Section A7.1.2(01) Rate and route of degradation in aquatic systems

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4.1.2	Graph	The degradation of chlorfenapyr in the sediment, water and total system is shown in Figures A7_1_2(01)-1, -2, and –3 for the sand/water system. The degradation in sediment and the total system is shown in Figures A7_1_2(01)-4 and –5 for the loam/water system.	
4.1.3	DT_{50}/DT_{90}	The DT_{50} for chlorfenapyr in the whole systems was 223 days in the sand/water system and 226 days in the loam/water system. The DT_{50} in sediment was 258 and 222 days for the sand and loam, respectively, and the DT_{50} in water was 97 days for the sand system. The loam system had insufficient radiocarbon in the water to determine the DT_{50}. A summary of DT_{50} values, the order of the best fit, and the associated r^2 values is given in Table A7_1_2(01)-9	X
4.1.4	Degradation of TS in abiotic control	No degradation occurred in the sterilized systems, with 87 to 88% of the original chlorfenapyr recovered after 101 days of incubation.	X
4.1.5	Intermediates/ degradation products	CL 312,094 was the only metabolite found, increasing to 19% of TAR in the sediment of the loam system at 103 days and 6% TAR in the sediment and 4% in the water of the sand system at 101 days.	X
4.1.6	Bound Residues	Bound residues increased throughout the study for both systems, reaching maximums of 3% and 7% in the sand and loam systems, respectively.	
4.1.7	Mineralization to CO_2	Mineralization to CO_2 was insignificant, accounting for less than 1% of TAR at all sampling intervals.	
		5 APPLICANT'S SUMMARY AND CONCLUSION	
5.1	**Materials and methods**	The distribution and degradation of chlorfenapyr was studied in two natural water/sediment systems. ^{14}C labeled chlorfenapyr was applied to pre-equilibrated water/sediment systems. Systems were analyzed after incubation in the dark at 20 ± 1°C for up to 100 days. The water was partitioned with dichloromethane and the sediment extracted with methanol, followed by combustion. Extracts were analyzed by LSC, HPLC, and TLC.	
5.2	**Results and discussion**	Chlorfenapyr moved rapidly from the water into the sediment. Chlorfenapyr was slowly degraded with a DT_{50} in the whole systems of 223 to 226 days. CL 312,094 was the only metabolite, reaching 19% of the applied radiocarbon in the loam/water system and 6% of the dose in the sand/water system at 100days. The importance of microbes in the degradation of chlorfenapyr in aquatic systems was shown by no degradation in sterile systems.	X
5.3	**Conclusion**	Chlorfenapyr moves rapidly to sediments in aquatic systems where it is microbially metabolized. CL 312,094 was the only metabolite accounting for more than 1% of the radiocarbon dose. The DT_{50} for chlorfenapyr in the whole system was 223 to 226 days.	
5.3.1	Reliability	1	
5.3.2	Deficiencies	No	

Section A7.1.2(01) Rate and route of degradation in aquatic systems

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Evaluation by Competent Authorities	
	Use separate "evaluation boxes" to provide transparency as to the comments and views submitted
	EVALUATION BY RAPPORTEUR MEMBER STATE
Date	20/05/2005
Materials and Methods	**Comments:** **Title:** According to the standard formats of TNsG the title should be "Rate and route of degradation in aquatic systems including identification of metabolites and degradation products". Since the identification of metabolites and degradation products is reported. The ring labeling designation in **3.1,** should be "^{14}C-pyrolle-ring labeled AC 303,630" instead of "^{14}C-pyrrole and labeled AC303,630". In **3.3.1,** should be referd, not only the place were the samples were collected but also, there kind: "The water/sediment systems were taken from the "Altensenner" lake near Paderborn and the "Mülenteich" brooklet near Scmallenberg-Grafschaft, for **sandy/water and loam/water system**, respectively."

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Results and discussion

Comments:

In the table A7_1_2(01)-9, mentioned in **4.1.3**, the whole system and sediment references are switched out of place. It should be replace by:

Table A7_1_2(01)-9:Degradation rates of Chlorfenapyr in water/sediment systems

system	DT_{50} [days]	order	r^2
Sand/water system			
sediment	258.0 d	1st	0.82
water	96.9 d	Root 1.5st	0.86
whole system	222.6 d	1st	0.88
Loam/water system			
sediment	222.0 d	2nd	0.95
water	--[1]	--	--
whole system	226.0 d	2nd	0.96

[1] not determinable due to low levels and noise

According to the original study report, in **4.1.4,** the % of chlorfenapyr recovered was 82 to 87%, instead of 87 to 88%.

In the same subheading, for a better study results approach, the information about degradation of TS in abiotic control, should included:

In the sterilized samples of the sand/water systems approximately 92% of the AR was recovered in the whole system; with approximately 82%AR in the sediment extracts and 2% AR was NER in the sediment. The water contained a total of 7% AR, with 6% AR extractable. The test substance accounted for 82% AR in the sediment extract at the end of the study.

In the sterilized loam/water samples approximately 94% of the AR was recovered in the whole system; with approximately 87%AR in the sediment extracts and 5% AR was NER in the sediment. The water contained a total of 2% AR. The test substance accounted for 87% AR in the sediment extract at the end of the study.

In **5.2,** the warning see table A7_1_2(01)-7 and A7_1_2(01)-8, should be included, since these tables represent the extraction of chlorfenapyr and metabolites from sediments and water.

Conclusion The RMS adopt the applicant's conclusion.

Reliability **1**

Acceptability **Acceptable**

Remarks Despite there is no standard formats for study summaries in TNsG, the proposed by the applicant gives all the relevant information for study assessment.

COMMENTS FROM ...

Section A7.1.2(01) Rate and route of degradation in aquatic systems

Annex Point IIIA XII.2.1

Date	*Give date of comments submitted*
Materials and Methods	*Discuss additional relevant discrepancies referring to the (sub)heading numbers and to applicant's summary and conclusion.* *Discuss if deviating from view of rapporteur member state*
Results and discussion	*Discuss if deviating from view of rapporteur member state*
Conclusion	*Discuss if deviating from view of rapporteur member state*
Reliability	*Discuss if deviating from view of rapporteur member state*
Acceptability	*Discuss if deviating from view of rapporteur member state*
Remarks	

Table A7_1_2(01)-1: Reference substances for co-chromatography

	Batch No.	purity
Chlorfenapyr	AC 8503-32A	97.3%
CL 312094 2-(p-chlorophenyl)-1-ethoxymethyl)-5-(trifluoromethyl)-pyrrole -3-carbonitrile	AC 8535-41B	98%

Table A7_1_2(01)-2: Characterization of the water/sediment systems

Designation Origin		Loam/water system		Sand/water system	
		sediment	water	sediment	water
Sediment	sand [%]	16		99	
	silt [%]	27		--	
	clay [%]	57		1	
	pH ($CaCl_2$)	6.6		8.4	
	organic C	6.7%	<0.05mg/L	0.2%	34 mg/L
	total N	6.3 g/kg	<0.05mg/L	<0.05	<0.05mg/L
	total P [mg/kg]	899 mg/kg	<0.05mg/L	36 mg/kg	<0.05mg/L
	CEC [mVal/100g]	24		<0.05	
	Calcium		15 mg/L		23 mg/L
	Magnesium		2.7 mg/L		0.9 mg/L

Table A7_1_2(01)-3: TLC conditions

Stationary phase	Silica gel F254 (20 x20 cm, 0.25 mm Merck)
Mobile phase	Toluene:hexane 2:1 (v:v)
The labeled compounds were detected with a Berthold TLC linear analyzer, type LB 284/285	
R_f	Chlorfenapyr – 0.42 CL 312,094 – 0.31

Table A7_1_2(01)-4: HPLC Conditions

Pump	Gynkothek, Modell M 480
Detector	^{14}C Berthold radioactivity Monitor Modell 506A
Integrator	PC with "^{14}C Berthold" software
Control	PC with Gynkosoft
Column	Hypersil ODS, 250 x 4.6 mm , 5µm
Solvent	acetonitrile: water 80:20 (v:v)
Flow rate	1 mL/min
Retention time	Chlorfenapyr - 6.3 min CL 312,094 - 5.4 min

Table A7_1_2(01)-5: Material balance and distribution of radioactivity after application of [^{14}C]-chlorfenapyr to water/sand system

DAT	%TAR						
	water		sediment		volatiles		material balance
	CH_2Cl_2	remaining H_2O	MeOH	non-extractable	CO_2	others	
0	12	1	72	1	<1	<1	86
0	12	1	77	1	<1	<1	91
0.25	16	1	76	1	<1	<1	94
0.25	17	1	77	1	<1	<1	96
1	13	1	81	1	<1	<1	96
1	13	1	76	1	<1	<1	91
2	11	1	77	1	<1	<1	90
2	11	1	80	1	<1	<1	93
7	12	1	80	1	<1	<1	94
7	10	1	79	1	<1	<1	91
14	8	1	78	1	<1	<1	88
14	10	1	77	1	<1	<1	89
30	9	1	75	1	<1	<1	86
30	10	1	72	1	<1	1	85
60	10	2	75	2	<1	2	91
60	10	2	76	3	<1	1	92
101	10	2	65	2	<1	10	89
101	11	2	65	2	<1	12	92

Table A7_1_2(01)-6: Material balance and distribution of radioactivity after application of [^{14}C]-Chlorfenapyr to water/loam system

DAT	%TAR					
	water	sediment		volatiles		material balance
		MeOH	non-extractable	CO_2	others	
0	1	91	4	--	--	96
0	2	94	4	-	--	100
0.25	2	94	5	<1	<1	101
0.25	3	96	5	<1	<1	104
1	2	89	5	<1	<1	96
1	2	91	4	<1	<1	97
2	2	91	5	<1	<1	98
2	2	88	5	<1	<1	95
7	2	88	5	<1	<1	95
7	2	90	5	<1	<1	97
14	2	89	5	<1	<1	96
14	1	86	5	<1	<1	92
30	1	82	5	<1	1	89
30	2	78	6	<1	<1	86
60	1	85	6	<1	5	97
60	1	86	6	<1	3	96
100	2	82	7	<1	5	96
100	2	81	7	<1	2	92

Table A7_1_2(01)-7: Chlorfenapyr and metabolites in the methanol extracts of the sediments

DAT	%TAR		
	AC 303,630	CL 312,094	unknowns
Sand/water system			
0	74	<1	1
0.25	77	<1	<1
1	79	<1	<1
2	79	<1	<1
7	80	<1	<1
14	78	<1	<1
30	71	2	1
60	72	2	1
101	58	6	1
Loam/water system			
0	91	<1	2
0.25	95	<1	<1
1	90	<1	<1
2	90	<1	<1
7	89	1	<1
14	84	2	2
30	74	6	1
60	73	12	1
101	62	19	1

Table A7_1_2(01)-8: Chlorfenapyr and metabolites in the dichloromethane extracts of the water

DAT	%TAR		
	AC 303,630	CL 312,094	unknowns
Sand/water system			
0	12	<1	<1
0.25	17	<1	<1
1	13	<1	<1
2	11	<1	<1
7	11	<1	<1
14	8	<1	<1
30	8	1	<1
60	8	2	<1
101	6	4	1
Loam/water system			
Insufficient radioactivity for HPLC			

Table A7_1_2(01)-9: Degradation rates of Chlorfenapyr in water/sediment systems

system	DT_{50} [days]	order	r^2
Sand/water system			
whole system	258.0 d	1st	0.82
water	96.9 d	Root 1.5st	0.86
sediment	222.6 d	1st	0.88
Loam/water system			
whole system	222.0 d	2nd	0.95
water	--[1]	--	--
Sediment	226.0 d	2nd	0.96

[1] not determinable due to low levels and noise

Figure A7_1_2(01)-1: Experimental data and calculated degradation curve for chlorfenapyr in the sand/water system, sediment

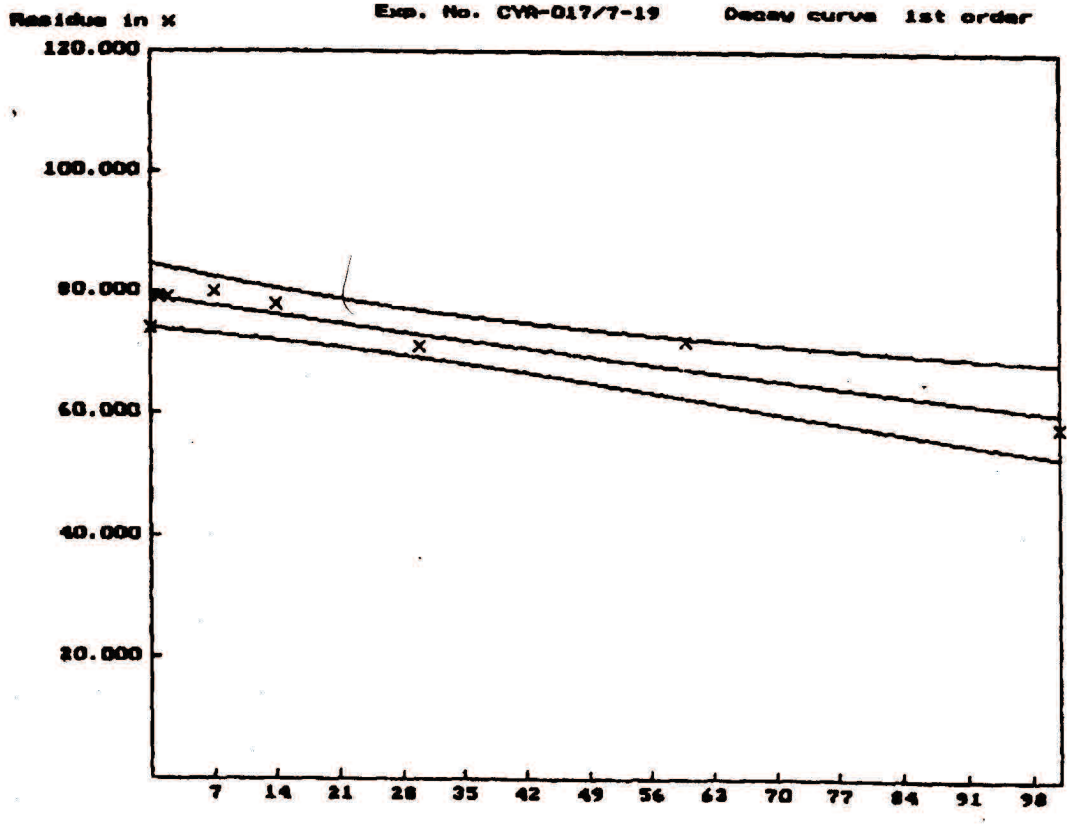


Figure A7_1_2(01)-2: Experimental data and calculated degradation curve for chlorfenapyr in the sand/water system, water

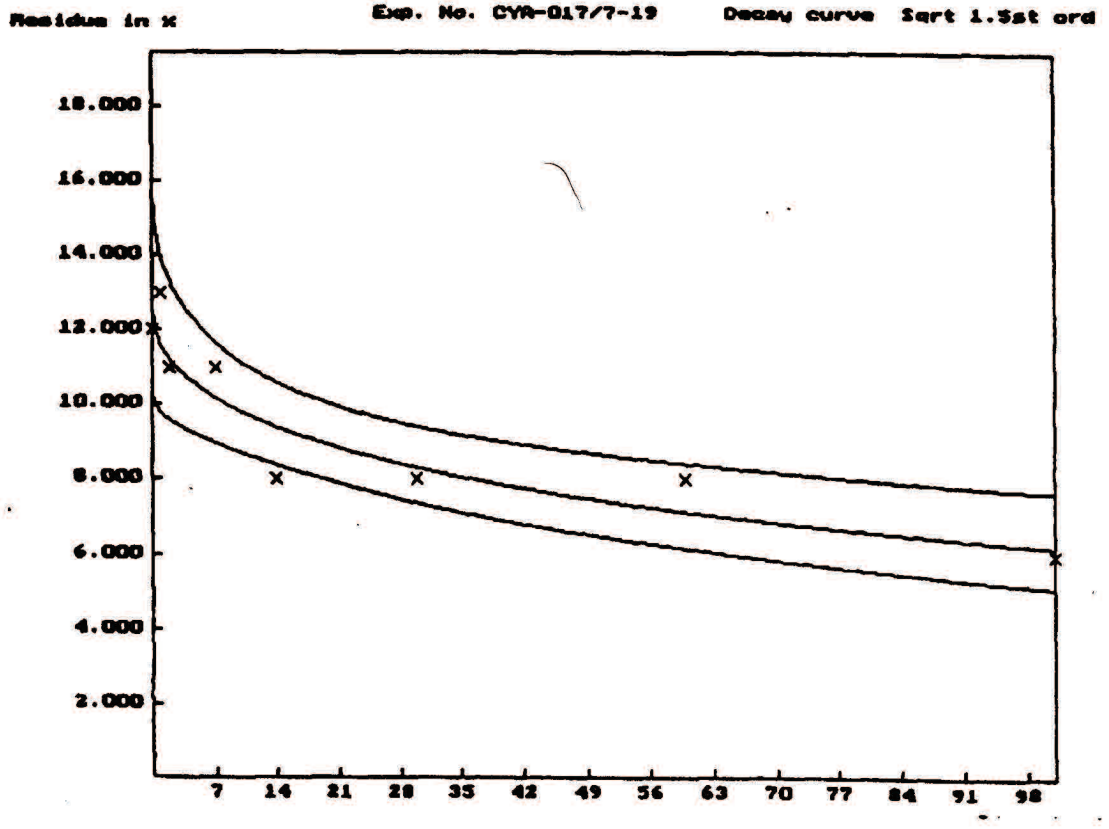


Figure A7_1_2(01)-3: **Experimental data and calculated degradation curve for chlorfenapyr in the sand/water system, whole system**

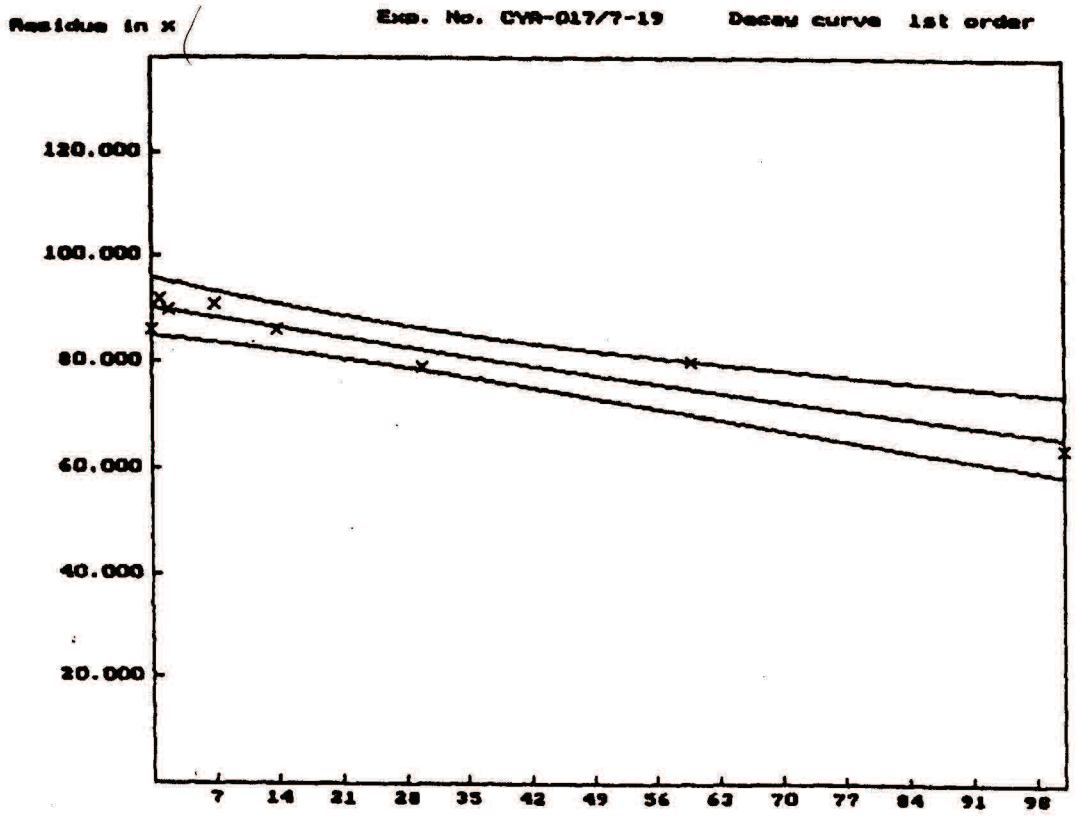


Figure A7_1_2(01)-4: Experimental data and calculated degradation curve for chlorfenapyr in the loam/water system, sediment

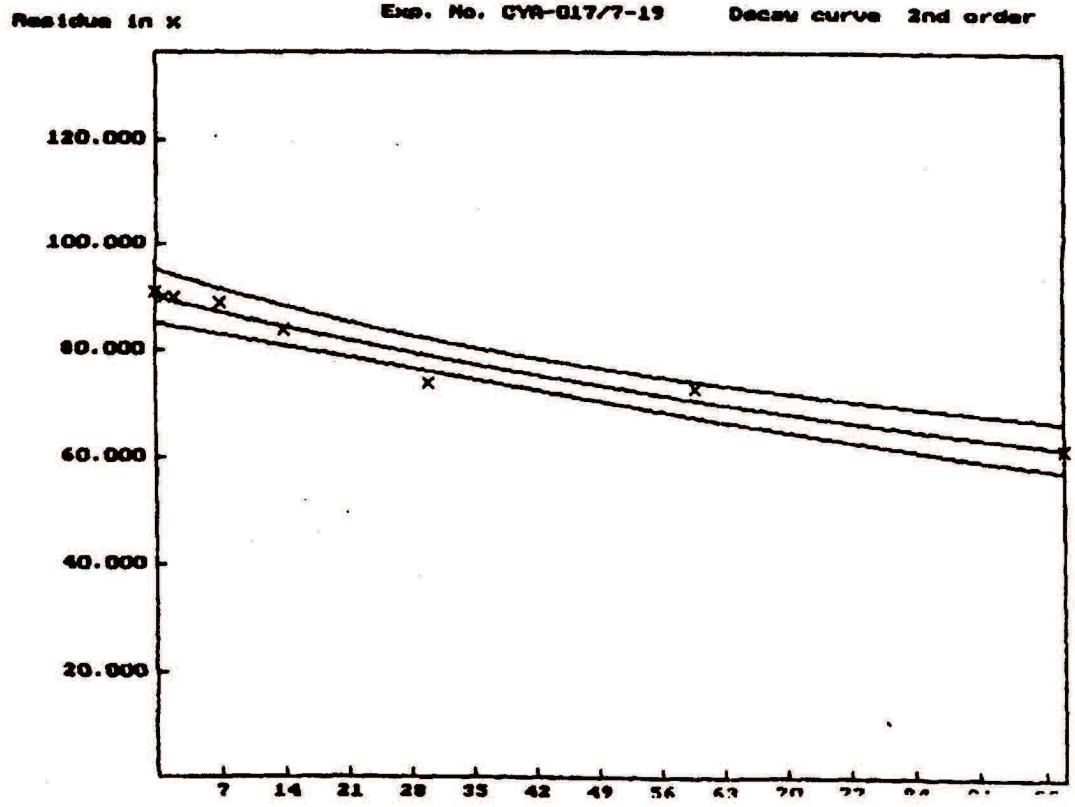
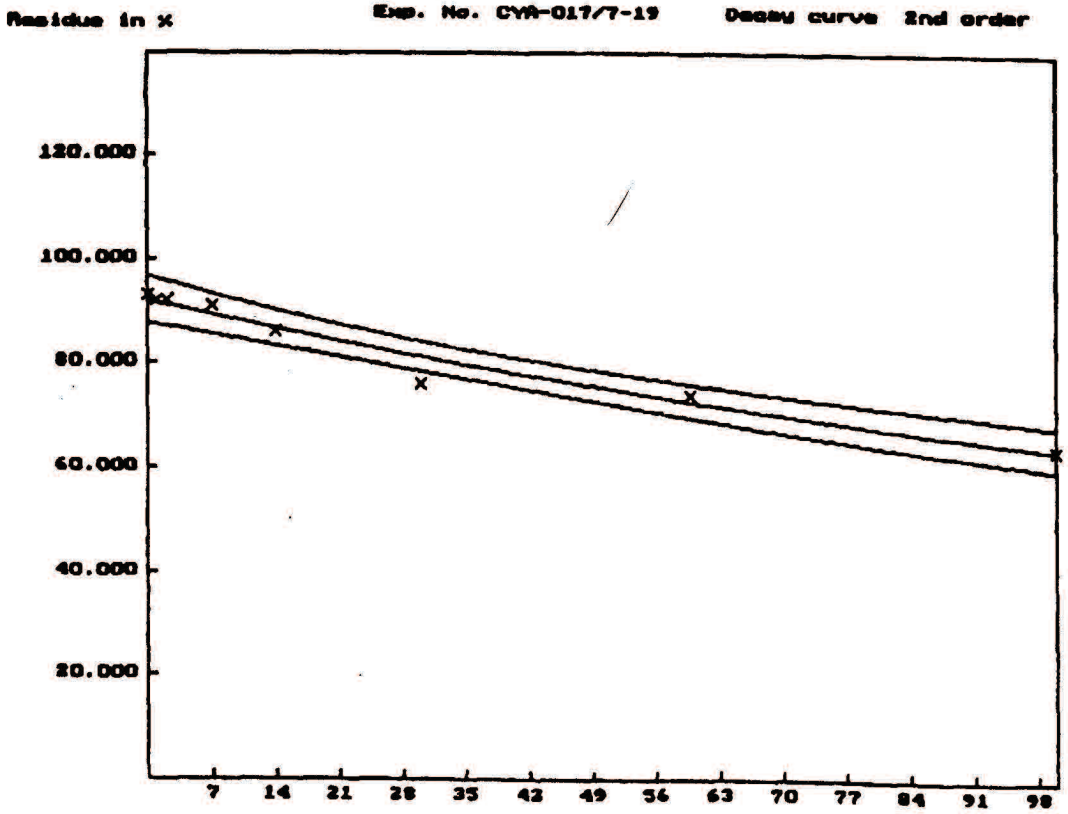


Figure A7_1_2(01)-5: Experimental data and calculated degradation curve for chlorfenapyr in the loam/water system, whole system



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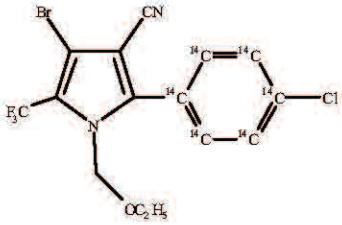
			Official use only
		1 REFERENCE	
1.1	**Reference**	[redacted]	
1.2	**Data protection**	Yes	
1.2.1	Data owner	[redacted]	
1.2.2			
1.2.3	Criteria for data protection	Data submitted to the MS after 13 May 2000 on existing a.s. for the purpose of its entry into Annex I / authorization	
		2 GUIDELINES AND QUALITY ASSURANCE	
2.1	**Guideline study**	Yes BBA Guideline, Part IV, 5-1	
2.2	**GLP**	Yes	
2.3	**Deviations**	No	
		3 MATERIALS AND METHODS	
3.1	**Test material**	^{14}C-phenyl-ring labeled AC 303,630	
3.1.1	Lot/Batch number	AC 8877-78	
3.1.2	Specification	Deviating from specification given in section 2 as follows:	
3.1.3	Radiolabeling		
3.1.4	Purity	97.8% radiopure, 97.3% chemically pure	
3.1.5	Specific Activity	64.6 µCi/mg	
3.1.6	Further relevant properties	The solubility of AC 303,630 in de-ionized water at 20°C is 0.14 mg/L.	
3.1.7	Composition of Product	Not applicable	
3.1.8	TS inhibitory to microorganisms	No	
3.2	**Reference substance**	Reference substances used for co-chromatography are shown in Table A7_1_2(02)-1.	
3.3	**Testing procedure**		
3.3.1	Test system	The distribution and degradation of chlorfenapyr was studied in two natural systems of water and sediment. The water/sediment systems	X

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		were taken from the "Altensenner" lake near Paderborn and the "Mülenteich" brooklet near Scmallenberg-Grafschaft. Characteristics of the water/sediment systems are given in Table A7_1_2(02)-2. The study was performed using an open gas flow system with a trapping device for volatiles. The test vessels were filled with a 2 – 2.5 cm sediment layer (ca. 30g dry weight for loamy sediment, 82 g dry weight for sandy sediment) and a 6 cm water layer (ca 145 mL), which were allowed to equilibrate for six to eight weeks before treatment. ^{14}C-phenyl-ring labeled AC 303,630 in 100 µL of acetone (<0.1% in the system) was applied to the water at a rate of 20 µg a.s. per test vessel. Two flasks per system were heat sterilized (121°C, 30 min) prior to application of the test substance. Incubation was done in the dark at a temperature of 20 ± 2°C for up to 100 days after treatment. Duplicate samples were taken from each water/sediment system at 0h, 6h, and 1, 2, 7, 14, 30, 60, and 100 or 101 days after treatment.	
3.3.2	Analytical procedures	The entire water/sediment system was transferred to centrifuge tube and centrifuged at 650 G for 20 minutes. The water was decanted and analyzed by LSC. Water samples which contained more than 10% of the applied radiocarbon were extracted with methylene chloride and the extract was analyzed by LSC and HPLC using the conditions in Table A7_1_2(02)_3. The sediment was extracted with MeOH and the extract was analyzed by LSC and HPLC. Unextractable radiocarbon remaining in the soil was determined by combustion and LSC.	
3.3.3	Intermediates/ degradation products	Metabolites were identified by co-chromatography using HPLC with radiodetection.	
3.3.4	Controls	Two flasks per system were heat sterilized (120°C, 20 min) prior to application of the test substance.	
3.3.5	Statistics	The best-fit functions for the decrease in AC 303,630 in the water, sediment, and whole system were determined and DT_{50} values were calculated.	
		4 RESULTS	
4.1	**Degradation of test substance**		
4.1.1	Distribution of Radiocarbon and Mass Balance	The distribution of radiocarbon and mass balance for each interval is shown in Table A7_1_2(01)-4 for the sand/water system and Table A7_1_2(01)-5 for the loam/water system. The overall mass balance ranged from 89% to 98% with an average of 94% for the sand system and from 92% to 103% with an average of 98% for the loam system.	X
4.1.2	Graph	The degradation of chlorfenapyr in the sediment, water and total system is shown in Figures A7_1_2(01)-1, -2, and –3 for the sand/water system. The degradation in sediment and the total system is shown in Figures A7_1_2(01)-4 and –5 for the loam/water system.	
4.1.3	DT_{50}/DT_{90}	The DT_{50} for chlorfenapyr in the whole systems was 218 days in the sand/water system and 418 days in the loam/water system. The DT_{50} in sediment was 248 and 402 days for the sand and loam, respectively, and	X

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		the DT_{50} in water was 114 days for the sand system. The loam system had insufficient radiocarbon in the water to determine the DT_{50}. A summary of DT_{50} values, the order of the best fit, and the associated r^2 values is given in Table A7_1_2(01)-8	
4.1.4	Degradation of TS in abiotic control	No degradation occurred in the sterilized systems, with 81 to 88% of the original chlorfenapyr recovered after 101 days of incubation.	X
4.1.5	Intermediates/ degradation products	CL 312,094 was the only metabolite accounting for more than 1% of the radiocarbon dose, reaching maximums of 6% and 20% in the sand and loam sediments, respectively, and 5% in the water from the sand/water system.	
4.1.6	Bound Residues	Bound residues increased throughout the study for both systems, reaching maximums of 3% in the sand/water system and 7% in the loam/water system.	
4.1.7	Mineralization to CO_2	Mineralization to CO_2 was insignificant, accounting for less than 1 % of the applied radiocarbon at all intervals.	
		5 APPLICANT'S SUMMARY AND CONCLUSION	
5.1	**Materials and methods**	The distribution and degradation of chlorfenapyr was studied in two natural water/sediment systems. Pyrrole-^{14}C labeled chlorfenapyr was applied to pre-equilibrated water/sediment systems. Systems were analyzed after incubation in the dark at 20 ± 1°C for up to 100 days. The water was partitioned with dichloromethane and the sediment extracted with methanol, followed by combustion. Extracts were analyzed by LSC and HPLC.	X
5.2	**Results and discussion**	Chlorfenapyr moved rapidly from the water into the sediment. Chlorfenapyr was slowly degraded with a DT_{50} in the whole systems of 218 to 418 days. CL 312,094 was the only metabolite, reaching 20% of the applied radiocarbon in the loam/water system and 11% of the dose in the sand/water system at 100 days. The importance of microbes in the degradation of chlorfenapyr in aquatic systems was shown by no degradation in sterile systems.	
5.3	**Conclusion**	Chlorfenapyr moves rapidly to sediments in aquatic systems where it is microbially metabolized. CL 312,094 was the only metabolite accounting for more than 1% of the radiocarbon dose. The DT_{50} for chlorfenapyr in the whole system was 218 to 418 days.	
5.3.1	Reliability	1	
5.3.2	Deficiencies	No	

Evaluation by Competent Authorities	
	Use separate "evaluation boxes" to provide transparency as to the comments and views submitted
	EVALUATION BY RAPPORTEUR MEMBER STATE
Date	20/05/2005

Section A7.1.2(02) Rate and route of degradation in aquatic systems

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Materials and Methods

Comments:

Title: According to the standard formats in TNsG the title should be "Rate and route of degradation in aquatic systems including identification of metabolites and degradation products". Since the identification of metabolites and degradation products is reported.

In **3.3.1,** should be refered, not only the place were the samples were collected but also, there kind: "The water/sediment systems were taken from the "Altensenner" lake near Paderborn and the "Mülenteich" Brooklet near Scmallenberg-Grafschaft, **for sandy/water and loam/water system, respectively.**"

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Results and discussion

Comments:

In the table Table A7_1_2(02)-8, mentioned in **4.1.3**, the whole system and sediment references are switched out of place. It should be replace by:

Table A7_1_2(02)-8: Degradation rates of Chlorfenapyr in water/sediment systems

system	DT_{50} [days]	order	r^2
Sand/water system			
sediment	247.6 d	1st	0.91
water	113.6 d	2nd	0.86
whole system	217.9 d	1st	0.96
Loam/water system			
sediment	401.0 d	Root 1st	0.97
water	--[1]	--	--
whole system	417.6 d	Root 1st	0.98

[1] not determinable due to low levels and noise

In 4.1.4, for a better study results approach, information about degradation of TS in abiotic control, should included:

In the sterilized samples of the sand/water systems approximately 91% of the AR was recovered in the whole system, with approximately 82%AR in the sediment extracts and 2% AR was NER in the sediment. The water contained a total of 8% AR, all of which was extractable into dichlormethane. The test substance accounted for 81% AR in the sediment extract at the end of the study.

In the sterilized loam/water samples approximately 92% of the AR was recovered in the whole system; with approximately 83%AR in the sediment extracts and 8% AR was NER in the sediment. The water contained a total of 2% AR. The test substance accounted for 81% AR in the sediment extract at the end of the study.

In **5.1,** the ring designation is switch off, this study was preformed with the phenyl-ring not with the pyrrole-ring

In **5.2,** the warning see table A7_1_2(01)-6 and A7_1_2(01)-7, should be included, since these tables represent the extraction of chlorfenapyr and metabolites from sediments and water.

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Conclusion	The RMS adopt the applicant's conclusion.
Reliability	**1**
Acceptability	**Acceptable**
Remarks	Despite there is no standard formats for study summaries in TNsG, the proposed by the applicant gives all the relevant information for study assessment.
	COMMENTS FROM ...
Date	*Give date of comments submitted*
Materials and Methods	*Discuss additional relevant discrepancies referring to the (sub)heading numbers and to applicant's summary and conclusion.* *Discuss if deviating from view of rapporteur member state*
Results and discussion	*Discuss if deviating from view of rapporteur member state*
Conclusion	*Discuss if deviating from view of rapporteur member state*
Reliability	*Discuss if deviating from view of rapporteur member state*
Acceptability	*Discuss if deviating from view of rapporteur member state*
Remarks	

Table A7_1_2(02)-1: Reference substances for co-chromatography

	Batch No.	**purity**
Chlorfenapyr	AC 8503-32A	97.3%
CL 312094 2-(p-chlorophenyl)-1-ethoxymethyl)-5-(trifluoromethyl)-pyrrole -3-carbonitrile	AC 8535-41B	98%

Table A7_1_2(02)-2: Characterization of the water/sediment systems

Designation / Origin		Loam/water system		Sand/water system	
		sediment	water	sediment	water
Sediment	sand [%]	16		99	
	silt [%]	27		--	
	clay [%]	57		1	
	pH ($CaCl_2$)	6.6		8.4	
	organic C	6.7%	<0.05mg/L	0.2%	34 mg/L
	total N	6.3 g/kg	<0.05mg/L	<0.05	<0.05mg/L
	total P [mg/kg]	899 mg/kg	<0.05mg/L	36 mg/kg	<0.05mg/L
	CEC [mVal/100g]	24		<0.05	
	Calcium		15 mg/L		23 mg/L
	Magnesium		2.7 mg/L		0.9 mg/L

Table A7_1_2(02)-3: HPLC Conditions

Pump	Gynkothek, Modell M 480
Detector	^{14}C Berthold radioactivity Monitor Modell 506A
Integrator	PC with "^{14}C Berthold" software
Control	PC with Gynkosoft
Column	Hypersil ODS, 250 x 4.6 mm , 5µm
Solvent	acetonitrile: water 80:20 (v:v)
Flow rate	1 mL/min
Retention time	Chlorfenapyr - 6.3 min CL 312,094 - 5.4 min

Table A7_1_2(02)-4: Material balance and distribution of radioactivity after application of [^{14}C]-chlorfenapyr to sand/water system

DAT	%TAR						
	water		sediment		volatiles		material balance
	CH_2Cl_2	remaining H_2O	MeOH	non-extractable	CO_2	others	
0	13	1	78	1	<1	<1	93
0	12	2	80	1	<1	<1	95
0.25	15	<1	82	1	<1	<1	98
0.25	14	1	81	1	<1	<1	97
1	11	1	80	1	<1	<1	93
1	11	1	82	1	<1	<1	95
2	13	1	79	1	<1	<1	94
2	13	1	79	1	<1	<1	94
7	11	1	82	1	<1	<1	95
7	12	1	84	1	<1	<1	98
14	13	1	77	1	<1	<1	92
14	11	1	80	1	<1	<1	93
30	11	1	81	2	<1	<1	95
30	9	1	82	2	<1	<1	94
60	13	2	70	2	<1	5	92
60	10	1	71	2	<1	10	94
101	15	<1	67	3	<1	3	89
101	11	2	68	3	<1	7	92

Table A7_1_2(02)-5: Material balance and distribution of radioactivity after application of [^{14}C]-Chlorfenapyr to loam/water system

DAT	%TAR					
	water	sediment		volatiles		material balance
		MeOH	non-extractable	CO_2	others	
0	1	94	4	<1	<1	99
0	3	93	4	<1	<1	100
0.25	2	97	4	<1	<1	103
0.25	2	96	4	<1	<1	102
1	2	93	4	<1	<1	99
1	2	92	4	<1	<1	98
2	2	90	5	<1	<1	97
2	2	90	5	<1	<1	97
7	2	90	5	<1	<1	97
7	1	86	4	<1	<1	92
14	1	89	5	<1	<1	95
14	1	91	5	<1	<1	97
30	1	86	6	<1	2	95
30	1	88	5	<1	3	97
60	2	92	6	<1	2	102
60	1	81	7	<1	6	95
100	1	87	7	<1	1	96
100	2	86	7	<1	2	97

Table A7_1_2(02)-6: Chlorfenapyr and metabolites in the methanol extracts of the sediments

DAT	%TAR		
	AC 303,630	CL 312,094	unknowns
Sand/water system			
0	79	<1	<1
0.25	82	<1	<1
1	81	<1	<1
2	79	<1	<1
7	82	<1	1
14	77	2	1
30	79	2	1
60	67	3	1
101	61	6	1
Loam/water system			
0	94	<1	<1
0.25	97	<1	<1
1	93	<1	<1
2	90	<1	<1
7	86	2	<1
14	87	4	<1
30	80	6	1
60	74	12	1
101	66	20	1

Table A7_1_2(02)-7: Chlorfenapyr and metabolites in the dichloromethane extracts of the water

DAT	%TAR		
	AC 303,630	CL 312,094	unknowns
Sand/water system			
0	12	<1	<1
0.25	14	<1	<1
1	11	<1	<1
2	13	<1	<1
7	11	<1	<1
14	10	2	<1
30	9	2	1
60	9	3	1
101	6	5	2
Loam/water system			
Insufficient radioactivity for HPLC			

Table A7_1_2(02)-8: Degradation rates of Chlorfenapyr in water/sediment systems

system	DT_{50} [days]	order	r^2
Sand/water system			
whole system	247.6 d	1st	0.91
water	113.6 d	2nd	0.86
sediment	217.9 d	1st	0.96
Loam/water system			
whole system	401.0 d	Root 1st	0.97
water	--[1]	--	--
sediment	417.6 d	Root 1st	0.98

[1] not determinable due to low levels and noise

Figure A7_1_2(02)-1: Experimental data and calculated degradation curve for chlorfenapyr in the sand/water system, sediment