 g a.s./ha	
	Residues aged for 0 days:	4.3
	Residues aged for 14 days:	4.3 80.3 22.0 7.1 82 0.0 7.1 82 12.1 83.5
	Residues aged for 28 days	12.1 83.5
		13.0 4.3 80.3 7.1 82 9.0 12.1 83.5
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<i>O1</i> . (		
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		) <sup>*</sup>
<b>*</b>		
<b>~</b>		
	A D	
	Residues aged for 14 days, Residues aged for 18	
Č.		

T	T-4-1 F1-4'4-1-	E 4		1
Test species,	Tested Formulation, study	Ecotoxicolo	ogical Endpoint	0
Dossier-file-No.,	type, exposure			
reference		<u> </u>		
Orius laevigatus	TFS WG 50		<b>*</b>	
M-031775-01-1	Semi-field study with aged		Ş	
Rep.No: 983624	residues, spray deposits on		10	
M. P.; 1998	potted grapevine plants, 6		Ą	
KCP 10.3.2.1/15	appl., interval: 7-10 d, 2 appl.	₽a		
	rates (15.1 and 189 g a.s./ha)	N	Iortality [🎳 🔰 🛮 Eggs/	/Female/Day 🕡
	Control	0DAT6:	82.0 <del>.</del> Q	Ø.1 💸 🛫
		1 <b>43</b> AT6:	220	~7.9 Q 6 6 4
		<b>₫</b> 0DAT6:		´6.2; ´ Ů
		<b>)</b> "		Female/Day 29-1 7-1 7-1 7-1 7-1 7-1 7-1 7-1 7-1 7-1 7
	6 x 15.1 g a.s./ˌha ♥	0DAT6: 🎺	66.0	<b>3</b> .7 , V , S
		1490AT6;	55.0 × .0	7.5
		30DAT6.	<b>2</b> .0 % 6'	5.9 🗐 🔞
		, Q	Q , Q	
	6 x 189	0DAT6: 2	27.0 5 6200 5 6200 5 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7	✓n.a. 77.0 ✓
		14DAT6:	6,200 6,5	7.0 ~ 1
		30DATO:	Y.0 D &	5.00
				Fecundity [%]
	Q b Q	Com. Morts	THIN I WORK TO MITCH OF	Fecundity [%]
	6 <b>©</b> 15.1, 🗸 g a.s. 🏗	QDAT6:	$^{\prime\prime}$ -889 $^{\prime\prime}$ B (invalid) $^{\circ}$	9.8%
		14DAT6:	20° 4223	5. <b>D</b>
		30D <b>⋒</b> T6:	₩ _43B . ©	, €4.8
				J
	6 189 g a.s ha	ØØAT6∺	94.4 (invalid)	n.a.
		14DA 16:	543	11.4
Ô	* . * \$ . Q \$	30D Т6:	©.3 <b>√</b>	17.7
Typhlodromus pyric Kampimodromu	Field	Studies 💍	/ L, _0	
Typhlodromus pyr	NFS WG 50 6 ~	No sigmica	ant effects on in-field a	and off-field predatory
Kampimodromy	Field study in Ineyar 0, 6	mite popula		
aberrans 8	applications at 2 application		Max in-field rate	3m drift rate
(predatory maes)	rates: max in-field and 300	Abbott effe	ct 👸 [%]	[%]
M-048963-01-1	drift rate (7.5% max. rate), 8-	© DA∏V	0.6	1.2
Rep.No. 983824	13 danterval	7 DATÍ	-29.9 E	-1 <sup>E</sup>
M.P.; 1990	Max in-field application rate	10 <b>№</b> AT2 <sup>2</sup>	34.3	34.3
KCP 10.3.2.4/01	(per application)	7 BAT3	31.1	13.7
	© 50, 2 76, 3 0 101, 4 126,	Ø1 DA®	-2.1 <sup>E</sup>	-34.5 <sup>E</sup>
	P5 <sup>th</sup> 15© and 6 <sup>th</sup> 189 & Q.s./ha	7 DA 6	-14.3 <sup>E</sup>	-19.9 <sup>E</sup>
. ~ ~	5th 150 and 6th 189 g as./ha	30 DAT6	26.2	36.5
		5 DAT6	7	19.1
Anthocous sp.	FFS WQ 50	No significa	ant effects by ANOVA	
(predatory bugs)	2 field studies in pear	1	·	
M-066641-01-1	orebards, 4 appl. @75 g			
Rep.No:	a.S./ha, 506 d spray interval;		Study 1: Mean no.	Study 2: Mean no.
20020123193SF046	sampling by knocking		nymphs adults	nymphs adults
GEP O	1 Dest 2	Control	14.8 2.3	14.8 0.8
.; 2002		75 g a.s./ha		13.5 1.3
KCP 10.3.2.4/02	O D '			
	7 DATH	Control	3.8 11.5	0.0 2.0
	V ≪ 1 <sup>3</sup> V	75 g a.s./ha		0.3 1.8

A: A negative value indicates a higher reproduction rate in the treatment than in the control.

B: A negative value indicates a lower mortality rate in the treatment than in the control.

C: A negative value indicates a higher fecundity in the treatment than in the control.

# Tier 1 in-field risk assessment for other non-target arthropods

Table 10.3.2- 4: Tier 1 in-field risk assessment for non-target arthropods

E: A negative value DAT: days after the	D: A negative value indicates a higher fertility in the treatment than in the control.  E: A negative value indicates a higher abundance in the treatment than in the control.  DAT: days after treatment n.a.: not assessed  Tier 1 in-field risk assessment for other non-target arthropods  Table 10.3.2- 4: Tier 1 in-field risk assessment for non-target arthropods  Crop Species Appl. rate MAN LRss HQ Trigger [g a.s./ha] [g a.s./ha] [g a.s./ha] [g a.s./ha] .  Orchards T. pyri 75 2.3 383 0.5 2 0.5 0.7 2 0.7 0.7 2 0.7 0.7 2 0.7 0.7 2 0.7 0.7 2 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7 0.7							
Tier 1 in-field	risk assessment fo	r other non-target arthropods						
Table 10.3.2- 4	4: Tier 1 in-field	risk assessment for non-target arthropods						
Crop	Species	Appl. rate MAY LR <sub>50</sub> HQ Trigger [g a.s./ha] [g a.s./ha]						
Orchards	T. pyri	75 02.3 383 0 0.5 02 0						
(early)	A. rhopalosiphi	75 2.3 · 0500 · 0.3 · 2 · 0.3						
Orchards	T. pyri	112.5 383 0.7 2	***					
(late)	A. rhopalosiphi							
Strawberries	T. pyri	1507 2 383 4 99 2 8						
	A. rhopalosiphi	500 500 500 500.5						
Grapes (late)	T. pyri		) ·					
	A. rhopalosiphi	0 125 2.3 500 0 0 2						

Table 10.3.2- 5: Tier 1 off-field risk assessment for non-target arthropods

Crop	Species	Appl.	<b>M</b> AF	Drift	VDF	Correction	$LR_{50}$	HQ	Trigger
		rate [g/ha]②		* [%]© &		factor **	[g/ <b>ba</b> ]		
Orchards	T. pyri 🚜 "	r 75€	<b>8</b> 3	<b>29</b> .96 °	©10 k	10	<b>383</b>	0.11	2
(early)	A. rhogalosipho	\$\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2	, 2.3 A	\$23.9 <b>6</b>	> 10 ○		<sup>3</sup> 500	0.08	2
Orchards	T. pred	312.5	<sup>2</sup> 2.3 <sup>∞</sup>	11.00	100	10	383	0.07	2
(late)	A Dhopal Diphi	¥112.5	2.3/	11,01	<b>P</b> 0	10	500	0.06	2
Strawberries	Æpyri 🄊	130	J.7	<b>2</b> .38	10 🔏	y 10 <sup>y</sup>	383	0.02	2
	A. rhogalosipp	₩0 🖔	√1.7 Ø		10	<i>@1</i> 0	500	0.01	2
Grapes (late)	T. pyri	ا 125 م	237	6.00°	10	<b>ॐ</b> 10	383	0.05	2
	A. rhopalosiphi		2.3	6.9	J0 ^	10	500	0.04	2

The tier 1 in-field and off-tield risk assessment does not trigger a concern. Nevertheless, a tier 2 risk potential concerns due to the observed sensitivity of Orius laevigatus.

Exposure assessment for in-field assessment

Crop / no. of applications Appl. rate Age a.s./ha	MAF	in-field PEC <sub>max</sub> . [g a.s./ha]
Orchards (carry) / 36 75	2.3	173
Orchards (34te) / 35	2.3	259
Strawberries / 25 150	1.7	255
Grapes 73 0 2 125	2.3	288

Table 10.3.2- 7: Tier 2 risk assessment for terrestrial non-target arthropods for the in-field scenario

Crop	Species	In-field PEC <sub>max</sub>	LR50	Risk acceptable if	Refined risk
		[g/ha]	[g/ha]		asse@ment required
Orchards	T. pyri	173	>500	Effects are < 50%	Necy Necy Ne
(early)	A. colemani		>500	Effects are < 50%	NO X
	C. carnea		<b>29</b> 83	Effects are < 50%	i No Si
	C. septempunctata		500	Effects are < 50%	No 🍪
	O. laevigatus		<i>≨</i> 21.6	Effects are < 55%	Q Yes 4
Orchards	T. pyri	259 🔬	>500	© Effects are <50%	· NO C
(late)	A. colemani	Q	>500 ~	Effects are \$50%	⊗No Ø
	C. carnea		。>383@*	Effects are < 50%	No No
	C. septempunctata	<b>%</b>	>500	LEffects are < 50%	No
	O. laevigatus		2Û.6	© Effects are < 90% _	Y Yes C°
Strawberries	T. pyri		500	Effects are 50%	⊗No @″
	A. colemani		>5000	Effects are < 50%	No
	C. carnea		>38%	Effects are < 50%	YO YO
	C. septempunctata		<b>\$500</b> @	Effects are \$50%	⊗No
				Effects are < 50%	ôYes
Grapes	T. pyri	\$\times 288\tilde{\pi}	>500	Effects are < 50%	No No
	A. colemani	\ \sigma_{\infty} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	>500	Effects are < 00%	✓ No
	C. carnea 🖑 🐧		>383 🗸	Effects are 50%	No
	C. septempunctata		>500	Affects and < 50%	No
	O. laevigatus 🧃			Effects are <50%	Yes

The results of the ties 2 in-field risk assessments indicate no concern for nor target arthropod species with sensitivity like Typhtodromus, Aptudius, Chrysoperla art Coccinellatout initial effects in the infield area on non-target arthropod species with sensitivity like Quius are to be expected. Therefore, a further evaluation is required.

# Refined in-field risk assessment for Orius laevigatus

The tier 2 risk assessment indicates that initial effects on *Orius laevigatus* are to be expected To demonstrate the potential for recovery an aged residue study has been conducted under semi-field conditions (1998; reference KCP 10.3.2.4/01). In this study the product was applied 6 times to potted grapevines at rates of 15 and 187.5 g a.s./ha at intervals of 7-10 days. O. lagvigatus was exposed to dried residues on leaves at three timings: just after the last treatment (a total of 6 having been applied), 14 and 30 days after the last application. Results from the first bioassay (exposure just after the last application) are considered inconclusive due to excessive mortality (i.e. \$2%) in the control. However data from the second bioassay where residues aged 14 days were assessed. indicated that there was a significant increase in mortality compared to the control from both, the 15 and 6 × 187.5 g a.s./ha treatments. This, however, did onot cause a significant effect on the reproductive capacity of O. laevigatus. In the third booassay (exposure 30 days after last application), there was no effect of both, the 15 and 187.5 g @s./ha @eatments on either survival or reproductive capacity. These data indicate that whilst Trifloxystrobin WGO may initially cause an impact on O. laevigatus, the residual toxicity is transient and potential for recovery can be expected within Pmonth after the last application. The maximum applied rate of 6 × 1875 g as 7/ha as rester in the semi-field study clearly exceeds the maximum intended use pattern of 2×150 Qa.s./ha in Strawberries, 3 ×125 g a.s./ha in grapes, or 112.5 g a.s./ha in orchards.

In addition to the aged residue study conducted with TFS WG 50 on the most sensitive species Orius laevigatus, several aged residue studies have been performed on the same species with different formulations containing triffoxystrobin (Table 10.3.2-8). Table 10.3.2-8 and Table 10.3.2-9 show how much trifloxystrobin was applied in these studies. The rates of trifloxystrobin used exceed or are close to the worst-case in-field PEC max of 288 (g a.s./ha (2.5 x 125 g a.s./ha) for the intended application of OFFS WG 50.

Table 10.3.2-8: Additional aged residue studies for *Orius laevigatus* 

Test species,	Tested Formulation, study	Ecotoxicological l	Endpoint	
Dossier-file-No.	type, exposure based on the			
Reference	amount of TFS in the		<b>*</b>	. V
	products			
Orius laevigatus	CCZ + TFS SC 535		, v	
M-103354-01-1	Aged residues, spray deposits			o" <i>6</i> 7 .
Rep.No: 031048084	on grape-vine plants,	ĈA		
, 2003	1 appl. of 1 L prod./ha	Corrected	Reduction in Reduction	Koduction in
KCP 10.3.2.2/02	(368 g TFS/ha)	Mortality [%]	Fecundity [%]	Fertility [%]
RC1 10.3.2.2/02	Residues aged for 0 d:	96.2	n.a.O	
	Residues aged for 14 d:	70.8	o na	n.a.
	Residues aged for 35 d:	10.0	0° 6.8	\$ 14.9°
Orius laevigatus				
M-398645-01-1	IPD + TFS SC 272.4 Aged residue spray deposits on maize plants,			4
Rep. no: 10 10 48 037 A	on maize plants			~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
, 2011	2 appl. of 17.0 L prod./ha			
KCP 10.3.2.2/03	(2 x 270 g TFS/62),	Corrected	Reduction in	○Reduction in
KCF 10.3.2.2/03	spray interval of 14 d	Mortal My [%]	Fecundit [%]	Fertility [%]
	Residues aged for Q.J.	Corrected Mortality [%]  89.8	The man and the same of the sa	n.a.
	Residues a ged for 14 d:	801.	9.5 9.5	n.a.
	Residues aged for 28 d	09.1	0 5	16.7
	Residences aged for 42 d:		2.30	19.7
Oving lagginatus			<del>\( \frac{2.5\circ}{\chi_2} \) \( \frac{2.5\circ}{\chi_2} \)</del>	19.7
Orius laevigatus M-297471-01-1	FLUTTFSSC 5000			
Rep.No: 07 10 48 005 A	on grape vine plants,			
, M., 2008	2 approvof 0.82 prod Da			
	2 approvoi 0.00 produta	Corrected	Dadisa in	Reduction in
KCP 10.3.2.2/04	2 appt of 0.80 prod Qa (2 x 9797 g Tr S/ha);	Corrected (	Reduction in	
	spray interval 7600 Pesidues aged for 0 d	069	Fecundity [%]	Fertility [%]
Ď »	residues aged for 7 d	7 907	n.a.	n.a.
~ ~ ~	residues aged for 14 d	06.7 \$1.0	n.a.	n.a.
	residues aged for 21 d	7.0	n.a. 2.9	n.a. -1.8 <sup>C</sup>
S.Q	residues aged for 21 d		-5.6 <sup>B</sup>	-1.8 -2.1 <sup>C</sup>
Oniver la Stanton	1,1001000		-3.0	-2.1
Orius laggigatus	PTZÓ TFS SC 325			
M-001111-01-1	Aged residues spray deposits	& 3'		
Rep.No: 20031276/0	on maize plants;	0'		
NEOr Q	2 apple of 1 L prod./ha		D 1 .: :	D 1 .: .
., 2004 ( )	(157 TFS Ca),	Corrected	Reduction in	Reduction in
KCP 10.3.2.27®	spray interval 14 dv	Mortality [%]	Fecundity [%]	Fertility [%]
	residuos arged (2)	© 82.9	n.a.	n.a.
#Ø*.	residues aged or 14 d	62.6	n.a.	n.a.
	residues aged for 26 d:	23.7	7	1.1
	residues aged for 42 d:	-4.4 <sup>A</sup>	n.a.	n.a.
A negative value indicate	som lower mortality rate in the tre	eatment than in the co	ontrol.	
B A negative value indicat	es a higher fectuality in the treat	ment than in the cor	ntrol.	
A negative value indicate	es a higher fectindity in the treatment is a before featibility in the treatment in the treatment is a before featibility in the treatment in	nt than in the control		
	Ö Ö			
	The state of the s			
Ö				
Ŭ <sup>-</sup>				

Table 10.3.2-9: Additional studies for terrestrial non-target arthropods

Formulation	Trifloxystrobin [g a.s./ha]	DAT of last bioassay with corr. mortality > 50%	DAT until effects < 50%
Study with representativ	e formulation		
TFS WG 50	6 x 189	14 (51.3%)	
Studies whose applicatio	n rates cover all AIR3 use	s &	
TFS + CCZ SC 535	1 x 367.9	14 (70.8%)	10 10 10 10 10 10 10 10 10 10 10 10 10 1
<b>TFS + IPD SC 272.4</b>	2 x 270.3	14 (89.1%)	Q 28 0 0
TFS + FLU SC 500	2 x 196.6	° 14 \$1.9%	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
TFS + PTZ SC 325	2 x 156.7	£ (62.6%)	© 428 A

DAT: days after last treatment

TFS: trifloxystrobin, CCZ: cyproconazole, IPD: inrotione, TVU: flyopyram PTZ: prothioconazole,

Initial adverse effects with mortality exceeding 50% in bioassays up to 14 days after application indicate that O. laevigatus is indeed sensitive to formulations containing triboxystrobin. After 21 – 35 days, corrected mortality was below 50% in all studies 0.2 to 23.7%. No study showed adverse effects on reproduction. These results closely match the findings of the agod residue study with the straight trifloxystrobin formulation TFS WG 50 (no effects > 50% 50 days after application). Under the conservative assumption that all adverse effects observed in these studies with mixture products are attributed to trifloxystrobin, the potential for occovery for the most sensitive species O. laevigatus is given within three to five weeks. This confirms the conclusion that the potential for recovery is given and no unacceptable in field risk has to be expected for non-target arthropods from the use of TFS WG 50 according to the proposed use pattern.

Tier 2 off-field exposure assessment for other non-target arthropods

Table 10.3.2- 10 Exposure assessment for off-field risk assessment (Tier 2)

Appl. rate   N	MØAF   DA	ft Veg. dr	str. Correction	n off-field PEC <sub>max</sub>	Remark				
[g a.s./ha]	Q   4%	facto	r factor	🏷 [g a.s./ha]					
Orchards (early)									
75	2.3 23.9	3 Q 10	5 /	≥ 20.7	in case of 2-D study design				
.// ·	Orchards (late)								
1125	2.3	15 30		14.2	in case of 2-D study design				
Ů	112.5         2.3         \$\forall 1.01 \rightarrow\$ \rightarrow\$ \rightarrow\$         14.2         in case of 2-D study design           150         1.6         2.38         10         5         3.0         in case of 2-D study design								
150	1238	100	§ Q 5	3.0	in case of 2-D study design				
			Grapes	(late)					
125	2.3 6.9	<u>0</u> 10	<b>S</b> 5	9.9	in case of 2-D study design				
125									

Table 10.3.2-11: Risk assessment for terrestrial non-target arthropods for the off-field scenario

						<i>Q</i> }_
Crop	Species	Study	Off-field	$LR_{50}$	Risk acceptable if	Refined
		design	PEC <sub>max</sub>	[g/ha]		risk
			[g/ha]		The state of the s	risk assessment
			10 1		Ş	required
Orchards	T. pyri	2D	20.7	>500	Effects are < 50%	S NO
(early)	A. colemani	2D		>500	Effects are < 50%	) , <b>N</b> Ø «
	C. carnea	2D		♦ >383	Effects are < 50%	No S
	C. septempunctata	2D	<b>N</b>	>500	Effects are < 5%	Now Now
	O. laevigatus	2D	4	21.6	DEffects are 🗐 0%	No 9
Orchards	T. pyri	2D	14.2,4	>5000	Effects arg 50%	O NO O
(late)	A. colemani	2D		>500 *	Fifects are < 50%	No 🔊
	C. carnea	2D		<b>≥®8</b> 3	Effectsare ≤50%	√ No♥
	C. septempunctata	2D		~ <sup>2</sup> 500 £	Effects are \$50%	" No
	O. laevigatus	2D		© 21.60°	Effects are 50%	ANO C°
Strawberries	T. pyri	2D,		>500	Effects@re < 50%	No o No
	A. colemani	2 <b>.</b>		<b>3</b> 00	Effects are \\$0%	N
	C. carnea	2 D		×383, O	Effects are 50%	<b>7 150</b> 0
	C. septempunctata	l∂ŽD ≪		>500	Effects are < 50%	∂ No
	O. laevigatus	√ 2D °		21,6	Effects are < 50%	√ No
Grapes	T. pyri	2 <b>©</b>	<b>Q</b> 9.9 <b>Q</b>	_ <b>6</b> 500 √	Effects are \$\frac{90\%}{}	<sup>™</sup> No
	A. colemani			~500Q"	Effects ar 50%	No
	C. carnea 🗸 🐧	, "2D 🔊		>383	s Effects are < 50%	No
	C. septempunctata	2D 2 2D 2 2D	V O	>300 ♠	Æffects/are < \$0%	No
	O. laevigatus	290		21.6 ×	Effects are 50%	No

The tier 2 off-field risk assessment indicates that no unacceptable adverse effects on non-target arthropods in the off-field area are to be expected from the use of FFS WG 50.

Based on the presented data and risk assessment it can be concluded that the use of Trifloxystrobin The people adverse eff of non-target arthropods

10.3.2.2 Extended laboratory testing, aged residue studies with non-target arthropods

1. The people adverse eff of non-targe WG 50 according to the intermed use pattern does not result in macceptable adverse effects on non-

Report: KCP 10.3.2.2/02, M. 2003

Toxicity of Trifloxystrobin & Cyproconazole SC 535 to the predatory bug *Orius laevigatus* Title:

(Fieber) (Heteroptera: Anthocoridae) under extended laboratory conditions using semi-field-

aged residues on grape-vine.

031048084 Report No:

Document No: M-103354-01-1
Guidelines: IOBC Guideline (Bakker et al. 2000), modified
Deviations: None
GLP: Yes (certified laboratory)

Objective:

The purpose of this study was to determine the effects of fresh and agent residues of the test item on the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the predatory bug Frius Idevigatus (EFFRER) under out of the survival and reproduction of the survival and su the survival and reproduction of the predatory bug *Crius laevigatus* (FCEBER) under extended laboratory conditions using semi-field aged residues.

Materials and methods:

Fresh and aged residues of the test item Sphere 536 SC (26.04 g/L Coproconazole & 367.90 g/L

Trifloxystrobin; specification: Article No.: 0005907403, Batch; 08140/0034(0032), OX No.: 6387-00) were tested under extended aboratory conditions on the predatory bug Origs laevigatus after contact exposure on lear discs prepared from sem field prayed grape vine with aged residues. Endpoints were the mortality of exposed nymphs and the reproductive performance of adult bugs compared to control after exposure on also 0. 13 and 35 after application. Statistical significance of differences to the control was evaluated with Chi²-fest (prortately) and STUDENT t-test (reproduction) with a 0.05. compared to control after exposure on day 0, 12 and 35 after application. Statistical significance of

### **Results:**

Effects on the predatory bug (*Orius laevigatus*) exposed to Trifloxystrobin & Cyproconazole SC 535 in an

extended laboratory test under semi-field conditions.

		Mortality			Viable	Ď.	Reduction in		
Treatment group/ Application rate	Surviving nymphs/ adults	absolute	Corrected (according to Abbott)	Eggs/ female/ day <sup>x</sup>	eggs/ female/ day <sup>x</sup>	Hayched nymphs/ egg	fecund-	<b>fertility</b>	
(L/ha)	(no.)	(%)	(%)	(mean no)	(mean)	(%)	~(%) <del>~</del>	(%)	
	1st bioassay (DAT 0)								
Control	53	11.7	- 2	~ -	\$ -	<u>-</u> 0	Q ,	0' - %	
Toxic reference Dimethoate EC 400 (0.08 L/ha)	0	100*	100	- ~	7 ,-W		- J		
Test item Sphere 535 SC (1.0 L/ha)	2	96.7*	96.2		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		J - 2		
	22 <sup>rld</sup> bioassay (DAT 140)								
Control	48	20.0			,0'- ×				
Toxic reference Dimethoate EC 400 (0.08 L/ha)	0	100*						-	
Test item (1.0 L/ha)	14	<b>%</b> .7* , \( \)	70.8° (				<b>%</b> -	-	
	Simbioassay (DAT 35) Simbioassay								
Control	50 🗞	16Ø*	, S - Q'	5.4	5%	×83.9,	-	-	
Toxic reference Dimethoate EC 400 (0.08 L/ha)	<b>.</b>	\$100*\$	1000		% - % D		-	-	
Test item (1.0 L/ha)	\$ 45 \$	2.50	\$ 10.0	5.0 ©	4.8	85.5	6.8	14.9	

Statistically significant (p<0.05)

### Observations:

During three successive bioassays started on DAT 0, 14 and 35 and with an exposure period of 11, 11 and 9 days, mortalities of 12.7, 20.0 and 6.7 % and 96.7, 76.7 and 25.0 % were recorded for the control and at a test item application rate of 1.0 L/ha, respectively. The exposure on DAT 0, 14 and 35 resulted in a corrected mortality according to Abbott of 96.2, 70.8 and 10.0 % at the test item application rate of 1.0 L/ha respectively. No staristically significant effect on survival was found for the test item application rate of 9.0 L/ha after exposure of *Orius laevigatus* nymphs on residues aged on grap wine leaves for 35 days.

After exposure of *Quius laevigatus* nymphs on the day of application and to 14 days aged residues of Sphere 535 SC, applied at an application rate of 1 L/ha, the assessed mortality of 96.7 and 76.7 % was statistically significantly higher than observed in the control.

After exposure on DAT 3 the mean daily oviposition was 5.4 and 5.0 eggs/female/day in the control and in the 1.0 L/kg/treatment level, respectively.

The mean percent hatching rate of eggs laid during the oviposition period after exposure on DAT 35 was \$3.9 and \$5.5 in the control and in the 1.0 L/ha treatment level, respectively. No statistically significant effects in the average number eggs/female/day or the hatching rate were found between the control and the 1.0 L/ha treatment level. Due to high mortality observed at 1.0 L/ha during the exposure phase started on DAT 0 and 14, no reproduction phase test was conducted. The reference



item Dimethoate EC 400 was applied at 0.08 L product/ha (equivalent to 32.1 g a.s./ha) on DAT 0,14 and 35 and caused 100, 100 and 100 % nymphal mortality, relative to control.

The validity criteria were accomplished.

# **Conclusion:**

The exposure to 35 days aged residues of Sphere 535 SC applied on grape-vine residued in mortality of Orius laevigatus nymphs until adulthood (corrected according to Abbott). The fecundity and fertility of the surviving adults were reduced by 6.8 % and 04.9 %, respectively, relative t control.

Report: KCP 10.3.2.2/03,

Toxicity of Iprodione + Tyfloxystrobin \$272.4 256.4 16 g/L to the predatory bug Vius Title:

laevigatus (Fieber) (Hereroptera, Anthogoridae) under exte

semi-field-aged residors on maize

Report No: 10 10 48 037 A Document No: M-398645-01-1

IOBC (BAKKER et al 2000) modified for the exposition natural Guidelines:

Deviations:

Yes (certified laboratory) GLP:

### **Objective:**

The purpose of this study was to determine the effects of fresh and aged residues of the test item on the survival and reproduction of the predatory bug Orius lawigatus (FIEBER) under extended laboratory conditions using semi-field aged residues.

# Materjals and methods: 8

Aged residues of the test item prodione + Trilloxystrobin SC 272.4 [analysed active ingredients: 263.1 g/L (23.7% w/w) Iprovione 15.9 g/L (1.43 % w/w) Trifloxystrobin, Specification No.: 102000021104, Batch vo.: XX43AX0041, Material No. 79653646, density: 1.11 g/cm<sup>3</sup>] were tested under extended laboratory Conditions on the predatory bug Orius laevigatus after contact exposure on leaf discs prepared from semi-field sprayed maize Endpoints were the mortality of exposed nymphs and the Perroductive performance of adult bugs compared to control after exposure starting on day 0, 14, 28 and 42 after last application. Stansfical significance of differences to the control was evaluated with Chi<sup>2</sup>-Test (mortality) and Student t-test (reproduction), with  $\alpha = 0.05$ .

Application rate in the test was 2 applications each with an application rate of 17.0 L product/ha with an application interval of A days,

Four bioassays were conducted with an exposure period of 11 days each, initiated on the day of the 2<sup>nd</sup> (last) application (DAT 0, bipassay 1), 14 days after the last application (DAT 14, bioassay 2), 28 days after the last application (DAT 28, bioassay 3), and 42 days after the last application (DAT 42, bioassay ...

### **Results:**

Effects on the predatory bug (*Orius laevigatus*) exposed to Iprodione & Trifloxystrobin SC 272.4 in an

extended laboratory test under semi-field conditions.

extended laboratory test under semi-neid conditions.									
Treatment	Surviving	Mortality		Eggs/	Viable	Hatched	Redaction in		
group/ Application rate	nymphs/ adults	absolute	Corrected (according to Abbott)	female/ day	eggs/ female/ day	nymphs/ egg	fectund- Qity	Tertility	
(L/ha)	(no.)	(%)	(%)	(moan no)	(mean (mo)	(%)	) (%)		
1st bioassay (DAT 0)									
Control	49	18.3	- 4	<u> </u>	Q - , o	) V	ر - ر	`J _@`	
Toxic reference)	0	100*	100	- ~	, -Qj	Q* \(	)* - &		
Test item (2x17 L/ha)	5	91.7*	89.8	© - (a)				\$ -	
2nd -:									
Control	46	23.3		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\$ 3	<b>\$</b> -	O - Z	<b>0</b> -	
Toxic reference)	0	100*	LOON"	Ž - Z	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	? - D>	& <u>,</u>	\$ -	
Test item (2x17 L/ha)	5	91.7*	\$9.1 \$9.1				\$ - \$	)	
		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	3 <sup>rd</sup> bioassay	(DÅT 14)		<u>گر</u> گ			
Control	46	23.3		3.90	£3.2 %	92.5		-	
Toxic reference)	3	<b>₹</b> 95.0 <b>*</b>	93.5		% - <u>~</u>	Ö	<b>~</b> -	-	
Test item (2x17 L/ha)	45	25% 25%	2.2	<b>3.5</b>	2.7	89.9 Q	9.5	16.7	
4 <sup>th</sup> bhoassay (DATQ1)									
Control	<b>(1)</b>	\$\$15.0\$	0- 8	4.4	3.9	·89%	-	-	
Toxic reference)	\$\frac{3}{3}	© 95.0¥	@ 94.1\$ <sup>*</sup>	& <u>"</u>		√y″-	-	-	
Test item (2x17 L/ha)	530	₩1.7 ×		\$\text{4.3}\$	\$3.1 \$	91.6	2.3	19.7	

<sup>\*</sup> Statistically significant (p < 0.05)

(a) no reproduction phase conducted due to high mortality diving the exposure period (negative values indicating an increase compared to control)

The validity criterio (control mortality 25% mortality for the toxic standard > 40%, reproduction performance for the control: 5 females producing no cogs,  $\ge 2$  eggs/female/day, hatching rate  $\ge 70\%$ ) were accomplished in all 4 bioassays

# Observations:

During these successive bioassays, mortal tries of 98.3, 23.3, 23.3 and 15.0% for the control and 91.7, 91.7, 25.0 and 11.7% for the test tem were recorded in bioassay 1, 2, 3 and 4, respectively.

For the test item a corrected mortality (Abbott) of 89.8, 89.1, 2.2 and -3.9% was determined in the four bioassays.

Effects on reproduction were not assessed in bioassays 1 and 2. In bioassays 3 and 4 (started on DAT 28 and 42) the reproductive performance of the test item group was 16.7% and 19.7% reduced, respectively, in comparison to the control group.

The exposure to residues of Iprodione + Trifloxystrobin SC 272.4 applied on maize leaves that started on the day of the last application (DAT 0) and 14 days after the last application (14 DAT) resulted in



89.8% and 89.1% corrected mortality (Abbott) of *Orius laevigatus* nymphs until adulthood, respectively.

The exposure to 28 days aged residues (DAT 28) of Iprodione + Trifloxystrobin SC 272.4 resulted in 2.2% corrected mortality of *Orius laevigatus* nymphs until adulthood. The fecundity and fertility of the surviving adults were not statistically significant reduced compared to the control (9.5% and 16.7%, respectively).

The exposure to 42 days aged residues (DAT 42) of Iprodione + Trifle systrobin SC 272.4 applied in maize leaves resulted in -3.9 % corrected mortality of *Orius laevigeus* nymphs until adminoral the fecundity and fertility of the surviving adults were no statistically significant reduced compared to the control (2.3% and 19.7%, respectively).

The toxic reference item perfekthion EC 400 was applied at 0.08 L product/ha requivalent to 33.2 g a.s./ha) on DAT 0 and at 0.02 L product/ha (equivalent to 8.3 g a.s./ha) on DAT, 10, 28 and 42 and caused 100, 100, 93.5 and 94.1% nympha mortality, relative to control.

# **Conclusion:**

In conclusion, potential for recovery was demonstrate 28 days after the last application.

Report: KCP 10.3.2,2/94, \$2.2008

Title: Toxicity of DE C650948 & Triflox strobin SC 250 250 to the predatory bug Orius

lawigatus (FIEBOK) (Hecoroptera: Anthocoridac Junder extended laboratory conditions using

Tien-aged residues on grape-vine

Report No: 07 1048 005 A Document No: M29747 101-1

Guidelines: IOBC (BAKKER et al. 2000) nodified for the exposure on natural substrate

Deviations. None

GLP: Yes certifical laboratory)

# **Objective:**

The purpose of this study was to determine the effects of fresh and aged residues of the test item on the survival and reproduction of the predatory but Orius laevigatus (FIEBER) under extended laborators conditions using semi-field aged esidues.

### Materials and methods:

Fresh and aged residues of the testorem AC C656948 (Fluopyram) & Trifloxystrobin SC 250 + 250 (246.1 g/L Phiopyram & 25.8 g/L Trifloxystrobin; specification: No.: 102000012886, Batch: 2006-004983, ToX No.: 07762-00) were tested under extended laboratory conditions on the predatory bug *Orius lavigatus* after contact exposure on leaf discs prepared from semi-field sprayed grape-vines. Endpoints were the mortality of exposed nymphs and the reproductive performance of adult bugs compared to control after exposure on day 0, 7, 14, 21 and 28 after last application. Statistical significance of differences to the control was evaluated with Chi²-Test (mortality) and Student t-test (reproduction), with  $\alpha = 0.05$ .



Application rate in the test was 2 single applications each with an application rate of 0.8 L product/ha in 300 L/ha with an application interval of 7 days resulting in a total application rate of 1.6 L/ha per

Five bioassays were conducted with an exposure period of 10 days each, initiated on the day of the (last) application (DAT 0, bioassay 1), 7 days after the last application (DAT 7, bioassay 2), after the last application (DAT 14, bioassay 3), 21 days after last application (DAT 21

after the last app	lication (D	AT 14, bio	assay 3), 21	days after	last application	ation (DAT 2	21, bPassa	ı¢⊘A) and
28 days after the	last applic	ation (DA)	Γ 28, bioassa	ıv 5) 🕲	(	<b>4</b>		, S
after the last app 28 days after the  Results:  Effects on the pro- extended laborate	11	(	- /		Q	<u></u>	,0 7, 29'	
D 1/				4	10 0	, S		
Results:				4	Q,	». «	₹. ¥	Ď "O"
Effects on the pro	edatory bug	g (Orius laes	vigatus) expo	💇 d to Fluo	pyram & T	rifloxystrobi	n&C 535_ir	ı an 🧳
extended laborat	ory test und	ler semi-fie	ld conditions					~ \$\frac{1}{2}
<b>T</b>		Mot	rtality 👋		Viable		Reduct	ion in
Treatment	Surviving		Corrected	Æggs/Ö	eggs/	Hatched		
group/	nymphs/	absolute	(according)	female	female/4	nymphs/egg	Pecund	feetflity
Application rate	adults	aosorate	to Abbott	day	o day		dity	Torquity
(T /I )	( )	(0/)	0 (0 %)	mean	(mæan	0 (%)	Sol	
(L/ha)	(no.)	(%)		nov y			Ø(%)	(%)
				ay ( <b>Q</b> AŤ 0)				
Control	51	15.0	19 - B	<u> </u>	D - K	₩ - <u> </u>	-	-
Toxic reference)	0	~000* °×	100	0 - L		_ 0	<b>≫</b> -	-
Test item	2 .	96.7	\$6.1 E	- (D)	4			
(2x0.8 L/ha)	2 6	b 90.0°	~~ ~.	_ ` ′			-	
	~		2 <sup>nd</sup> broass	ay DAT	y' ~ ~ ~		I	
Control	53	Qr1.7 , Q		<u> </u>	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		-	-
Toxic reference)	Ø*	100	Ø100 S	r N	- 0	4	-	-
Test item	6.0	90.0	₩ 88. <b>%</b>	, Q(a) . (	b <u>-</u> 4	<u> </u>	_	_
(2x0.8 L/ha)		\$ \ \	~	J ( ) 5				
C	$\sim$	, O	3 <sup>rq</sup> Wioass	(DAT 14		· · · · · · · · · · · · · · · · · · ·	T	_
Control	<i>®</i> 2 ≈	13,3	*- °	\$	0 - 🖑	-	-	-
Toxic reference)	0 🔬	1,00*	1000	- 0	-0	-	-	-
Test item	.25	8.3*	51,9	5 - (a)	, O <sub>2</sub>	-	-	-
(2x0.8 L/ha)				(T) N T 21				<u> </u>
G + 1			Dioass	ay (DXT 21		00.7		<del> </del>
Control	57 🔬	<b>390</b>		6.8	> 5.7	89.7	-	-
Toxic reference)	92	₹00* £	<u> </u>	) <u> </u>	-	-	-	-
Test item	$\mathcal{G}_3$	11.5	7.0	66	5.8	93.7	2.9	-1.8
(2x0.8 L/ha)	. 0		5th is according	l@̃ ay∜√DAT 28	D			
Control	<i>25</i> /	8.3	o s proass	5.4	4.8	91.4	_	
		98.3	\$\frac{1}{2}\text{8.2}	) 3.4	4.8	91.4	-	-
Toxic reference) Test item	₩,1	, y y Q. <b>3</b> 0°	40	-	-	-	-	-
	√ 51 <sup>©</sup>	\$3.0	7.30	5.7	4.9	91.3	-5.6	-2.1
(2x0.8 L/ha)	ν.							

<sup>\*</sup> Statistically significant (p<0.05)

Priterio for the control group and the toxic standard were accomplished:

<sup>(</sup>a) no reproduction shase conducted due to high mortality during the exposure period (negative values indicating an increase compared to control)

- mortality in the control group:	$\leq 25$ % (being 15.0, 11.7, 13.3, 5.0 and 8.3 % during 1 <sup>st</sup> ,
	2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> bioassay)
- mortality in the reference item:	> 40 % (being 100, 100, 100, 100 and 98.3 % during 1st,
	$2^{\text{nd}}$ , $3^{\text{rd}}$ , $4^{\text{th}}$ and $5^{\text{th}}$ bioassay)
- number of eggs/female/day in the control:	$\geq$ 2.0 (being 6.8 and 5.4 during $\P$ and 5 <sup>th</sup> bioassay)
- number of females in the control producing	< 5 (being 1 during 4 <sup>th</sup> and 5 <sup>th</sup> bioassay)
no eggs:	
- hatching rate in the control:	≥ 70 % (being 89.7 and 90.4 % during 4th and 5th >
	bioassay, C

### **Observations:**

During the successive bioassays, mortalities of 15.0, 11.7, 13.3, 5.0 and 83 % and 96.7, 90.0, 58.3, 11.7 and 15.0 % were recorded for the control and the test item in bioassay 1, 2, 3, 4 and 5, respectively.

The corresponding corrected mortality faccording to about in these five pioassays was calculated at 96.1, 88.7, 51.9, 7.0 and 7.3 %, respectively.

No reproduction phase was conducted in Groassays 1, 2 and 3, in bigassays 2 and 3 (started on DAT 21 and 28) the relative effect on reproductive performance was -1.8 9 (increased) and -2.1 % (increased), respectively, in the test item treatment group.

The exposure to 14 days aged residues of AE \$\int\_{0.56940}\text{ & Trifloxystrobin \$\int\_{0.250}\text{ + 250}\$ applied on grape-vine leaves resulted in 51.9 % mortality of \$\int\_{0.250}\text{ for the leaves due to less numbers of surviving adults.}

The exposure to 25 days aged residues of AE C656948 & Trifloxystrobil SC 250 + 250 applied on grape-vine leaves resulted in 7.0 % mortality of *Grius Jaevigatus* nymphs until adulthood (corrected according to Abbott). The tecundity and fertility of the survioing adults were reduced by 2.9 % and increased by 1.8 %, respectively relative to control.

The exposure to 28 days agent residues of AE C656948 Triff xystrobin SC 250 + 250 applied on grape-vine leaves resulted in 7.3 mortality of *Orius laevigutus* nymphs until adulthood (corrected according to Abbott). The fecundity and fertility of the surviving adults were increased by 5.6 % and 2.1 %, respectively, relative to control.

The toxic reference frem perfekthion EG 400 was applied at 0.08 L product/ha (equivalent to 31.0 g a.s./ha) or DAT 0, 7, 14, 21 and 28 and caused 100, 100, 100 and 98.3 % nymphal mortality, relative to control.

# **Conclusion:**

In conclusion, potential for recovery can be considered after 14 days following the last application but was evidented days following the last application, with exposure to aged residues resulting effects on survival and reproduction below 50 %.

\*\*\*\*



Report: KCP 10.3.2.2/05; ., 2004

Title:

Toxicity to the Predatory Bug *Orius laevigatus* Fieber (Heteroptera, Anthocoridae) Fring an Extended Laboratory Test with Freshly Applied and Aged Residues

Report No: 20031276/01-NEOr M-001111-01-1 Document No:

Guidelines: IOBC Guideline (Bakker et al. 2000), modified

Deviations:

Yes (certified laboratory) GLP:

# **Objective:**

The aim of the study was to determine the effects of reshly applied and aged residues of Prothioconazole & Trifloxystrobin SC 325 on the productory bug Typhlodromus

### **Materials and Methods:**

Test item: A SC formulation of Protoconazole & Triflox stroken SC 325 wes tested, speculied by batch number [analysed content of active ingredients: Prothioconazole: Trifloxystrobin: 156.66 g/L; Batck number: 07996/0056(0050); sample no. TOX0639650; density: 1.119 g/ml].

The test item was applied with a boom sprayer to potted maize plants (Zea mays) two times with an interval of 14 days at a vate equivalent to 1000 mL product/har Perfection (400 g/L dimethoate, nominal) was used as a toxic standard and was applied only at the 2<sup>nd</sup> application with a rate of 49.85 mL product/ha in 3000 water ha and for the following bioassay with 1.16 mL/ha in 200 L deionised water/ha on detached maize leaves using a laboratory sprayer (Schaehtner)

For both applications at the outside area of the testing facility, 40 maize plants with a grow stage of 5 to 9 leaves (BBCH 5-17 and 17-P) were used for the control and the treatment group. At the 2<sup>nd</sup> application for the toxic standard maire plants at the same grow stage were used. The plot size was 33.0 m<sup>2</sup> for all treatment groups.

All treatment groups included 40 replicates each consisting of two nymphs of Orius leavigatus. When the spray layer was dry, two and instar nymphs were exposed to the dried spray deposits. The preimaginal mortality was calculated a days after start of exposure, when 80 % were adult. The ageing of the sprayed maize plants was carried out between the first and second application and 7 days after the 2<sup>nd</sup> application under an UN permeable rain cover. A reproduction assessment was accomplished at the  $3^{rd}$  hoassay, as the mortality in the treatment group was < 50 %.

For the test substance treatment group and the control treatment group in the 3rd bioassay, the prereproduction was carried out for 5 days. After this time, the reproduction performance of the females was determined by counting the eggs/female/day over a period of 4 days and the hatching rate was determined lo counting the hatched eggs, which were stored 5 days more. The mortality in the reference preatment was above 70% in all bioassays.

xperimental work: August 18 to October 22, 2003



Validity Criteria	Recommended by the guideline	Obtained in this study		
Mortality in water control	≤ 25%	5 - 15%		
Corrected mortality reference item	> 40%	72.5 - 100%		
Level of fecundity (eggs/female/day)	≥ 2	5.7		
Level of fertility	>70%	% Ø%		

alidity Criteria		Recommended by the guideline	Obtained in this study	, Q°
ortality in water contro	ol	≤ 25%	5 - 15%	
orrected mortality refer	rence item	> 40%	72.5 - 100%	
evel of fecundity (eggs/	/female/day)	≥2	5.7	
evel of fertility		>70%	<b>9</b> 6%	
ll validity criteria for	·	net sigatus after Exposure to	OPTO + TROEC 325	
Test substance		Prothioconazole & J	Orfloxystrobin PC 325	
Test species	Q Q	T & Doring To	aevigatus 💍 💆	
Exposure	\$ °	Maize	e Teaves	, S
Bioassay No. 1 (Day 0)	Mortality	Corr. Mortality	Eggs/fem@e/day	Hatching rate [%]
control	5.0 📞	\$ 4 - 0	4 .20	<u>-</u>
Treatment group	I // 4\	\$ 82. <b>Q</b>	, J-3 -	-
Toxic standard	\$6.3* \$\sqrt{2}\$	0° 26.1		-
Bioassay No. 2 (Day 14)	Mortality [%]	Corv. Mortality	Eggs/female/day	Hatching rate [%]
control	8.3 🖔			-
Treatment group	65.0*	62.65	O	-
Toxic standard	5 400* C		-	-
Bioassay No. 3 (Day 28)	Mortality [%]	Corr. Mortality	Eggs/female/day	Hatching rate [%]
Control 👸	A 10.0 %		5.7	90.0
Treatment & up	∑31.3* <u></u>	Q 3.7 Q	5.3	89.0
Toxic standard	100	Q 100°	-	-
Bioas ay No. 4 (Day 42)	© Mortality  √ √ [%]  √	Corr. Mortality	Eggs/female/day	Hatching rate [%]
Control	15.0		-	-
Treatment group	¥1.3 V	-4.4	-	-
Toxic standard	72.5 <sup>₩</sup>	© 67.7	-	-

# Conclusion:

The mortality of O. leavigatus exposed on maize leaves treated with Prothioconazole & Trifloxystrobin SC 325 on day of 2<sup>nd</sup> application resulted in 83.3 %. For exposures started 14, 28 and

<sup>1=</sup> pre-imaginal mortality, including not recovered, moribund and dead nymphs 2= corrected mortality, according to Schneider-Orelli (1947)
\*= statistically significant different compared to the control (Fisher's Exact Test, p ≤ 0.05)



42 days after application, the mortality declined with time and resulted in 65.0 %, 31.3 % and 11.3 %, respectively.

The reproduction was carried out after 28 days, for the 3<sup>rd</sup> bioassay. No effects were observed. The level of the treatment group was similar to that of the control in point of fecundity and hatching rate. The reduction in reproduction was 7.0 % for fecundity and 1.1 % for the hatching rate control.

Report: KCP 10.3.2.2/06; A. (2010) 🦧

Reducing the impact of pesticides on biplogical control in Australian vineyards pesticide Title:

mortality and fecundity effection an addicator species the protestory afte Euseius victoriensis (Acari: Phytoseiidae).

J. Econ. Entomol., Volumo 103, Issue 6, p.2061-2071 (2010)

10.1603/EC09357

None

No

b) supplementary information (EFSA Jaurnal 2011;9(2):2092)

Source:

DOI No:

Guidelines: GLP:

b) supplementary information Classification:

### EXECUTIVE SUMMARY

Laboratory bioassays on detached somean, Olycine max (L.) Merr., traves, were used to test trifloxystrobin on a key Australian predatory mite species Euseius victoriensis (Nomersley) in "worstcase scenario" direct overspray assays. Zero- to 48 h-old pavenites, their initial food, and water supply were sprayed to rue off with a Rotter lower. Pests were spandardized to deliver a pesticide dose comparable with commercial application of highest label rates at 2,000 Neer/ha. Cumulative mortality was assessed to h, And 7 d after praying. Ferundity was assessed for 7 d from start of oviposition, No significant mor fecundity effects were detected for trifloxystrobin.

### A. Material

1. Test material Themical state and deseription

Euseius victoriensis Species:

ommon name:

originated from field collected material near Loxton, South Source of test species:

Australia (140.57° E, 34.46° S)

# B. Study design and methods

### 1. Test procedure

Each test unit replicate was constructed from two open petri disfles lined with cotton wool. The inner dish had an upturned bear leaf

embedded in cotton wool, and a sticky barrier applied to it im as Test design:

per in Bernard et al. 2004. Mites straying onto the cotton (wool the received the same pesticide exposure as Mose on the leaf, and were returned to the leaf surface instead of being designated as es

Test concentration(s): 0.081 mL/L

> toxic reference marrozeb, nonyl prenol ethylene Control(s):

oxide, and spingsad residue

Four, for the toxic control three replicates Number of replicates:

> 24.0 +/- 1°0, 80 +/- 10% RH, a protoperiod of 6:8 (L;D) h, and 750-1050 fux, in an externally vented constant temperature calcinet

as per Bernard et al. (2004), Cabine temperature was lowered to Test conditions:

23.0 % during morality assessments, to reduce mite

movement and aid the accuracy of assessments.

The pha extentalis Prest (cumbungs) pollen and 22-25 predator eggs overe added to each test unit and additional dist of laborators reared

Aculops lycopersici (Massee)

Medium renewal:

Frequency of test item application:

Test duration:

Test duration:

Nov.

Statistics:

NOV.

2. Measurements durin

Juveniles were counted, and dead larvae removed, just before spraying; all dead and live prites were counted, and dead mites removed. Makes were considered dead when they failed to move veniles after gentle production with a brush Bard. soraying. Mortality was then scored 48 h, 4 d, and 7 d after after gentle produing with a brush. Predator eggs and larvae were counted and removed daily for 3-8 d, from 5 to 12 d after spraying, excluding a 24-h preoving sition period from the analysis.

Assessments were made with a dissecting microscope at 12-18x magnification, under a cold light.

RESULTS

1. Validity criteria:

No validity criteria defined:

2. Biological findings:

Post hoc tests on mortality indicate that mancozeb was significantly more toxic, whereas trifloxystrobin had no significant affacts. Post hoc tests on focus literia live to Company and the literia defined in th unat mancozeb was unat mancozeb was unat effects. Post hoc tests on factor  $F=\sqrt{229}$ ; df = 5, 18; P = 0.34) exposure resulted in complete focundity suppression (Table 1). trifloxystrobin had no significant effects. Post hoc tests on fecundity indicate trifloxystrobin had no significant feelindity effects F = 1229; df = 5, 18; P = 0.34) compared with the control. Mancozeb

Table 1. Mean cumulative mortality (95% CI) and fecundity (mean+-SE) of *E. victoriensis*, after topical pesticide overspray to runoff, of juveniles (0–48 h old) on soybean leaf substrate

-	-	•	, •		
Treatment	% mortality 48 h (95% CI)	% mortality 4 d (95% CI)	% mortality 7 d (95% CI)	Reproduction ( <i>R</i> ) <sup><i>a</i></sup> per Surviving female +/- SE 6-12 d after praying	% fecundity
Control	8.18ab	14.9a	23.0a	10-8-7- 1.56a	
	(2.11, 15.0)	(6.46, 22.0)	(13.0, 33.3)		
Trifloxystrobin	9.86ab	18.7a	26 <b>%</b> a	Q11.6 +/- 0.31a	
Timoxysuoom	(5.01, 15.0)	(11.4, 21.4)	(24,6, 31.7)	J 911.0 1/- 0.314	
Mancozeb	81.0c	96.4b	98.5b	\$ 600 + 600 A	100
iviancozeo	(73.2, 88.2)	(90.7, 100)	(95.6, 100) ~	000 +/-000	100

Means are based on four replicates, except for mancozeb, nonyl phenol ethylene oxide, and spinosadiosidue based on three replicates. Means within the same bioassay and column followed by a different letter are significantly different (P < 0.001; \*P > 0.01; Tukey b test).

### **RESULTS SUMMARY**

Trifloxystrobin has no significant effects based on mortality or recundity to Evictoriensis:

## REFERENCES

Bernard, M. B., P. A. Horne, and A.A. Hoffmann. 2004. Developing seco-toxicological testing standard for predatory mites in Australia: acute and sub-lethal effects of fungicides on *Euseius victoriensis* and *Galepitromus occidentalis* (Acarina: Phytoseiidae). J. Boon. Entomol. 97: 891-899.

### Comment by the Notifier

The publication confirms the low toxicity of the TPS W350 formulation to predatory mites. Therefore, the information is classified as b) supplementary information (EFSA Journal 2011;9(20)2092).

# CP 10.3.2.3 Semi-field studies with non-tagget asthropods

No new semi-field studies were deemed recessory

# CP 10.3.2.4 Field studies with non-target arthropods

No new field studies were deemed necessary.

# CP 10.3.2.5 Other routes of exposure for non-target arthropods

No relevant exposure of non-target arthropods is expected by other routes of exposure.

<sup>&</sup>lt;sup>a</sup> Reproduction (R) per female measured for 7 d from maturity, excluding the preoving sition period

### **CP 10.4** Effects on non-target soil meso- and macrofauna

The risk assessment procedure follows the requirements as given in the Council Directive 91/4148 (Annex III), Council Directive 97/57/EC (Annex VI) and the Guidance Document on Tonge Ecotoxicology.

# Predicted environmental concentrations used in risk assessment

The PEC<sub>soil</sub> values below are taken from MCP Sec.9, Point 9.1.3. Since the PEC<sub>soil</sub> values for orchands (early) scenario are below the values for the orchard (late) scenario only the values for the orchard (late) are presented here. The same applies for the wawberries (early) scenario for which the PE values exceed the strawberries (late) scenario values.

Initial max PEC<sub>soil</sub> values bold values were used in the tier risk assessment) **Table 10.4-1:** 

Compound	Orchards, late	~ & Krapes 4	Strawberries, early
	PECsoil, max	PEC squi Quax	PECsoil, max
	[mg/kg] 💇 🧳		[mgAg]
Trifloxystrobin	0.053	\$ 2 <b>9</b> 067 & \$	QQV21 (
CGA 357261	0.018	0.023	\$5.030 \(  \)
CGA 321113	0.076	Ø 0.0 <b>6</b> 7	0.115
CGA 373466	<b>4</b> 043 <b>4</b> 0	0,935 Q	0.068
CGA 381318	<b>20.007</b>	0.009	0.013
NOA 413161	0.00	© 0.011 ~	<b>3 20.013</b>
NOA 413163	°√ 0,009 ©	\$\times_{\infty} 0.04\text{,}	0.014
CGA 357276	√	~	0.004
NOA 409480	\$\tilde{\pi} 0.010 \tilde{\pi} _\mathreal_0	Ø.013 O	0.016

accu values (mixing depth of 10 and 20 cm for plateau calculation; bold √alues were used in the tier 1 rist asses ment of

	9	9 4				
Compound	Orchar	ts, late			Strawber	ries, early
	PECoril, platea	PEC soil, accu	PE Coil, platear	PEOsoil, accu a	PECsoil, plateau	PEC <sub>soil, accu</sub> a
- "	Mug/kg/,"	Jang/kg	mg/kg]	ے[mg/kg]	[mg/kg]	[mg/kg]
Mixing depth	, S			em		
CGA 321113	0.03	🔻 0.1 <b>]%</b> 🖔	0.047	0.144	0.056	0.171
NOA 413161@	<0,001	0,000	<0.001	0.011	< 0.001	0.013
Mixing depth \$\text{\$\text{\$\pi\$}}\$			© 20 c	cm		
CGA 32113	0.019	0.095 × 0.009	Ç0.02 <b>4</b> ∫	0.121	0.028	0.142
NOA 403161	<0.00	0,009	<0.001	0.011	< 0.001	0.014
NOA 483161  a PEC in accu means  The tier 1 risk as	sessments are	pased on the	yorst case PEC	soil values from	n all intended u	ises.

### **CP 10.4.1 Earthworms**

Table 10.4.1-1: Endpoints used in risk assessment

Test item	Test species, test design	Ecotoxicological endpoint	
Trifloxstrobin WG 50	Eisenia fetida reproduction 56 d, mixed	NOEC ≥28 mg a.s./kg NOEC,corr. ≥14 mg a.s./kg <sup>a</sup>	M-464327-017 Kraurg-R-048/13
Trifloxstrobin (tech.)	Eisenia fetida reproduction 56 d, mixed	NOEC 3.5 mg/a.s./kgg/ws a	10 47.1/01 (2009) LRT Rg-R-56/09 M350077-01-1 (CA 8.44/03
CGA 357261	Eisenia fetida reproduction 56 d, mixed	MOEC \$100 mg/kg dws	(2012) kra-Qg-R-1-Q7/11 M-428262-02-1 CCA 84/1/04
CGA 321113	Eisenia fetida reproduction 56 d, mixed	NOECcorr. ≥50 mg/kg dws a	Kra Rg-R 49/13 Mr464328-01-1 RCA & 4.1/05
CGA 373466	Eisenia fetida reproduction 56 d, mixed	NOEC O S S S S S S S S S S S S S S S S S S	(2011) LBT-Rg-R-114/11 W-414741-01-1 RCA 8.4.1/06
CGA 381318	Exenia fenda eproduction 56 d.Onixed	NOEC > ≥10@mg/kg dws	(2013) Kra/Rg-R-150/13 M-466037-01-1 KCA 8.4.1/07
NOA 413161	Esenia fetida  Teproduction 5  56 denixed	NOE¢	(2011) LRT-Rg-R-116/11 M-416856-01-1 KCA 8.4.1/08
NOA 413163	reproduction 2 560 mixed	NOFC ≥1000 mg/kg dws	(2012) EBTFN011 M-445494-01-1 KCA 8.4.1/09
CGA 357206	Eisenia fetidio reproduction 56 d, mixed	NOTEC 50 mg/kg dws	(2012) kra-Rg-R-115/12 M-437130-01-1 KCA 8.4.1/10
NOA 409480 0 1	Eiselba fetidu reproduction 56 d, mixed	N <b>6</b> EC ≥100 mg/kg dws	(2012) kra-Rg-R-106/11 M-424075-01-1 KCA 8.4.1/11
dws = dryweigh	of 2 due to liposphilic so il; a.s. = active substan nts used for risk assessr	ce: prod = product: corr = corrected	

### Risk assessment for earthworms

**Table 10.4.1- 2:** TER calculations for earthworms

Compound	Species, study type	[mg/	Endpoint [mg/kg]		TERLT	Trigger
TFS WG 50	Earthworm, reproduction	NOEC	≥14 a,b	0.121	<u>j</u> ^j^56	× 5 ×
Trifloxystrobin	Earthworm, reproduction		₹.5 a	0.12	ر 29 ۾	, <b>5</b>
CGA 357261	Earthworm, reproduction	NOEC	≥100	0:030	33320	05 K
CGA 321113	Earthworm, reproduction	NOFE,	≥50 a	<b>%</b> .171‰°	<b>£ 19</b> 2	5 5
CGA 373466	Earthworm, reproduction	NØÆC	≥100	0.068	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
CGA 381318	Earthworm, reproduction	\$ OEC\$	≥100	<b>Q.013</b>	7692	<u></u> \$5
NOA 413161	Earthworm, reproduction 4	NOE@	<b>§</b> 91.8	90.013	7062	\$ 5 £°
NOA 413163	Earthworm, reproduction	NO EC ^	≥100 <sub>&gt;</sub>	0.044	7143	
CGA 357276	Earthworm, reproduction	`≯¥OEÇ© <sup>™</sup>	50 😽	<b>6</b> 0004	\$\tag{12500}	\$\$\frac{1}{5}\$
NOA 409480	Earthworm, reproduction	NOK	<b>\$</b> \$700 @	0.016	<b>6 6 6 6 6</b>	<u>5</u>

<sup>&</sup>lt;sup>a</sup> Adjusted by a factor of 2 to address the log P<sub>ow</sub> > 2

All TER values calculated with the worst case PECsoil, mayor PEC values clearly exceed the trigger value of 5 indicating that no unacceptable adverse effects on earthways are to be expected from the intended uses of Trifloxystrobia WG 50

Triffestystrotus WG,50 W: Effects on survival, growth and reproduction on the earthworm Engina fettua tested in artificial soft M-464327-013

Report No: Document No:

Guidelines:

Deviations

### **Objectives:**

The purpose of this study was to assess the sublethal effects of Trifloxystrobin WG 50 W on reproduction, mortality and growth of the earthworm Eisenia fetida during an exposure in an artificial soil with 5 different test concentrations.

b The NOEC of TFS WG 50 study is given jomg a kg kg soft

<sup>°</sup> worst-case PEC<sub>soil</sub> resulting from Calculations taking into account the potential for account in soil

### **Materials and Methods:**

Test material: Trifloxystrobin WG 50 W; (Sample description: FAR01568-00; Batch ID: EDFL011509; Material No. 05584493; Specification No. 102000007798 - 02; content: 49.8 % w). Adult earthworms (*Eisenia fetida*, about 6 months old, 8 × 10 animals for the control group and 4 × 00 animals per test concentration of the treatment group) were exposed in an artificial soil (with 10% peat content) to the nominal test concentrations of 5.6, 10.0, 17.8, 31.6 and 56.2 mg test item/kg will day weight.

Toxic standard: 1.25, 2.5, 5.0 mg Carbendazim (360 g a.s./L)/ kg dry weight soll.; control: quartz

Artificial soil composition was 68.5% quartz sand, 20% kaolin clay, 60% sphagnum peat and 0.5% CaCO<sub>3</sub>. The vessels were kept in a temperature-controlled room at 20± 2 % under a 16-hour light to 8-hour darkness photoperiod and a light intensity at light period between approximately 400 - 800 Lux. Earthworms were fed with dried animal manure.

The test item was mixed into the soil. After 28 days the number of surviving animals and their weight alteration was determined. They were then removed from the artificial soil. After further 28 days, the number of offspring was determined.

# Dates of experimental works

February 14 to April 15, 2013

### **Results:**

	,		(/ ))		W . (7)
Validity Criteria	Ž		Recom	mended >	Obtained y
Adult mortality			2	0%0	© \$\ 0\% \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Number of juvenil	es per repl	icator O		30	374, 302, 329, 287, 356, 387, 336, 386
Coefficient vari	ation of 🚧	production	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	30%	10.9%

All validity criteria for the study were met

To verify the sensitivity of the sest system, the reference item Derosal flüssig (Carbendazim, 360 g/L) is routinely tested at concentrations of 1.2502.5 and 5.0 mg product/kg soil dry weight.

In the most recent toxic standard study with the reference test item mixed into the artificial soil, was performed from September 24 to November 28, 2012. No mortality of the adult earthworms was observed 28 days after application. The change of body weight of the adult earthworms of the test concentration of 5.0 mg 45./kg dry weight soft was statistically significant reduced in comparison to the control.

The number of juveniles per test vessel of the two highest test concentrations were statistically significant reduced in comparison to the control. The EC<sub>50</sub> for reproduction was calculated to be 3.54 mg a.s./kg/dry weight soil. Confidence limits (95%) could not be calculated.

The results of the reference test item indicated that the test system was sensitive to the reference test item.

### Effects on mortality, growth and reproduction of the earthworms

Test item		Trifloxystrobin WG 50 V	v je s
Test object		Eisenia fetida	. The state of the
Exposure		Artificial soil	
	Adult mortality	Biomass change	Reproduction &
		[mg test item /kg dws]	
LOEC	>56.2	>56.2	>56.2 0
NOEC	≥56.2	<b>₹3</b> 6.2	>56.21
		Z, (	

			O n°		7	(( ))	
			xystrobiji WC	G 50 W 🤏 🧐	ذ.		
		[mg	test item /kg				
	Control	5.6	10.0	17.8		348	56.2 56.2
		No.	ortality of adu	ilt wordens aft	r 4 week		
Mortality [%]	0	90			Ď		\$ P
	(c	hang in fresh	<b>Bion</b> weight after	rass change weeks elativ	©to initial	freskoweig	gh <b>t</b>
Mean ± SD [%] a	+22.51 ± 6.94 *	\$\frac{4}{2.08}\frac{1}{2.79}	\$\tilde{\Pi}22.38\tilde{\Pi}4.9	98 421.6 <b>2</b>	2.38	24.82 ± & 10.40	+24.58 ± 5.71
			er of joveniles	0 &	after 8 w	eeks 🖗	
Mean± SD b	344.6±37.7	\$\frac{1}{2}\$58.3\pm 53.4	406.343.1	338,8±6	0.3 💖 33	8.5 31.5	$344.5 \pm 77.7$
	\$ : 0 °	Y V Re	production co	onpared to co	omrol [%]		
% to control	\$ :07	104.60	117.99	Ø 98. <b>3</b>		98.2	100.0

a no statistical significance compared to control (Williams, Multiple Sequential Fest, two-sided,  $\alpha = 0.05$ )

After 28 days of exposure no worms died in the control group and no mortality was observed at any test item concentration.

Statistically significant different alues for the growth relative to the control were not observed.

No statistically significant different alues for the number of juveniles per test vessel relative to the control were observed at any test concentration.

# **Conclusions:**

Overall, based on the biological and statistical significance of the effects observed on growth and reproduction, it is concluded that the NOEC for this study is  $\geq 56.2$  mg test item/kg dry weight artificial soil. Thus, the overall LOEC is determined to be > 56.2 mg test item/kg dry weight artificial soil.

Therefore, bases on the statistical significance:

NOEC related to reproduction: ≥56.2 mg test item/kg dry weight artificial soil LOEC related to reproduction: >56.2 mg test item/kg dry weight artificial soil

b no statistical significance compared to control William's Multiple Sequential t-test, one-sided smaller,  $\alpha = 0.05$ )

### **CP 10.4.1.2**

# **CP 10.4.2**

Table 10.4.2-1: Endpoints used in risk assessment

CP 10.4.1.2 Earthworms field studies  In view of the results presented above, no field studies were necessary.							
CP 10.4.2 Effects on non-target soil meso- and macrofauna (other than earthworms)							
Table 10.4.2- 1: Endpoints used in risk assessment							
Test item	Test species, test design	Ecotoxicological endpoint	Reference				
Collembola, reprod	luction						
TFS WG 50	Folsomia candida reproduction 28 d, mixed	NOEC  >21000 mg prod./kg dws  >499 mg a.s./kg dws  NOEC 249 mg a.s./kg dws	(2011) FRM-COLL-121/11 M-4153-6-01-0 KCA 8.4.2.1.63				
CGA 357261	Folsomia candida creproduction 28 d, mixed	NOEC 5 2100 mg/kg dws	(2012) FWM-Coll-150/12 M-443697-01-1 KCA 8.4.2.1/05				
CGA 321113	Folsomia cardida reproduction 28 d, mixed	NOEC 34 mg/kg dws OEC 758 mg/kg dws O	LASP M <sup>2</sup> 033523-01-1 KCA 8.4.2.1 /01				
CGA 373466	Folsomia candida reproduction 28 d, mixed	NOEC 2000 mg/kg dws	(2012) FRM-Coll-146/12 M-440109-01-1 KCA 8.4.2.1/08				
NOA 413161	Folsomia candida * reproduction &  St d, mixed	NOEC 9.18 mg/kg dws	LoEP M-090863-02-1 KCA 8.4.2.1 /02				
NOA 418 763	Folsomia cardida Ó reproductión 20 d. mrxed	NOEC	(2013) EBTFN012 M-444419-01-1 KCA 8.4.2.1/11				
CGA 357276~♥	Folyomic Fandida Peproduction 28 d, Mixed	NOEC ≥100 mg/kg dws	(2012) FRM-Coll-145/12 M-441251-01-1 KCA 8.4.2.1/12				
Son inites, reproduction							
TFS WG 50	Hypograpis aculeifer reproduction () 14 d, mixed	NOEC ≥1000 mg prod./kg dws ≥498 mg a.s./kg dws NOEC corr. ≥249 mg a.s./kg dws <sup>a</sup>	(2012) KRA-HR-76/12 M-443226-01-1				
CGA 357261	Hypoaspis aculeifer reproduction	NOEC ≥100 mg/kg dws	KCA 8.4.2.1/04 (2012) kra-HR-80/12 M-443311-01-1 KCA 8.4.2.1/06				
CGA 321013	Hypoaspis aculeifer reproduction 14 d, mixed	NOEC ≥50 mg/kg dws <sup>a</sup>	(2012) kra-HR-75/12 M-443145-01-1 KCA 8.4.2.1/07				
CGA 373466	Hypoaspis aculeifer reproduction	NOEC ≥100 mg/kg dws	(2012) kra-HR-73/12				

	14 d, mixed				M-440955-01-1
NOA 413161	Hypoaspis aculeifer reproduction	NOEC	≥100 mg/kg dws		KCA 8.4.2.1/00 (2013) kra-HR-91 (5)
	14 d, mixed				M-455226-01-1 © KCA 8.4.2.1/10
CGA 357276	Hypoaspis aculeifer reproduction 14 d, mixed	NOEC	≥100 mg/kg dws  P() >2);  phoduct; corr. = © rected  P()		(2012) krayHR-74/92 M-440369-01-10 KCA \$4.2.1/19
a corrected by factor dws = dry weight so Bold values: endpo	of 2 due to lipophilic subil; a.s. = active substandints used for risk assessm	bstance (log ce; prod. = p	P >2); moduct; corr. = Orrected •		
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Figure 10.4.2-1: Proposed degradation pathway of trifloxystrobin in soil (major

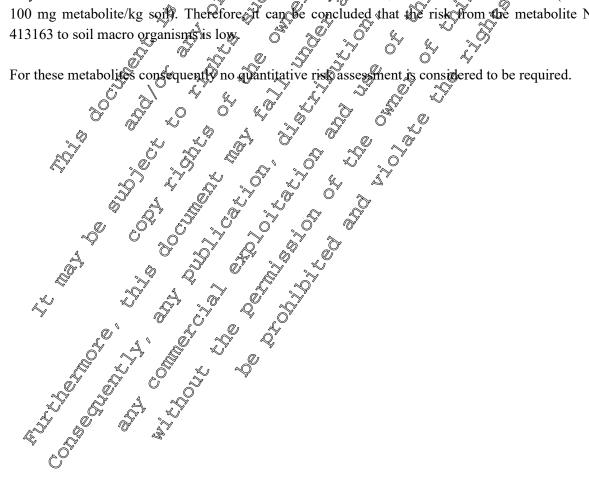
Studies with Folsomia and Hypoaspis were performed with the trifloxystrobin WG 50 formulation and most of the major soil degradation products. For some of these metabolites studies with Folsomia and Hypoaspis are not considered necessary as justified in the text below.

For the **metabolite CGA 381318** no studies with Folsomia and Hypoaspis are considered necessary, since Folsomia and Hypoaspis studies which have been performed with the structurally very similar

parent compound trifloxystrobin, with the EE-isomer (CGA 321113) and the ZE-isomer (CGA 373466) did not show toxicity to either Hypoaspis or Folsomia (all NOEC values > 100 mg metabolite/kg soil). Also the chronic earthworm study did not indicate any toxicity of this metabolite? (NOEC value > 100 mg metabolite/kg soil). Furthermore, CGA 381318 has maximum occurrence rate in soil of only 6.2%. Therefore, the risk from the metabolite CGA 381318 to soil macro organisms is considered to be low.

Studies with Folsomia and Hypoaspis have been not conducted with the metabolite NOA 402480 since the structural similar precursor metabolite CGA 3773466 and the E-isomer CGA 377276 Fof the metabolite NOA 409480 did not indicate to be poxic to these soil pracro organism's, and also the chronic earthworm study did not indicate any toxicity of this metabolite (NOE) value > 100 mg metabolite/kg soil). Therefore, the risk from the metabolite/NOA 409480 to soil macro organisms is considered to be low.

For metabolite NOA 413163 a study has been conducted with Forsomia. Testing Hypoaspis was not considered to be required to be considered to be required since the precursor metabolite CGA \$73460 did not show any coxicity to either Folsomia or Hypoaspis, and also the Zo-isomor (NGA 413101) of NOA 413163 showed no toxicity to Hypoaspis. Furthermore, the maximum occurrence of the metabolite NOA 413163 was only 6.0%. and the metabolite showed a low toxicity to either Folsomia and earthworms (NOEC > 100 mg metabolite/kg soil. Therefore it can be concluded that the risk from the metabolite NOA



Risk assessment for other non-target soil meso- and macrofauna (other than earthworms)

Table 10.4.2- 2: TER calculations for other non-target soil meso- and macrofauna

Compound	Species	Endpo [mg/l		PEC <sub>soil,max</sub> & [mg/kg]	TERLT	Trigger
TEG MIC 50	Folsomia candida	NOEC	$\geq 249^{\ a,\ b}$	0.121	2058	
TFS WG 50	Hypoaspis aculeifer	NOEC	≥249 a, b	0.121	2058	5 5
CGA 357261	Folsomia candida	NOEC	<b>₹</b> 100	0.630	©3333 Å	
CGA 337201	Hypoaspis aculeifer	NOEC 🔊	<sup>√</sup> ≥ 100	0.000 &	333\$	©5 (\$)
CGA 321113	Folsomia candida	NOEC 👼	158 a	0.17#6	<b>9</b> 24	5
	Hypoaspis aculeifer	NOEC	≥ 50 a		292 🔏	
CC A 272466	Folsomia candida	NOEC	9 ≥ 1,000	Ø.068 Ø	1471	<sub>4</sub> *5
CGA 373466	Hypoaspis aculeifer	NOEC	≥£00 €	<b>y</b> .008	10 B 71	5 K°
NOA 413161	Folsomia candida	ŰŇOĘĆY "	<b>9</b> .18	04430	<b>%</b> 706 <sup>6</sup>	
	Hypoaspis aculeifer 💇	NOEC C	$r' \geq 1.00$	0.0413	∂\$ 76 <b>9</b> \$	<b>5</b>
NOA 413163	Folsomia candid	NOEC	\$\frac{1}{2}\text{900}  \text{0}	70.014	<b>7</b> 43	<b>5</b>
CGA 357276	Folsomia candala	NOEC *	≥ 100		£25000~~~	5
	Hypoaspis a <b>@</b> leifer	NØEC S	<sup>7</sup> ≥ 100	0,004	250,000	5

a corrected by factor of 2 due to lipophilic substance (log Pow >2)

All TER values calculated with the worst case PEC soil have values clearly exceed the trigger value of 5 indicating that no inacceptable adverse effects on soil macro-organisms are to be expected from the intended use of Trifloxystrobin WG 50.

CP 10.4.2.1 Species level festing

Studies are provided in KCA 8.4.2.1.

CP 10.4.2.2 Higher tier testing

In view of the results presented above the further testing is necessary. All TER values calculated with the worst case PEC soil max values clearly exceed the trigger value of 5

b The NOEC of these TFS WG 50 studies are seven in mg as Org soil

c worst-case PECsoil resulting from calculations taking into account the potential for accumulation in soil

# **CP 10.5** Effects on soil nitrogen transformation

Table 10.5-1: Endpoints used in risk assessment

Test item	Test design	Endpoint	Ą	Reference S
N-transformation		Ö		
TFS WG 50	Study duration 28 d	no unacceptable ≥0.5 kg pr effects ≥0.272 m	g a.s./kg dws <sup>b</sup>	©COEP \$\frac{1}{2} \times \frac{1}{2} \times
Trifloxystrobin (tech.)	Study duration 28 d	no via	gays./kg.dws	M-034686-010 KCA8.5/01
CGA 357261	Study duration 42 d	no vijacceptable ≥3.353 m effects	g/kg dws	S.hulz (2013) 10 48 093 N M-464875-019 KC 8.5/15
CGA 321113	Study duration & d	ng y y y y y y y y y y y y y y y y y y y	gÆg dwsÖ	(2013) 3 10.48 092 N M-464870-01-1 K&A 8.5/16
CGA 373466	Study duration 28 d	no v v v v v v v v v v v v v v v v v v v	/kgdws. ©	I@ĚP M-070537-01-1 KCA 8.5/02 <sup>a</sup>
NOA 413161	Sindy duration 28 d	no S W S W	/kg/dws	LoEP M-071668-01-1 KCA 8.5/13 <sup>a</sup>

a studies already evaluated diffing the first EV review of tripoxystrobin

For all metabolites with maximum occurrence in soil of  $\geq 10$  % studies on the influence on the nitrogen-transformation was found at the tested soil concentration. Therefore the risk from soil metabolites with a maximum occurrence rate of lower than 10 % to soil microorganisms is considered to be low since they would not indicate an unacceptable risk even if they would be 10 times more toxic as the parent compound trifloxystrobin. Therefore, no study on the nitrogen-transformation is considered necessary for the metabolites CGA 381348, CGA 357276, NOA 413163 and NOA 409480 and no quantitative risk assessment will be conducted.

b0.08 mg formulation containing 0.041 mg a.s. were sprayed onto 150 g foil resulting in 0.272 mg a.s./kg soil.

# Risk assessment for Soil Nitrogen Transformation

**Table 10.5-2:** Risk Assessment for soil micro-organisms

				()8
Compound	Species	Endpoint [mg/kg]	PEC <sub>soil,max</sub>	Refinement C
TFS WG 50	Soil micro-organisms	≥ 0.272 b	0.121	No S
Trifloxystrobin	Soil micro-organisms	≥ 13.3%	0.120	No No
CGA 373466	Soil micro-organisms	≥ 100 🔻	00068	
NOA 413161	Soil micro-organisms	≥97.8	0.013 a	No O
CGA 357261	Soil micro-organisms	2100	© 0.020°	No A
CGA 321113	Soil micro-organisms	© ≥ 100	0 71 a	

a worst-case PEC<sub>soil</sub> resulting from calculations taking into account the potential for accumulation in soil

ents the ris
25% after M
cating low risk to s According to regulatory requirements the risk is acceptable, to the effect on ditrogen transformation at According to regulatory requirements the risk is acceptable, in the effect on hitrogen transformation at the maximum PEC<sub>soil</sub> values is < 25% after 100 days. In no vase, deviations from the control exceeded 25% after 28 or 42 days, indicating flow risk to soil micro-organisms.

### **CP 10.6** Effects on terrestrial non-target higher plants

The risk assessment is based on the "Guidance Document on Terrestrial Ecotoxicology (SANCO/10329/2002 rev2 final, 2002). It is restricted to off-field situations, as non-target plants defined as non-crop plants located outside the treated area. Spray drift from the treated breas produce residues of a product in adjacent off-crop areas.

# Risk assessment for Terrestrial Non-Target Higher Plants

Tier 1 limit tests have been conducted with the formulation Trifloxystobin WG 50. were originally reported on an active substance basis, the summary of endpoints and calculations are provided on an active substance basis as well. calculations are provided on an active substance has as well.

Table 10.6- 1: Endpoints used in risk assessment.

Test organism	Study type  Max. effects at Most sensitive References  279 g a. J/ha  Species
Terrestrial non- target plants; 10 species	Vegetative vigour; Tier 1 single dose 21 days  Vegetative vigour; Tier 1 single dose 21 days  KCAS. 6.2/02
Terrestrial non- target plants; 10 species	Seedling emergence; Tier V single dose 21 days  Cabbage  KCP 10.5/02  KCA 8.6.2/02

50, weither the tight securing envergence nor the vegetative vigour In the case of Triffoxystrobin Wo studies showed phytotoxic effects 50% at the tested rate of 279 g.a.s./ha (equivalent to 558 g

To demonstrate the low risk of the formulation to non-target plants, TER calculations have been performed for those crops for which high drift rates have to be considered. The test rate of 279 g a.s./ha was used as a most conservative expoint estimate (ER 279 g a.s./ha).

Table 10.6-2: Deterministic risk assessment based on the ER50 > 279 g a.s./ha

Crop \$\int\{}	Use pattern	Distance from Sield edge	Drift [%]	PER [g a.s./ha]	TER (Trigger = 5)
Apple Pear/Quince (early)	I \ '\@' ( ) /		23.961)	32.35 <sup>2)</sup>	> 8.6
Apple/Pear/Quin@ (late)	3 x 112.5 s.a.s./ha	<b>2</b> 3	11.01 <sup>3)</sup>	22.30 <sup>2)</sup>	> 12.5
	3 x 125 g a.s./ha	3	6.903)	15.53 <sup>4)</sup>	> 18.0

<sup>1)</sup> Basic of ift value for three applications in fruit early

The calculations clearly show that even with most conservative assumptions regarding endpoints and drift rates, an acceptable risk (i.e. TER > 5) can be demonstrated for the critical uses in high crops. It

<sup>&</sup>lt;sup>2)</sup> Considering MAF N.8 from EFSA GD Birds & Mammals (2009)
<sup>3)</sup> Basic drift value for three applications in fruit late

<sup>4)</sup> Basic **do**It value for three applications in grapes late

complete the results presented above, no further studies are deemed necessary.

CP 10.6.4 Semi-field and field tests on non-target plants in view of the results presented above, no further studies are deemed necessary.

P 10.7 Effects on other terrestrials studies are deemed necessary.

10.8

# extended laboratory studies on non-target plants view of the results presented above, no further studies are deemed neages ary. CP 10.6.4 Semi-field and field tests on non-target plants In view of the results presented above no further studies are deemed necessary. CP 10.7 Effects on other tereestriatorguits mystforus and funnal No studies are required. CP 10.8 Monitoring that a positiable.