ANNEX B

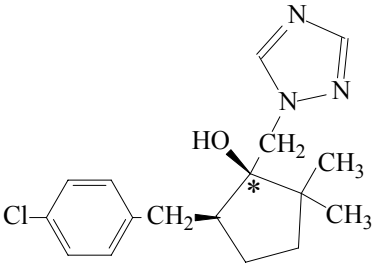
Metconazole

B.7 Residue data

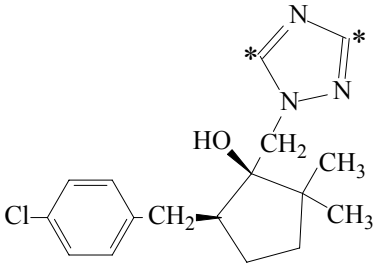
Introductory remarks
Metconazole is a member of the triazole group of fungicides and is referred to as demethylation-inhibiting fungicide.
Blockage of the synthesis of ergosterol, an important structural component of many fungal membranes, controls the fungus by interfering with synthesis of new membrane needed for cell growth.
Metconazole exists as two isomers (cis and trans) but the fungicidal activity of the compound appears to be largely associated with the (-)cis isomer. Metconazole is the active ingredient of the fungicide *CARAMBA 60 SL* which is used as a foliar treatment especially in cereals against rusts and *Septoria*.
When applied to foliage, metconazole is taken up into crop leaves, and exhibits penetrant, local and acropetal systemicity.

Metconazole :

Structural formula of [^{14}C -cyclopentyl]-Metconazole and [^{14}C -triazolyl]-Metconazole



[^{14}C-cyclopentyl]-Metconazole



[^{14}C-triazolyl]-Metconazole

Appendix D to this section contains the different metabolic pathways with the structure of metabolites for which only reference codes are given in this section, as well as the chemical names of synthetic reference compounds used in the metabolism studies.

B.7.1 Metabolism, distribution and expression of residues in plants (Annex IIA 6.1)

B.7.1.1 Metabolism, distribution and expression of residues of Metconazole in wheat

-(Triazole-^{14}C) WL136184 (KNF-S-474c) : Metabolism in wheat (Edwards V.T., 1991a)
-(Cyclopentyl-^{14}C)WL148271 (KNF-S-474m) : Metabolism in wheat (Edwards V.T., 1991b)
Guidelines :
EPA Pesticide Assessment Guidelines – Subdivision O

GLP :
yes
Material and methods :
Test substances : (Triazole –^{14}C)-WL136184 (cis metconazole); (cyclopentyl-^{14}C)WL148271 (*cis:trans* metconazole, *78:22*)
Experimental design :
The study was performed in UK.
Outdoor winter wheat plants were treated once (leaf spray application) with an application rate corresponding to 370 g a.s./ha (triazole moiety labelling) and 360 g a.s./ha (cyclopentyl moiety labelling).
Applications were performed at growth stage 57-60 (between 70% of inflorescence emerged and early anthesis) for both the 2 labelling forms.
At maturity (day 74), the plants were harvested and separated into grain, chaff and straw.
Extraction procedure :
Radioactivity contained in extracts of the different solid and liquid crop fractions was measured by radiocombustion analysis followed by Liquid Scintillation Counting (LSC).
The different crop plant parts were extracted with solvents (acetone, acetonitrile/water and water); the acetonitrile extract was partitioned against dichloromethane/ethyl acetate to give organic and aqueous phases.
Fractionation of the total radioactive residues were performed by 2D-TLC and HPLC analysis.
Purification of the metabolites fractions was performed using ion exchange and C18 column chromatography.
The effect of the enzymatic treatment (cellulase, β-glucosidase) as well as of acid and basic hydrolysis on the non extractable residues was investigated.
Characterization of the metabolites was carried out using 1D-TLC and normal/reversed phase HPLC by co-chromatography or by chromatographic comparison with reference compounds.
The chemical structure of the metabolites (triazolylalanine and triazolylacetic acid) was elucidated by derivatisation and mass spectrometry analysis.

Findings :

Table B.7.1.1-1 : Investigation of the amounts and the nature of the residues of (Triazole –^{14}C)-WL136184 and (cyclopentyl-^{14}C)WL148271 in wheat grain and straw following a foliar spray application at a rate of 370 g a.s./ha (residues expressed as mg metconazole equiv./kg).

Test substance	**(Triazole –^{14}C)-WL136184 (cis-isomer)**				**(cyclopentyl-^{14}C)WL148271 (cis:trans isomer)**			
Sample	**Grain**		**Straw (including chaff)**		**Grain**		**Straw**	
Total radioactive residues								
	% TRR	**mg/kg**	**% TRR**	**mg/kg**	**% TRR**	**mg/kg**	**% TRR**	**mg/kg**
	100	0.66	100	6.33	100	0.074	100	5.88
Extractability of the total radioactivity								
Solvent extraction phase	19.3	0.12	81.7	5.17	75.6	0.056	81.0	4.76
Water extraction phase	73.0	0.48	-	-	6.7	0.005	-	-
Organosoluble Dichloromethane/EtoAc partition phase	nd	nd	68.8	4.4	34.0	0.025	69.6	4.09
Water soluble phase	>98.0	>0.64	12.9	0.8	41.6	0.031	7.4	0.44
Elucidation of the total radioactive residues								
Parent compound	<2	<0.1	25.3	1.64	No analysis performed		31.7	1.87
Triazolyl alanine (T-ala), WL161416	33.3	0.22	nd	nd			nd	nd
Triazolyl acetic acid (T-aac), WL161417	9.0	0.06	nd	nd			nd	nd
Compound M1 (monohydroxylated metabolite)	nd	nd	nd	nd			4.6	0.27
Compound M11 CL382390 (monohydroxylated metabolite)	nd	nd	1.8	0.11			9.8	0.58
Compound M21 (monohydroxylated metabolite)	nd	nd	nd	nd			9.7	0.57
Compound M30 (ketone metabolite)	nd	nd	1.7	0.11			2.4	0.14
Total identified metabolites								
	44.3	0.38	28.8	1.84			58.2	3.43
Residual radioactive residues								
	4.3	0.03	18.3	1.16	10.1	0.007	14.2	0.83
Balance : extracted phases + residual radioactive residues								
	96.6	0.63	100.0	6.33	92.4	0.068	95.2	5.59

Notes :
nd : not radiodetected
Couples M1/M2 and M11/M21 are both stereoisomers.
The reference compounds were all cis isomers, so it was not possible to determine whether the trans isomer metabolites were present.

At harvest, the total amount of radioactive residues in grain for the triazole and cyclopentyl labelling forms raised 0.66 and 0.074 mg/kg respectively whereas the level of the residues in straw (day 74) accounted for 6 mg/kg for the two labelling moieties.
More than 82 % of the TRR could be extracted from grain and straw. After liquid/liquid partition, the extractable radioactivity was predominantly found in the water soluble phase for grain (42 % and up to 98 % of TRR for both the 2 label forms).
In grain, the parent compound was extensively metabolised into aqueous soluble metabolites identified as triazolylalanine (T-ala) and triazolylacetic acid (T-aac) which amounted respectively 33 % and 9 % of the TRR.
In straw, metconazole remained the major compound (up to 32 % of the TRR) while a large amount of the radioactive residues was characterized as monohydroxylated metabolites with further oxidation to form dihydroxylated or carboxylated metabolites.
In straw, a slight isomer conversion from cis to trans was observed (72:28, cis:trans).
In grain treated with the cyclopentyl label form, since very low levels of radioactivity were recovered (0.07 mg/kg), no tentative of further identification was attempted.
The different levels of radioactivity found in wheat grain can be explained by the different label positions applied.
The parent molecule was cleaved resulting in conjugated triazole metabolites (triazolyl-alanin, triazolyl-acetic acid). Metabolites such as triazolyl alanin are very well translocated and mainly detected in the non vegetative parts of plants where the metabolite is stored. Those metabolites formed the major part of the identified radioactivity. Due to the position of the radiolabel, these types of metabolites cannot be detected after application of the cyclopentyl label. The metabolite Triazolyl-alanin should also be a naturally occurring non-toxic component derived from the o-acetyl-serine and 1,2,4-triazole by cysteine synthases.
Conclusion :
The metabolic pathway of Metconazole in wheat may be established (see figure 2 in Appendix A to this section).
The main metabolic transformations in wheat proceed via :
-oxidation at the benzylic methylene and the methyl groups on the cyclopentane ring to give both hydroxymethyl and carboxy metabolites,
-oxidation at the methylene group next to the triazole ring to give mainly the triazole conjugates in grain.
The major constituant of the residue in grain, the Triazolylalanine metabolite and further minor metabolites, Triazolacetic acid and the metabolite M11 were not recovered in rat metabolism. Their toxicological relevance is discussed under point B.7.3 (definition of the residue).

B.7.1.2 Metabolism, distribution and expression of residues of Metconazole in Canola

-CL 900768 (Metconazole) : Metabolism of (Triazole-3,5-^{14}C)CL 900768 in Canola Under Field Conditions – Report MET 97-015 (Kao L.M.; 1997a)

Guidelines :
-US 40 CFR 158.240; US EPA Residue Chemistry Test Guidelines 860.1300
-EU Council Directive 91/414/EEC as amended Annex II, Part A 6.1
GLP :
yes
Material and methods :
Test substance : (Triazole-3,5-^{14}C)-CL 900768 (*cis:trans* metconazole, *98:2*)
Experimental design :
The canola plants were treated twice by foliar spray applications at a rate of about 264.5 g a.s./ha at early flowering stage and 14 days after the initial application. After each application (0 and 14 DAT1) and at 28 and 42 DAT1, canola plants were sampled. At maturity (58 DAT1), the treated plants were sampled into seed, pod and foliage for the determination of the total level of the radioactive residues.
Extraction procedure :
Radioactivity in the different plant parts was determined by radiocombustion analysis followed by Liquid Scintillation Counting (LSC).
Canola foliage and pods were extracted with methanol. The seeds were extracted several times with hexane and subsequently with methanol followed by partitioning against acetonitrile to give organic, aqueous and non extractable phases.
For characterization of “bound” radioactivity, the unextracted radioactivity was submitted to further extraction with water, mild acid, detergents and also to enzymatic hydrolysis (pepsin, cellulase).
Conjugated metabolites were subjected to enzyme hydrolysis with β-glucosidase. Isolation and tentative identification of the conjugates were performed by mass spectroscopy. Fractionation, purification and

characterization of the metabolites in the different organic phases were performed by HPLC analysis by co-chromatography with reference compounds.
The structure of the metabolites was elucidated by Mass spectroscopy analysis.
Findings :
Table B.7.1.2-1 : Investigation of the nature and amounts of residues of Metconazole in canola foliage, pods and seeds following 2 foliar applications of (Triazole 3-5-^{14}C)CL900768 at a rate of application of 264.5 g a.s./ha (Results expressed as mg metconazole equiv./kg - % of total radioactive residues)

Commodity	Foliage, 0 DAT1		Foliage, 14 DAT1		Foliage, 28 DAT1		Foliage, 42 DAT1		Pods, 58 DAT1		Seed, 58 DAT1	
	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR
Total radioactive residues												
	8.76	100	9.89	100	8.63	100	20.35	100	19.62	100	2.39	100
Extractable radioactive residues												
Hexane extraction phase	-	-	-	-	-	-	-	-	-	-	0.29	12.12
MeOH extraction phase	8.56	97.67	9.24	93.38	6.52	75.51	12.47	61.28	14.56	74.19	0.86	35.97
Elucidation of extractable radioactive residues												
Parent compound	8.13	92.9	7.20	72.8	4.77	55.3	11.53	56.7	3.32	16.4	0.57	24.1
Triazolylalanine (T-ala)	nd	nd	nd	nd	0.45	5.2	1.15	5.6	1.31	6.7	0.96	40.2
Compound M11 -CL 382390 (monohydroxylated metabolite of metconazole)	nd	nd	nd	nd	0.11	1.3	0.41	2.0	0.33	1.7	0.10	4.3
Glucose conjugate of monohydroxylated metconazole	nd	nd	0.29	3.0	0.84	9.6	2.85	14.0	7.19	36.5	0.18	8.0
Monohydroxylated metconazole	0.10	1.2	nd	nd	1.07	12.5	2.07	10.2	5.54	28.2	0.29	12.0
Unknown metabolites	0.19	2.2	nd	nd	0.14	1.7	0.54	2.7	0.43	2.3	0.01	0.6
Others*	0.12	1.4	1.74	17.6	0.46	5.3	0.57	2.8	0.22	1.1	0.11	4.6
Total identified metabolites	8.23	94.1	7.49	75.8	7.24	83.9	18.01	88.5	17.69	89.5	2.1	88.6
Unextractable radioactive residues												
	0.20	2.33	0.65	6.62	2.11	24.49	7.88	38.72	5.06	25.81	1.24	51.91
Elucidation of residual radioactive residues												
Acidic and enzymatic hydrolysis	0.19	2.13	0.31	3.12	0.62	7.2	4.91	24.13	0.77	2.38	0.10	4.29
Solvent extraction phase	-	-	-	-	0.74	8.53	1.74	8.53	3.31	16.79	0.23	9.44
Water extraction phase	-	-	-	-	-	-	-	-	0.05	0.28	0.76	31.71
Post extraction solids												
	0.02	0.2	0.35	3.50	0.76	8.75	1.24	6.07	1.25	6.36	0.15	6.47

Balance : extracted phases + residual radioactive residues												
	8.77	100.0	9.9	100.0	8.64	99.99	20.36	100.01	19.94	100.0	2.39	100.0

DAT1 : Days after treatment 1
Nd : not radiodetected.
-: extraction/analysis not performed.
*: fractions consisting of multiple unresolved peak areas
The increase of the radioactive residue level between foliage, 28 DAT1 and 42 DAT1 was most likely caused by the loss of water in the mature plants.

At harvest, the total level of radioactive residues in pods and seeds amounted 19.6 and 2.4 mg/kg respectively.
Combined extractions with polar solvents, mild acids, detergents and enzymatic digestion enabled the release of most of the radioactivity in the samples (more than 91 % of total radioactive residues).
Solvent extractabilities ranged between 48 % and 74 % of TRR respectively for seeds and pods.
12 % of the TRR in seeds were extracted by hexane and corresponded to the canola oil fraction.
The part of the radioactivity allocated to identified compounds reached 88 % of TRR both in seeds and pods.
The major constituent of the radioactive residues in foliage was the unchanged parent which accounted for 55 % to 93 % of the TRR at the various sampling intervals.
At harvest, parent compound and the metabolite Triazolylalanine (T-ala) were the predominant compounds recovered in canola seeds and accounted each for 40 % and 24 % of the TRR respectively.
Minor components including monohydroxylated derivates of the parent compound and its glucose conjugates were also characterized in foliage, pods and seeds.
It was shown that there was no marked change in the nature and the amount of radioactive residues during sample storage over a time period of 2 months and 7.5 months respectively for foliage, seed and pods.

-CL 900768 (Metconazole) : Metabolism of (*p*-Chlorophenyl-U-^{14}C)CL 900768 in Canola Under Field Conditions – Report MET- 97-016 (Kao L.M.; 1997b)

Guidelines :
-US 40 CFR 158.240; US EPA Residue Chemistry Test Guidelines 860.1300
-EU Council Directive 91/414/EEC as amended Annex II, Part A 6.1
GLP :
yes
Material and methods :
Test substance : (*p*-Chlorophenyl-U-^{14}C)CL 900768 (cis:trans metconazole)
Experimental design :
The canola plants were treated twice by foliar spray applications at a rate of 263.5 g a.s./ha at early flowering stage and 14 days after the initial application. After each application (0 and 14 DAT1) and at 28 and 42 DAT1, canola plants were sampled. At maturity (64 DAT1), the treated plants were sampled into seed, pod and foliage for the determination of the total level of the radioactive residues.

Findings :

Table B.7.1.2-2 : Investigation of the nature and amounts of residues of Metconazole in canola foliage, pods and seeds following 2 foliar applications of (*p*-Chlorophenyl-U-^{14}C)CL900768 at a rate of application of 263.5 g a.s./ha (Results expressed as mg metconazole equiv./kg - % of total radioactive residues)

Commodity	Foliage, 0 DAT1		Foliage, 14 DAT1		Foliage, 28 DAT1		Foliage, 42 DAT1		Pods, 64 DAT1		Seed, 64 DAT1	
	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR	mg/kg	% TRR
Total radioactive residues												
	10.79	100	14.95	100	5.60	100	5.92	100	20.67	100	1.85	100
Extractable radioactive residues												
Hexane extraction phase	-	-	-	-	-	-	-	-	-	-	0.27	14.4
MeOH extraction phase	10.55	97.73	14.24	95.27	4.10	73.13	4.41	74.5	12.46	60.28	0.64	34.7
Elucidation of extractable radioactive residues												
Parent compound	10.36	96.0	12.75	85.3	3.80	67.8	3.60	60.8	8.32	40.3	0.72	39.0
Compound M11 -CL 382390 (monohydroxylated Metconazole)	0.05	0.5	0.16	1.1	0.05	0.8	0.08	1.4	0.32	1.5	0.14	7.3
Glucose conjugate of monohydroxylated Metconazole	nd	nd	0.65	4.3	0.76	14.0	0.94	15.9	5.62	27.2	0.31	5.7
Monohydroxylated Metconazole	nd	nd	0.31	2.1	0.3	5.4	0.38	6.5	3.34	16.1	0.43	23.3
Unknown metabolites	nd	nd	0.19	1.3	0.03	0.7	0.30	4.9	0.61	2.9	0.05	2.7
Others*	0.13	1.3	0.19	1.3	0.32	5.8	0.42	7.1	0.51	2.5	0.08	4.2
Total identified metabolites	10.41	96.5	13.87	92.8	4.91	88.0	5.0	84.6	17.6	85.1	1.6	75.3
Unextractable radioactive residues												
	0.24	2.27	0.71	4.73	1.5	26.87	1.51	25.5	8.21	39.72	0.94	50.9
Elucidation of residual radioactive residues												
Acidic and enzymatic hydrolysis	-	-	-	-	0.91	16.07	0.11	1.9	0.48	2.34	0.06	3.3
Solvent extraction phase	-	-	-	-	0.33	5.89	1.22	20.69	5.81	28.12	0.34	18.2
Water extraction phase	-	-	-	-	-	-	-	-	-	-	0.42	22.6
Post extraction solids												
	-	-	-	-	0.27	4.9	0.17	2.91	1.92	9.29	0.13	6.8
Balance (ERR+URR)	10.79	100.07	14.95	100.0	5.6	106.0	5.92	99.95	14.38	100.0	1.85	100.0

ERR : extracted radioactive residues/URR : unextracted radioactive residues
DAT1 : Days after treatment 1
Nd : not radiodetected.
-: extraction/analysis not performed.
*: fractions consistng of multiple unresolved peak areas
The increase in residue concentration in the pod was most likely caused by loss of water in the mature plants.

Further extraction of the post extracted solid with mild acid, detergents, and enzymes resulted in more than 90% of extractability for all canola plant parts.
At harvest, the level of the residues in pods and seeds raised 20.67 mg/kg and 1.85 mg/kg, respectively.
The major compound in foliage was the unchanged parent which accounted for 60 % to 96 % of the TRR at the various sampling intervals.
The parent compound remains the predominant residue in the pods and seeds with up to 40 % of the TRR.
Minor components including monohydroxylated derivates of the parent compound and its glucose conjugates were also recovered in the different matrices.

Conclusion :
The metabolic pathway of Metconazole in Canola plants may be established (see figure 3 in Appendix A to this section).
No major qualitative differences have been observed between the 2 label forms.
The canola oil fraction was shown to contain mainly unchanged parent compound.
The numerous monohydroxylated metabolites and its glucose conjugates represented the distinguishable stereoisomeric structures due to the oxidative hydroxylation at the pro-chiral carbons of metconazole.
The main metabolic pathway of metconazole in canola consisted in oxidative hydroxylation of the methylene groups, the methyl groups on the cyclopentyl ring and also of the cyclopentyl ring. The presence of the metabolite triazolylalanine as a major compound in canola seeds (triazol label position) indicated that the methylene group between the triazole and cyclopentyl rings can also undergoes oxidative hydroxylation.
The metabolites Triazolylalanine (T-ala) and monohydroxylated Metconazole (M11) were not recovered in rat metabolism. Their toxicological relevance is discussed under point B.7.3 (definition of the residue).

B.7.2 Metabolism, distribution and expression of residues in livestock (Annex IIA 6.2)

B.7.2.1 Metabolism, distribution and expression of residues of metconazole in lactating goats

-The disposition of ^{14}C-WL148271 (KNF-S-474M) in the lactating goat (nature of residue study to EPA guidelines (Johnston A.M., Cameron S.A. and Young C.G.; 1992)
Guidelines :
-US EPA Pesticide Assessment Guidelines Subdivision O, Residue Chemistry, EPA Washington, October 1982
GLP :
yes
Material and methods :
Test substance : (Cyclopentanol-1-^{14}C)WL 148271 (*cis:trans* metconazole, *80:20*)
Experimental design :
2 lactating goats received a nominal daily dose corresponding to 25 mg/animal/day for 3 and 4 consecutive days respectively (equivalent to 14 and 25 mg/kg in diet for goat A and goat B respectively). This dose was administered by oral intubation.
Urine and faeces were collected daily whereas milk was collected twice in the morning and in the afternoon.
Plasma and blood level profiles were not investigated.
The animals were sacrificed 18 hours after the last administration and samples of muscle (fore and hind leg), liver, kidney, fat and bile were taken.
A balance of the administered dose was established both for the 2 goats.
Extraction procedure :
Levels of radioactivity in samples of tissues and excreta were measured by radiocombustion analysis and Liquid Scintillation Counting (LSC).
Faecal, liver and kidney samples were extracted with acetonitrile and subsequently with acetonitrile/water (90:10, v/v).
Bladder urine and bile were directly characterized by HPLC analysis.
Metabolites were characterized by HPLC and TLC by co-chromatography with parent compound.
Table B.7.2.1-1 gives the balance of the administered radioactivity as well as the total residue levels in edible organs and tissues.

Findings :
Table B.7.2.1-1 : Balance of the administered radioactivity and total radioactive residues in edible organs and tissues (in mg metconazole equiv./kg)

	Goat A		Goat B	
Sample	**TRR (mg/kg)**	**% of total dose**	**TRR (mg/kg)**	**% of total dose**
Urine		36.87		28.22
Faeces		30.38		25.38
Cage cleaning		1.32		0.96
Milk	0.004	na	0.004	na
Total excretion		***68.57***		***54.56***
Liver	0.456	na	0.559	na
Kidney	0.145		0.276	
Muscle (fore leg)	0.001		0.005	
Muscle (hind leg)	0.004		0.005	
Renal fat	Nd		Nd	
Deep body fat	0.015		0.003	
Bile	3.781		8.514	
Whole blood	0.018		0.029	
Plasma	0.024		0.035	
Bladder urine	11.206		57.550	
Total		***68.57***		***54.56***
Nd : not radiodetected Na : not applicable				

Taking into account the radioactivity eliminated with urine, faeces and cage cleaning, 69% of the administered radioactivity were recovered from goat A and 55% from goat B.
Milk : the level of total residues in milk was rather low indicating little secretion of radioactivity in milk. ~~A plateau couldn't be observed due to insufficient dosing days.~~
There is no evidence that a plateau has been reached within the dosing period of maximum 4 days as the levels of radioactivity in milk were very low. Therefore, the apparent increase of the radioactivity level in the milk from goat (from 0.002 mg/kg to 0.004 mg/kg) would not be considered as significant.
Liver and kidney were the organs with the highest level of residues (0.559 mg/kg and 0.276 mg/kg respectively).
Bile and bladder urine contained very high levels of total radioactivity (up to 8.51 and 57.55 mg metconazole equiv./litre, respectively), indicating urinary and biliary routes of elimination for the excretion of absorbed radioactivity.
The level of radioactive residues in fat and muscle was too low to enable any further metabolites identification.
The profiles of the metabolites present in urine, faeces, liver, kidney and bile were described using TLC and HPLC analysis.
The major constituant of the residue in liver was the parent compound together with a large amount of conjugated metabolites. Acid treatment yielded parent compound and several components characterized as monohydroxy-metabolites of metconazole.
In kidney, the main compound was the carboxylic acid metabolite M12 and a small amount of the isomer M13.

-Metconazole (^{14}C -WL148271): Nature of the ^{14}C -residues in selected tissues from the lactating goat (Richardson K.A.; 1992)
Guidelines :
-US EPA Pesticide Assessment Guidelines Subdivision O, Residue Chemistry, EPA Washington, October 1982
GLP :
yes
Material and methods :
Test substance : (Cyclopentyl-^{14}C)WL 148271 (cis:trans metconazole)
Experimental design :
Reference is made to the here above study : "The disposition of ^{14}C-WL148271 (KNF-S-474M) in the lactating goat" (nature of residue study to EPA guidelines (Johnston A.M., Cameron S.A. and Young C.G.; 1992).
Extraction procedure :
Liver, kidney and faeces were extracted with acetonitrile/water. After evaporation of acetonitrile, the aqueous residue was further extracted with methanol.
Muscle was extracted with methanol. Fat was extracted with dichloromethane with subsequent extraction with acetonitrile and hexane.
Liquid samples (urine, tissue and faecal extracts) were partitioned against different solvents.

Conjugated metabolites were subjected to acid hydrolysis to release further radioactivity.
The hydrolysed metabolites were characterized by normal and reverse phase TLC and HPLC analysis by co-chromatography with reference compounds.

Findings :
Table B.7.2.1-2 : Extractability and investigation of the nature and the amount of radioactive residues in edible tissues of the goat B after oral administration of the (Cyclopentyl-^{14}C)WL 148271 (feeding level : 25 mg/animal/day – 4 days)

Sample	**Liver**	**Kidney***	**Fat**	**Muscle**
TRR (mg/kg)	0.559	0.276	0.003	0.005
Extractability of residues (%TRR-mg metconazole equiv./kg)				
Acetonitrile/water extraction phase	88.0 (0.492)	89.0 (0.246)	61.0 (<0.014)	-
Methanol extraction phase	-	-	15.0 (<0.003)	82.0 (0.004)
Hexane extraction phase	-	-	20.0 (<0.005)	-
Partitioning of extracted residues followed by acid hydrolysis of aqueous soluble phase and partition mixture (%TRR-mg metconazole equiv./kg)				
Organosoluble phase	57.2 (0.319)	35.6 (0.098)	-	-
Aqueous soluble phase	30.8 (0.172)	53.4 (0.147)	-	-
Elucidation of radioactive residues (% TRR-mg metconazole equiv./kg)				
Parent compound (WL148271)	42.2 (0.236)	1.0 (0.003)	14.0 (<0.003)	13.0 (<0.001)
Monohydroxy-metabolite (polarity similar to M1)	2.9 (0.016)	13.7 (0.038)	-	Nd
Monohydroxy-metabolite (polarity similar to M2/M15)	10.3 (0.058)	3.6 (0.010)	-	Nd
Compound M12 (carboxylic acid metabolite)	-	20.0 (0.055)	-	Nd
Compound M13 (carboxylic acid metabolite)	-	1.0 (0.003)	-	Nd
Conjugates/polar compounds	22.7 (0.127)	53.0 (0.147)	-	Nd
Identified compounds	55.4 (0.31)	39.3 (0.109)	14.0 (<0.003)	13.0 (<0.001)
Residual radioactive residues (% TRR - mg metconazole equiv./kg)				
	12.0 (0.067)	11.0 (0.030)	4.0 (<0.001)	18.0 (0.001)
Recovery (ERR+URR)	100.0	100.0	100.0	100.0

ERR : extracted radioactive residues/URR : unextracted radioactive residues
Nd : not radiodetected.
- : not performed
* : Kidney and urine metabolite profiles were considered to be similar and therefore, urine samples could be used to identify the metabolites in kidney (values obtained from urinary radioactivity have been converted to equivalent kidney residues).
Note : the metabolites were identified by comparison with reference compounds (cis-isomers). So, it was not possible to determine the presence of trans isomers.

Extractabilities with different solvents ranged from 82 % of the TRR in muscle to 96 % of the TRR in fat.
The part of the radioactivity allocated to identified compounds varied between 13 % of the TRR in fat and muscle and 55 % of TRR in liver.

In liver, the parent compound was the major constituent of the residue (42 % of the TRR) with a cis/trans ratio of 34:66 indicating that the cis isomer of metconazole was more rapidly metabolised.. The remaining part of radioactivity has been characterized as a mixture of conjugated, polar and non polar metabolites.
The major part of the non polar metabolites was found to be monohydroxy-metabolites of metconazole.
In kidney, the major metabolite was recovered as the carboxylic acid metabolite M12 (20 % of the TRR) whereas the parent compound was recovered at a trace level (1 % of the TRR).
Acid hydrolysis showed that the remaining radioactivity consisted mainly in conjugates of monohydroxy metabolites (M1, M2) of metconazole and polar metabolites.
In muscle and fat, no further characterization was attempted because of the very low levels of radioactivity.

- (Cyclopentyl-^{14}C)-WL136184 (metconazole, KNF-S-474c) : Fate of WL 136184 in the lactating goat following 5 consecutive daily doses (23 mg/day) (Richardson K.A., 1993)
Guidelines :
-US EPA Pesticide Assessment Guidelines Subdivision O, Residue Chemistry, EPA Washington, October 1982
GLP :
yes
Material and methods :
Test substance : (Cyclopentyl-^{14}C)WL 136184 (cis-isomer of metconazole)
Experimental design :
One lactating goat was administrated orally a daily dose corresponding to 23 mg/animal/day (approximately 11 mg/kg in the feed commodity) for 4 consecutive days.
Urine and faeces were collected daily. Milk samples were collected twice in the morning and afternoon.
The animal was sacrificed 18 hours after the final dose and samples of liver and kidney were taken.
Extraction procedure :
Radioactivity in urine, milk, bile, plasma and extracts of tissues was measured directly by Liquid Scintillation Counting (LSC).
Radioactivity in tissues was determined by radiocombustion analysis and by LSC.
Different polar solvents were used to extract and partition the radioactivity present in the samples of liver, kidney, urine and faeces.
Fractionation of the metabolites into polar and non polar compounds was performed by HPLC analysis.
Acid hydrolysis was also performed on conjugated metabolites.
Metabolites were characterized and identified by TLC and normal/reverse phase HPLC co-chromatography with reference compounds.
The elucidation of the chemical structure of the metabolites was carried out using radio-LC and radio-GC/Mass spectroscopic analysis.
Findings :
The major part of the radioactivity administered was excreted with urine and faeces.
Taking into account the radioactivity eliminated with milk, urine, faeces and cage cleaning, more than 90 % of the radioactivity administered were recovered.
Liver and kidney were the organs with the highest level of residues (0.317 and 0.148 mg metconazole equi./kg respectively).
The level of radioactivity recovered in milk and fat was very low (0.002 mg metconazole equiv./kg and 0.006 mg metconazole equiv./kg respectively). ~~A plateau couldn't be observed in milk.~~
The plateau in milk was reached within the 4 days of dosing.

Table B.7.2.1-3 : Milk levels of total radioactivity following oral administration of ^{14}C-WL 136184 to a lactating goat once daily for 4 days –goats sacrificed 18 hours after the final administration.

Time point	ng equivalent/ml
Day 2 am	2
Day 2 pm	1
Day 3 am	2
Day 3 pm	1
Day 4 am	2
Day 4 pm	1
Day 5 am	2

Table B.7.2.1-~~3~~ 4 gives an overview of the balance of the administered radioactivity as well as the total residue levels in edible organs and tissues.

Table B.7.2.1-~~3~~ 4 : Balance of the administered radioactivity and total radioactive residues in edible organs and tissues (in mg cis-metconazole equiv./kg).

Sample	**TRR (mg/kg)**	**% of total dose**
Urine		43.41
Faeces		46.22
Cage cleaning		0.92
Milk	<0.002	na
Total excretion		***90.55***
Liver	0.317	na
Kidney	0.148	
Muscle (fore leg)	0.004	
Muscle (hind leg)	0.007	
Renal fat	nd	
Deep body fat	0.006	
Bile	4.922	
Whole blood	0.016	
Plasma	0.019	
Bladder urine	7.499	
GI tract		10.33
Carcass		0.49
Total		***101.37***
Na : not applicable		

Table B.7.2.1-~~4~~ 5 : Extractability and investigation of the nature and amount of the residues of cis-metconazole in edible tissues and excreta of a lactating goat orally dosed with (Cyclopentyl-^{14}C)WL 136184 (feeding level : 23 mg/animal/day) – Results expressed in % of the total radioactive residues and mg cis-metconazole equiv./kg.

Sample	**Liver**	**Kidney**	**Urine**
TRR	100 (0.317)	100 (0.148)	100 (7.499)
Extractability of radioactive residues			
Acetonitrile/water extraction phase	91 (0.288)	95 (0.141)	Not performed
Methanol extraction phase	-	-	
Partitioning of extracted residues			
Organosoluble phase	47.32 (0.150)	56.0 (0.080)	34.0 (2.549)
Water soluble phase	43.7 (0.138)	39.0 (0.055)	66.0 (4.949)
Acid hydrolysis of the aqueous partitioned phase			
Organosoluble phase (DCM)	40.2 (0.127)	-	-
Water soluble phase	3.5 (0.011)	-	-
Elucidation of the radioactive residues			
Parent compound	32.9 (0.105)	1.7 (0.003)	nd
Compound M1 (mono-hydroxy metabolite)	6.9 (0.022)	12.1 (0.018)	26.1 (1.957)
Compound M12 (Carboxylic acid metabolite)	nd	13.4 (0.020)	19.7 (1.477)
Compounds M2/19	nd	6.0 (0.009)	nd
Compound M31 (3-hydroxy-metabolite)	20.1 (0.063)	15.2 (0.022)	35.3 (2.647)
Compound M32 (3-hydroxy-metabolite)	4.1 (0.013)	7.7 (0.011)	6.1 (0.457)
Compounds M19/M15 (phenol metabolites)	2.7 (0.009)	Nd	-

Unknown compounds	19.9 (0.063)	38.7 (0.057)	12.8 (0.959)
Total identified compounds	66.7 (0.212)	56.1 (0.083)	87.2 (6.539)
Residual radioactive residues			
	9.0 (0.029)	5.0 (0.007)	
Balance : extracted acetonitrile/water + extracted methanol + residual radioactive residues.			
	100.0 (0.288)	100.0 (0.141)	

Notes :
Nd : not radiodetected.
- Metabolites M31 and M32 are diastereoisomers.
- The metabolites in the extracts from goat kidney and liver were characterized and identified by comparison with metabolites found in goat urine.
- In faeces, the 3-hydroxy metconazole metabolite M31 was identified but without any further quantification.

Combined extraction with solvents and acid hydrolysis allowed the solubilization of most of the radioactivity (table B.7.2.1-4).
The part of the radioactivity allocated to identified compounds varied from 56 % of the TRR in kidney to 66 % of the TRR in liver.
The major metabolite recovered in liver was the parent compound with 33 % of TRR while
in kidney, it accounted only for 1 % TRR suggesting an extensive degradation of metconazole into a large number of polar metabolites. The relevant metabolites in kidney were found to be M1 (12 % TRR), M12 (13 % TRR) and M31 (15 %TRR).
No further investigation for metabolites characterization was attempted in milk, fat and muscle due to the low level of radioactive residues.

Conclusion :
The degradation pathway of metconazole in lactating goats is depicted in figure 4 in Appendix A to this section.
The principal metabolic pathway of metconazole in lactating goats was the oxidative hydroxylation of the methyl groups on the cyclopentane ring to give both hydroxymethyl and carboxy metabolites. The other sites of oxidation were the methylene groups of the cyclopentane ring and the aromatic ring to give mainly mono-hydroxy metabolites.
All the metabolites that were found in the goat metabolism were also recovered in the rat metabolism and were therefore covered by the toxicological dossier.

B.7.2.2 Metabolism, distribution and expression of residues of metconazole in laying hens

- The disposition of ^{14}C -WL136184 (cis-isomer of metconazole) in the laying hen (nature of residue study to EPA guidelines) (Johnston A.M., Cameron S.A., Young C.G.; 1991)
Guidelines :
US EPA Pesticide Assessment Guidelines Subdivision O : Residue Chemistry, USEPA, October 1982 for the nature of the Residue in Livestock.
GLP :
Yes.
Material and methods :
Test substance : (Cyclopentyl-^{14}C)WL 136184 (cis-isomer of metconazole)
Experimental design :
5 groups of 3 laying hens received daily doses by oral gavage of the test substance (dosing rate : 1.5 mg/bird/day equivalent to a dietary intake of 10 ppm in feed) for 28 consecutive days.
Excreta and eggs were collected daily. Eggs were separated into white, yolks and shells. The groups of 3 hens were sacrificed at each of 6, 18, 48, 96 and 144 hours after the last dose and samples of blood, skin, breast muscle, heart, liver, kidney, gizzard and carcass were taken.
Extraction procedure :
Total radioactive residues in the various liquid and solid extracts of tissues were measured by radiocombustion analysis and Liquid Scintillation Counting (LSC).
Findings :
Metconazole was rapidly eliminated in laying hens. Within 6 hours after the last dose, more than 96 % of the total administered radioactivity was recovered. The major part of the radioactivity (92 %) was allocated to the excreta.

The highest residue levels were observed in liver and kidney (0.6 and 0.327 mg cis-metconazole equiv./kg in these tissues respectively).
Eggs: The levels of total residues in the whites, yolks and whole eggs amounted 0.048, 0.165 and 0.083 mg cis-metconazole/kg respectively at the last day of dosing and 24 hours after the sacrifice, these levels decreased until 0.008, 0.148 and 0.055 mg cis-metconazole/kg respectively. The plateau level in eggs occurred after 8 days of dosing corresponding to the residue levels of 0.059, 0.183 and 0.096 mg cis-metconazole equiv./kg for white, yolk and whole eggs respectively.

Table B.7.2.2-1 : Recovery of radioactivity in hen tissues and total excreta after oral administration of (Cyclopentyl-^{14}C)WL 136184 (cis-isomer of metconazole)
(% of total administered radioactivity and total radioactive residues expressed as mg cis metconazole equiv./kg).

Hen group	**1**		**2**		**3**		**4**		**5**	
Sacrifice time after Last Dose	**6 h**		**18 h**		**48 h**		**96 h**		**144 h**	
	% of total dose	**TRR (mg/kg)**	**% of total dose**	**TRR (mg/kg)**	**% of total dose**	**TRR (mg/kg)**	**% of total dose**	**TRR (mg/kg)**	**% of total dose**	**TRR (mg/kg)**
Excreta	92.26		91.37		96.62		96.90		96.12	
Cage washings	3.39		3.35		2.21		2.88		3.21	
Carcass	1.08		0.96		0.14		0.07		0.05	
Total excretion	***96.73***		***95.68***		***98.97***		***99.85***		***99.38***	
Liver	na	0.6	na	0.314	na	0.067	na	0.041	na	0.025
Kidney		0.327		0.157		0.045		0.025		0.020
Heart		0.063		0.024		0.004		nd		nd
Breast muscle		0.027		0.010		nd		nd		nd
Skin		0.078		0.056		0.016		0.006		nd
Blood		0.089		0.049		0.025		0.021		0.016
Gizzard		0.379		0.108		0.007		0.002		nd
Fat		0.145		0.045		0.013		0.013		nd
Nd : not radiodetected. Na : not applicable										

- The disposition of ^{14}C -WL136184 (cis-isomer of metconazole) in the laying hen (nature of residue study to EPA guidelines) (Johnston A.M., Cameron S.A., Young C.G.; 1992)
Guidelines :
US EPA Pesticide Assessment Guidelines Subdivision O : Residue Chemistry, USEPA, October 1982 for the nature of the Residue in Livestock.
GLP :
Yes.
Material and methods :
Test substance : (Cyclopentyl-^{14}C, Triazole-^{13}C)WL 136184 (cis-isomer of metconazole)
Experimental design :
5 groups of 3 laying hens received daily doses by oral gavage of the test substance (dosing rate : 1.5 mg/bird/day equivalent to a dietary intake of 10 ppm in feed) for 14 consecutive days.
Excreta and eggs were collected daily. Eggs were separated into white, yolks and shells. The animals were sacrificed 6 hours after the last dose administration and samples of blood, skin, fat, breast muscle, heart, liver, kidney, gizzard and carcass were taken.
Extraction procedure :
Level of total radioactivity in liquid and solid extracts of tissues was measured by radiocombustion analysis and Liquid Scintillation Counting.

Levels of total radioactivity were measured in the whites, yolks of eggs and in whole eggs collected on days 8, 12 and 14.
Findings :
~~For both the egg whites and yolks, the level of the total residues reached a plateau by day 8 corresponding to the rate of 0.069 and 0.177 mg cis-metconazole equiv./kg respectively.~~
The levels of the total radioactivity in the whites and yolks of eggs examined were consistent with those observed in the previous study (Johnston A.M, Cameron S.A., Young C.G., 1991).
Levels of total radioactivity detected in the whites of eggs collected on days 8, 12 and 14 were similar from sampling day 8 to sampling day 14 (60-69 ng equivalent/g).
Similarly, the levels of radioactivity in egg yolks ranged between 176 to 179 ng equivalent/g from day 8 to day 14.
Levels of radioactivity in whole eggs ranged from 73 to 116 ng equivalent/g for the same sampling interval.
At sacrifice, 6 hours after the final dose, liver and kidney contained the highest levels of total radioactive residues (0.658 and 0.361 mg cis-metconazole equiv./kg) while the total residues in muscle, skin and fat amounted 0.024, 0.069 and 0.129 mg cis-metconazole equiv./kg respectively.
Conclusion :
The metabolic pathway of the parent compound in laying hens was not investigated. However, considering the highest likely feeding rate (~~0.079~~ 0.093mg/kg diet) calculated in section B.7.8, the total radioactive residues in edible tissues were negligible (<0.01 mg/kg). Therefore, no further characterization was required.

B.7.2.~~2~~ 3 Metabolism, distribution and expression of residues of metconazole in pigs

No particular degradation pathway has been observed in goat in comparison to rats. Consequently, a pig metabolism study is not required.

B.7.3 Definition of the residue

Structures of metabolites discussed in this point may be found in the metabolic pathways presented for plant products in Appendix A to this section. This appendix contains also a table which indicates the occurrence of metabolites of metconazole in plants and livestock, in comparison with the rat.

B.7.3.1 Definition of the residue in plant products

In the plant metabolism studies conducted in wheat and oilseed rape, the parent compound, triazolyl alanine and triazolyl acetic acid were identified as the major components of the total residues.
Triazolyl alanine and triazolyl acetic acid accounted for the major residue compounds in wheat grain while in oilseed rape, the parent compound was if not the major constituent of the residue, at least a valid indicator of the level of contamination of the commodity.

In both crops, the primary metabolic pathway for metconazole proceeds by oxidative hydroxylation of the benzylic methylene group, the methyl side chain on the cyclopentyl ring, and potentially the cyclopentyl ring to produce monohydroxylated metabolites of metconazole which are further conjugated through glycosidation.
The presence of triazolyl alanine and its acetic acid derivative suggested that the methylene group between the triazole ring and the cyclopentyl ring is also susceptible to oxidative hydroxylation.

The metabolic pathway of metconazole in plants can be considered as sufficiently investigated (see figures 1 and 2 – Appendix A to this section).

Most of the identified metabolites were also observed in the rat metabolism and may be therefore considered as covered by toxicological studies.

Two metabolites triazolyl alanine and its metabolite triazolyl acetic acid identified in wheat and oilseed rape were not recovered as rat metabolites :

- Triazolyl alanine is a major plant metabolite of various triazole fungicides, including metconazole. The acute toxicity is low (LD50 >5000 mg/kg bw). The compound appeared devoid of genotoxic activity. Based on the available information, it was concluded that triazolyl alanine and its metabolite triazolyl acetic acid were not toxicologically relevant.
- In conclusion, there is no necessity to include these metabolites in the residue definition as they are of no toxicological concern.

A completely validated method of analysis is available for the determination of residues of metconazole as cis- and trans-isomer in cereals and oilseed rape.

The residue definition for compliance with MRLs proposals is proposed as the parent compound (cis- and trans-isomers) only.
The same definition applies for risk assessment.

B.7.3.2 Definition of the residue in animal products

Metabolism studies have been submitted in lactating goats and laying hens.

The metabolism study in lactating goat indicated an extensive degradation of the parent compound. In all tissues, metconazole was, if not the major component of the total residue, at least a valid indicator of the level of contamination of the commodity.
In lactating goats, the parent compound was metabolised through oxidative processes, which included monohydroxylation of the cyclopentyl rings, monohydroxylation of the methyl group on the cyclopentyl ring, which is further oxidized to carboxylic acid metabolites. Conjugates of the monohydroxymetabolites were tentatively characterized.

All the metabolites identified in goat tissues were identical or structurally similar to those recovered in the rat. Therefore, no toxicological relevant metabolites were detected.

In laying hens, no degradation pathway could be established since no tentative characterization of the metabolites was attempted. However, the theoretical intake calculation showed that the trigger value of 0.1 mg/kg diet was not exceeded. Therefore neither a hen metabolism study nor a feeding study should be required.
A multi-residue method of analysis for the determination of residues of metconazole as its cis-and trans-isomers in milk, egg, meat and fat is available.

Residues of metconazole can be considered as fat soluble due to the value of the partition coefficient n-octanol/water which is >3 (log P*ow* metconazole (cis/trans) =3.85 at 20°C).

The residue definition for compliance with MRLs proposals is proposed as the parent compound (cis- and trans-isomers) only.
The same definition applies for risk assessment.

B.7.4 Use pattern

Table B.7.4-1 : Intended uses of Metconazole in the EU – Foliar application

Crop and/or situation (a)	Member State or Country	Formulation name	F, G or I (b)	Pests or Group of pest controlled (c)	Formulation		Application				Application rate per treatment			PHI (days) (k)	Remarks (l)
					Type (d-f)	Conc. Of a.s. (i)	Method kind (f-g)	Growth stage (j)	Number min max	Interval between applications; minimum	kg a.s./hl min max	water l/ha min max	kg a.s./ha		
Winter/ spring wheat	North and South Europe	Caramba 60 SL	F	*Septoria spp.* *Septoria nodorum* *Septoria tritici* *Erysiphe graminis* *Puccinia striiformis* *Puccinia recondita* *Fusarium spp.* *Fusarium roseum* *Cladosporium spp.*	SL	60 g/l	spray	BBCH 29-69	1-2	14	0.0225-0.045	200-400	0.090	35	
Winter/ spring barley	North and South Europe	Caramba 60 SL	F	*Erysiphe graminis* *Puccinia hordei* *Rynchosporium secalis* *Pyrenophora teres*	SL	60 g/l	spray	BBCH 29-69	1-2	14	0.0225-0.045	200-400	0.090	35	
Winter/ spring oats	North and South Europe	Caramba 60 SL	F	*Puccinia avenae*	SL	60 g/l	spray	BBCH 29-69	1-2	14	0.0225-0.045	200-400	0.090	35	
Rye	North and South Europe	Caramba 60 SL	F	*Erysiphe graminis* *Rynchosporium secalis* *Puccinia recondita*	SL	60 g/l	spray	BBCH 29-69	1-2	14	0.0225-0.045	200-400	0.090	35	
Triticale	North and South Europe	Caramba 60 SL	F	*Septoria spp.* *Puccinia recondita*	SL	60 g/l	spray	BBCH 29-69	1-2	14	0.0225-0.045	200-400	0.090	35	
Oilseed rape	North and South Europe	Caramba 60 SL	F	*Phoma lingam* *Alternaria spp.* *Alternaria brassicae* *Scerotinia sclerotiorum* *Erysiphe graminis* *Cylindrosporium spp.*	SL	60 g/l	spray	BBCH 14-73	1-2	14	0.0225-0.045	200-400	0.090	56	

B.7.5 Identification of the critical GAPs

See Table B.7.4

B.7.6 Residues resulting from supervised trials (Annex IIA 6.3; Annex IIIA 8.1)

Analytical method :
Methods FAMS 050-01 and FAMS 059-02 were suitable for the determination of the total residues of Metconazole calculated as the sum of the cis- and trans- isomers of Metconazole and expressed as total metconazole equivalent in cereals (wheat, barley, triticale, rye and oat) and oilseed rape respectively.
These methods were completely validated for the Limits of Quantification of 0.01 mg/kg (each isomer) for cereal grains and oilseeds and 0.03 mg/kg (each isomer) for cereal straw and plants with ears removed.
Basically, the analytical design for both methods consisted of extraction with solvent mixtures followed by partitioning against Ethyl Acetate. Further clean-up was carried out by gel permeation chromatography.
The residues of Metconazole (sum of isomers) in cereal grain and oilseed rape was determined by GC/NPD using the reference compounds.
The average recovery values for the cis- and trans- isomers of metconazole was acceptable.

A total number of 19, 1,1 and 20 supervised residue trials were provided respectively for winter wheat, triticale, winter rye and oilseed rape covering Northern and Southern Europe. As regards winter/spring barley crop, 16 trials were provided for Northern Europe only.

For most of the available trials, samples of whole plants were taken at different growth stages (PHIs) up to harvest and grain and seed were sampled at maturity.
Remark: In some residue trials, the metabolite *Triazolylalanine* was determined according to the "Method for the gas chromatographic determination of Triazolylalanine residue in plant material" (R. Brennecke, BAYER AG, 1987).
All the submitted studies were carried out under GLP conditions.

Summary tables :
The residue data are summarized according to the standard summary sheets in appendix C to this section. The figures selected for statistical analysis and MRL proposals are indicated in bold and underlined in the summary sheets.

B.7.6.1 Residues resulting from supervised trials – Cereals

Samples of whole green plants at day 0 as well as samples of ears, plants with ears removed, straw and grains at different PHIs up to normal harvest time were analysed for parent compound.

-*Winter wheat*
Findings :
*North, winter wheat, 85-90 g a.s./ha, 2 applications – BBCH : 32-39; 65-79 , PHI : 35 days :
-grain : <0.002, <0.02, <0.02, <0.01, <0.01, <0.01, <0.01, 0.04 mg/kg
-straw : 0.25, 0.44, 0.53, 0.75, 0.64, 0.76, 0.57, 0.87 mg/kg
*South, winter wheat, 82-95 g a.s./ha, 2 applications – BBCH : 33-39; 65-77, PHI : 35 days :
-grain : <0.02, <0.02, <0.02, <0.02, <0.02, <0.02, 0.05, 0.03 mg/kg
-straw : 0.57, 0.23, 0.23, 0.23, 0.27, 0.30, 0.30, 0.16 mg/kg
Conclusion :
In the North : 8 trials – 3 x mean: 0.045 – STMR: 0.01 – Rmax: 0.052 – Rber: 0.04 mg/kg;
In the South : 8 trials – 3 x mean: 0.075 – STMR: 0.02 – Rmax: 0.059 – Rber: 0.055 mg/kg.

MRL proposal for wheat grain : 0.05 mg/kg.

-*Winter/spring barley*
Findings :
*North, barley, 89-96 g a.s./ha, 2 applications BBCH 33; 71-75, PHI : 35-37 days :
-grain : <0.01, 0.09, 0.03, 0.02, 0.01, 0.03, 0.01, <0.01, 0.05, 0.05, 0.03, 0.03, 0.01, 0.03, <0.01, <0.01 mg/kg

-straw : 0.13, 1.06, 1.61, 0.23, 0.82, 0.99, 0.37, 0.15, 0.18, 0.73, 0.22, 1.33, 0.74, 1.37, 0.32, 0.03 mg/kg
*South : The 4 trials submitted were carried out under GLP conditions with the representative formulation metconazole 60 g/L SL applied 2 times (BBCH 51-83) at a target dose rate of 90 g a.s./ha with a PHI of 35 days
-grain : 0.03, 0.03, 0.05, 0.04 mg/kg
-straw : 1.5, 1.3, 2.6, 1.4 mg/kg
The residue data from these additionally 4 barley trials run in Southern Europe showed a residue profile for grain and straw which is comparable to those obtained by the results from the trials run in the Northern part of the EU.
Conclusion :
In the North : 16 trials – 3 x mean: 0.08 – STMR: 0.025 – Rmax: 0.081 – Rber: 0.06 mg/kg;
In the South : 4 trials.

MRL proposal for barley grain : 0.1 mg/kg with possible extrapolation to oat (for Northern Europe only) according to EU Doc. 7525/VI/95-rev.7 (Table 3).

-*Winter rye*
Findings :
*North, rye, trial performed in accordance with the critical GAP.
-grain : <0.01 mg/kg
-straw : 0.37 mg/kg
*South : no residue trials provided.

-*Triticale*
Findings :
*North, triticale, trial performed in accordance with the critical GAP.
-grain : <0.01 mg/kg
-straw : 0.16 mg/kg
*South : no residue trials provided.

Possible extrapolation from wheat residue database to rye and triticale according to EU Doc. 7525/VI/95-rev.7 (Table 3)

MRL proposal for rye and triticale : 0.05 mg/kg.

B.7.6.2 Residues resulting from supervised trials – Oilseed rape

Samples of plants without roots at different PHIs up to normal harvest time and seeds were analysed for parent compound.
Findings :
*North, oilseed rape, 90 g a.s./ha, 2 applications – BBCH : 63-67; 69-71 , PHI : 56-70 days :
-seed : <0.01, <0.01, <0.01,<0.01, <0.01, 0.06, 0.04, 0.07 mg/kg.
*South, oilseed rape, 79-90 g a.s./ha, 2 applications – BBCH : 65; 69-75, PHI : 56-63 days :
-seed : 0.04, 0.03, 0.11, 0.05, <0.01, 0.02, 0.05, 0.02, 0.02 mg/kg
~~The residue value "0.11" can be considered as an outlier according to the DIXON Q- test.~~
Conclusion :
In the North : 8 trials of which 3 give positive results up to 0.07 mg/kg.
In the South : 9 trials – 3 x mean: 0.116 – STMR: 0.03 – Rmax: 0.130 – Rber: 0.1 mg/kg.

MRL proposal for oilseed rape : 0.1 mg/kg

B.7.7 Effects of industrial processing and/or household preparation on the residue (Annex IIA 6.5; Annex IIIA 8.4)

B.7.7.1 Effects on the nature of the residues

Such studies are not required at this stage for the following reasons :
- the TMDI is below 10% of the ADI;

- no significant residues (>0.1 mg/kg) occur in the plant products which would be processed.

B.7.7.2 Effects on the level of the residues

Not required.

B.7.8 Livestock feeding studies (Annex IIA 6.4; Annex IIIA 8.3)

Intake calculations for livestock (according to appendix G of the "Guidelines for the establishment of Community Maximum Residue Levels (MRLs) of Plant protection Products in Food and Feedingstuffs of Plant and Animal Origin") are presented here below.

Table B.7.8-1 : Intake calculations for dairy cattle (maximum daily intake of dry matter : 20 kg for 550 kg body weight)

Commodity	% of diet	Intake of DM (kg/animal /day)	% DM in material	Intake of fresh crop (kg/animal/day)	Residue in material (mg/kg)	Residue Intake (mg/animal/day)	Intake by Crop
Barley Grain	40	8	86	9.30	0.1 (1)	0.93	0.93
Cereal Straw	20	4	86	4.65	1.61 (2)	7.48	7.48
Oilseed rape	30	6	86	6.98	0.1 (3)	0.698	0.698
						mg/animal/day:	**9.108**
						mg/kg bw/day:	**0.016**
						mg/kg diet:	**0.44**

(1) : provisional MRL for barley for Northern Europe only.
(2) : maximum value found in straw of winter barley for parent compound. No information is given on the residue level in processed rape seed into meal or cake. Therefore, MRL on RAC is considered for intake calculations.

The maximum dietary burden is calculated as 0.44 mg/kg of diet and therefore, the first criterion to require a dairy cattle feeding study is triggered.

Table B.7.8-2 : Intake calculations for beef cattle (maximum daily intake of dry matter : 15 kg for 350 kg body weight)

Commodity	% of diet	Intake of DM (kg/animal /day)	% DM in material	Intake of fresh crop (kg/animal/day)	Residue in material (mg/kg)	Residue Intake (mg/animal/day)	Intake by Crop
Barley Grain	80	12	86	13.95	0.1(1)	1.395	1.395
						mg/animal/day:	**1.395**
						mg/kg bw/day:	**0.0039**
						mg/kg diet:	**0.093**

(1): provisional MRL for barley for Northern Europe only.

The maximum dietary burden is calculated as 0.093 mg/kg of diet and therefore, the first criterion to require a beef cattle feeding study is not triggered.

Table B.7.8-3 : Intake calculations for chicken (maximum daily intake of dry matter : 0.12 kg for 1.9 kg body weight)

Commodity	% of diet	Intake of DM (kg/animal /day)	% DM in material	Intake of fresh crop (kg/animal/day)	Residue in material (mg/kg)	Residue Intake (mg/animal/day)	Intake by Crop
Barley Grain	70	0.084	86	0.0976	0.1(1)	0.00976	0.00976
Oilseed rape	10	0.012	86	0.0139	0.1(2)	0.00139	0.00139
						mg/animal/day:	**0.01115**
						mg/kg bw/day:	**0.006**
						mg/kg diet:	**0.093**

(1): provisional MRL for barley for Northern Europe only.
(2) : : No information is given on the residue level in processed rape seed into meal or cake. Therefore, MRL on RAC is considered for intake calculations.

The maximum dietary burden is calculated as 0.093 mg/kg of diet and therefore, the first criterion to require a chicken feeding study is not triggered.

Table B.7.8-4 : Intake calculations for pigs (maximum daily intake of dry matter : 3 kg for 75 kg body weight)

Commodity	% of diet	Intake of DM (kg/animal/day)		% DM in material	Intake of fresh crop (kg/animal/day)	Residue in material (mg/kg)	Residue Intake (mg/animal/ day)
Commodity/	**% of diet**	**Intake of DM (kg)**	**% DM**	**Intake of fresh crop (kg)**	**Residue (mg/kg)**	**Residue Intake (mg)**	**Intake by Crop**
Barley Grain	80	2.4	86	2.8	0.1(1)	0.28	0.28
Oilseed rape	20	0.6	86	0.69	0.1(2)	0.069	0.069
						mg/animal/day:	**0.349**
						mg/kg bw/day:	**0.0046**
						mg/kg diet:	**0.116**

(1): provisional MRL for barley for Northern Europe only.
(2) : No information is given on the residue level in processed rape seed into meal or cake. Therefore, MRL on RAC is considered for intake calculations.

Intake calculations for pigs indicate that slight exposure can be expected (0.116 mg/kg diet).

B.7.8.1 Livestock feeding studies in lactating cows or goats

The study is not required considering that non significant residues (<0.01 mg/kg) may occur in the edible animal tissues taking into account the residue levels in potential feedingstuffs at the 1 x dose rate.

B.7.8.2 Livestock feeding studies in poultry

There is no requirement for a feeding study in hens.

B.7.8.2 Livestock feeding studies in pigs

A metabolism study in pigs was not required as metabolic pathways in rat and in goat can be considered as similar. For the same reason, a feeding study in pigs is not required. Moreover, intake calculations for pigs indicate that no significant exposure can be expected.

B.7.9 Residues in succeeding or rotational crops (Annex IIA 6.6; Annex IIIA 8.5)

-Metconazole : Confined rotational crop study using (Cyclopentyl-^{14}C)- and (Triazole-^{14}C)- WL 148271 (Hill A.D. and Standen M.E. 1993)
Guidelines :
German regulatory requirements (BBA guidelines for the official testing of plant protection products, Part IV, 3-10)
GLP :
Yes.
Material and Methods :
Test substances : (Cyclopentyl-^{14}C)- and (Triazole-^{14}C)- WL 148271.
Experimental design :
The study was carried out under glasshouse conditions.
Prior to seeding or planting the representative rotational crops (wheat, lettuce and radish), the test substance corresponding to a rate of use of 400 g a.s./ha had been aerobically aged in the soil for either 30 or 120 days. After the relevant ageing period (30 or 120 days), the surface of the soil was lightly turned over to simulate normal agricultural practice. Seeding was done on the following day, either 30 or 120 days after soil treatment.
When compared to the submitted critical GAPs, this application rate exceeded the recommended rate by a factor of 4.
After the relevant ageing period, crops were successfully grown in pots containing the treated soil.
Soil and plant samples were dosed by radio combustion analysis followed by Liquid Scintillation Counting.
Extraction procedure :
The various plant parts were extracted several times with acetonitrile/water followed by partitioning against Ethyl Acetate to give organic, aqueous and non extractable fractions.
The extractable radioactivity in soil samples and in mature samples from the rotational crops was fractionated by HPLC and the metabolites structures were elucidated by normal phase 1D TLC and reverse/normal phase HPLC with reference standards.
Acid hydrolysis was performed on aqueous fractions to provide evidence for the presence of carboxylic metabolites, triazolyl and glucoside conjugates.
Derivatisation of metabolites T-ala and T-aac into volatile derivates was conducted as an aid in gas chromatography analysis. Their chemical structure was analysed by radio-GC/MS.

Findings :

Table B.7.9-1 : Radioactive residue levels in rotational crops following application of the (Cyclopentyl-^{14}C)-WL 148271 to bare soil (residues expressed as Metconazole equiv./kg and in percent of the total radioactive residues).

Sample commodity	**Total radioactive residues (Residues expressed as Metconazole equiv./kg).**		**Extractable (% of TRR)**		**Organo-soluble metabolites phase (% of TRR)**		**Water-soluble metabolites phase (% of TRR)**		**Non extractable (% of TRR)**	
Ageing period (days)	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**
Radish whole plant	0.24	0.19	Not performed							
Radish foliage	0.40	0.68	94.9	-	55.0	-	39.9	-	5.1	-
Radish root	0.32	0.37	83.9	-	61.1	-	22.8	-	16.1	-
Lettuce whole plant	0.13	0.04	Not performed							
Lettuce foliage	0.03	0.10	-	83.6	-	44.9	-	38.7	-	16.4
Lettuce root	0.36	0.63	Not performed							
Immature wheat foliage	0.15	0.13								
Immature wheat foliage	0.35	0.25								
Mature wheat grain	0.01	0.01								
Mature wheat chaff	0.17	0.15	Not performed							
Mature wheat straw	0.73	0.70	-	90.7	-	36.8	-	52.2	-	9.3
Mature wheat root	0.90	0.65	Not performed							

- : not analysed.

Argumentation of the notifier : As the only significant difference in the characterization of both radiolabelled fractions at 30 days ageing period was the presence of the triazolyl conjugates, the analysis was limited to the triazolyl labelled fraction for the samples collected in the 120 days ageing period.

Table B.7.9-2 : Radioactive residue levels in rotational crops following application of the (Triazole-^{14}C)-WL 148271 to bare soil (residues expressed as Metconazole equiv./kg and in percent of the total radioactive residues).

Sample commodity	**Total radioactive residues (Residues expressed as Metconazole equiv./kg).**		**Extractable (% of TRR)**		**Organo-soluble metabolites phase (% of TRR)**		**Water-soluble metabolites phase (% of TRR)**		**Non extractable (% of TRR)**	
Ageing period (days)	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**
Radish whole plant	0.31	0.14	Not performed							
Radish foliage	0.65	0.84	95.4	91.8	35.4	36.3	60.1	55.5	4.6	8.2
Radish root	0.38	0.71	90.0	90.2	40.3	36.9	49.8	53.2	10.0	9.8
Lettuce whole plant	0.13	0.06	Not performed							
Lettuce foliage	0.08	0.20	94.0	91.5	25.0	18.4	69.0	73.1	6.0	8.5
Lettuce root	0.50	0.62	Not performed							
Immature wheat foliage	0.12	0.20								
Immature wheat foliage	0.29	0.30								
Mature wheat grain	0.35	0.49	97.0	97.3	1.1	1.3	95.9	95.9	3.0	2.7
Mature wheat chaff	0.28	0.32	Not performed							
Mature wheat straw	0.61	0.73	90.4	90.7	44.3	30.9	46.1	57.7	9.6	9.3
Mature wheat root	0.85	0.78	Not performed							

Table B.7.9-3 : Identification of metabolites in mature Wheat straw and grain, Radish root and foliage and Lettuce rotational crops after soil treatment with (Cyclopentyl-^{14}C) and (Triazole-^{14}C)- WL 148271 (Residues expressed in % of total radioactive residues and in mg Metconazole equiv./kg – values between brackets).

	Wheat grain				**Wheat straw**				**Lettuce**				**Radish root**				**Radish foliage**			
Labelling form	**Cyclopentyl**		**Triazole**		**Cyclopentyl**		**Triazole**		**Cyclopentyl**		**Triazole**		**Cyclopentyl**		**Triazole**		**Cyclopentyl**		**Triazole**	
Ageing period (d)	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**	**30**	**120**
Metconazole (cis:trans)	Not performed					4.28 (0.03)	*11.47 (0.07)*	4.1 (0.03)		<20.0 (<0.02)	14.4 (0.01)	6.3 (0.01)	39.2 (0.13)		28.8 (0.11)	*15.5 (0.11)*	18.4 (0.07)		15.3 (0.1)	*10.71 (0.09)*
Compound M30						5.71 (0.04)	*4.91 (0.03)*	4.1 (0.03)					4.8 (0.02)		2.5 (0.01)	*1.4 (0.01)*	5.4 (0.02)		3.07 (0.02)	*2.38 (0.02)*
Triazolyl alanine (T-ala)			37.0 (0.13)	59.4 (0.29)											19.4 (0.07)				30.1 (0.2)	*3.33 (0.028)*
Triazolyl acetic acid (T-aac)				20.6 (0.10)								32.5 (0.05)								
Compound M12																	33.6 (0.13)		26.8 (0.17)	
Glycoside conjugates						17.14 (0.12)		17.8 (0.13)					6.2 (0.02)		5.26 (0.02)				*9.23 (0.06)*	
Free acids						11.4 (0.08)		5.47 (0.04)		20.0 (0.02)		15.0 (0.03)	6.2 (0.02)		2.63 (0.01)				*5.8 (0.09)*	
Unknown metabolites			63.0	20.0		61.4	83.6	68.5		60.0	85.6	46.2	43.6		41.4	83.1	42.6		9.7	83.5
Total identified radioactivity			37.0 (0.13)	80.0 (0.39)		38.53 (0.27)	*16.38 (0.01)*	31.47 (0.23)		40.0 (0.04)	14.4 (0.01)	53.8 (0.09)	56.4 (0.19)		58.59 (0.22)	*16.9 (0.12)*	57.4 (0.22)		90.3 (0.64)	*16.42 (0.138)*

Note :
-Only the crops from the 120 ageing period was investigated in detail with regard to the metabolites'identification. Crops from the other ageing period were extracted, partitioned and profiled using chromatography.
-Grain from wheat treated with cyclopentyl labelled Metconazole was not further analysed as total residues recovered were negligible (0.01 mg/kg).
-Residue values in italic indicate that their identity was inferred from a similar behaviour of Rt or Rf values and not by co-chromatography.

Most of the metabolites were characterized but their identification was not confirmed by a second analytical method.
A total of 80 % of TRR in wheat grain, 38 % of TRR in wheat straw, 56 % of TRR in lettuce and up to 90 % of TRR in radish foliage was characterized.
Unchanged parent compound was the predominant compound in all crops except in wheat grain in which it was not recovered (up to 39 % of the TRR in the radish root). In wheat grain, the major compounds were the metabolites Triazolylalanine and Triazolylacetic acid which amounted 0.29 and 0.1 mg/kg respectively. Smaller amounts of the ketone metabolite (M30) was present in both radish root, foliage and wheat straw.
The rest of the extractable radioactivity consisted in of glycoside conjugates, free acids and several polar peaks.
Conclusion :
The data here above showed that rotation crops took up metconazole from the soil. The enrichment of the edible parts of the succeeding crops, with metconazole or its metabolites was sufficient to reach measurable levels in monitoring.
The metabolic pathway of metconazole in succeeding crops is similar to that in the target crops.
The degradation of the parent compound in the succeeding crops proceeds via the following pathways :

- oxidation at the benzylic methylene (M30) and at the methyl groups on the cyclopropane ring (M12),
- the presence of the triazole conjugates (T-ala and T-aac) confirmed the oxidative transformations occurring at the methylene group of the triazole ring followed by the loss of the triazole moiety from the parent.

- Metconazole (CL 900768) 60 g ai/l SL (SF09381) : Determination of CL 900768 Residues in Following Crops (Germany, 1995) (Memmesheimer H.; 1996d)
Guidelines :
BBA guidelines and UK guidelines (Appendix VI, Guidance on Residue Data Requirements, 7. Residue Trials and 8. Residues in Following Crops (United Kingdom, 1992)
GLP :
Yes.
Material and Methods :
Test substance : Metconazole, unlabelled.
Experimental design :
The study was conducted under outdoor conditions.
Prior to seeding the representative rotational crops (winter wheat, carrots and lamb's lettuce), the test substance was applied twice by spraying directly to bare soil at a rate of 90 g a.s./ha with an application interval of 21 days.
Crops were sown 30-31 days (carrots, lamb's lettuce – with a replanting at 88 DAT) and 98-99 days (wheat) after the last treatment.
Carrots, lamb's lettuce and winter wheat (whole plants, ears, plants with ears removed, grain and straw) were taken at an early growth stage and at harvest time.
Extraction procedure :
Soil and plant samples were dosed by radiocombustion analysis and Liquid Scintillation Counting (LSC).
Samples of carrots, lamb's lettuce, wheat grain and wheat ears, rest plants and straw were extracted with acetone/hexane (v/v; 1:1).
All samples were analysed for residues of metconazole as cis and trans isomers according to method FAMS 050-01 (cereals) and FAMS 057-01 (carrots, lamb's lettuce) using GC/NPD with the cis- and trans-isomers as reference standards.

Findings :
Table B.7.9-4 : Radioactive residue levels in rotational crops following 2 spray applications to bare soil of unlabelled metconazole at a rate of 90 g a.s./ha (residues are expressed as mg metconazole equiv./kg).

Sample Commodity	**Days after last treatment**	**Total radioactive residues (mg *cis*-isomer equiv./kg)**	**Total radioactive residues (mg *trans*-isomer equiv./kg)**	**Total radioactive residues (mg metconazole equiv./kg)**
Carrots	90-97 107-128 142-143	<0.01 nd nd	nd nd nd	<0.01 nd nd
Lamb's lettuce	94 101-108 111-155	nd nd nd	nd nd nd	nd nd nd
Wheat whole plant	310-336	nd	nd	nd
Wheat ears	378-381	nd	nd	nd
Wheat plants with the ears removed	378-381	nd	nd	nd
Wheat grain	415-416	nd	nd	nd
Wheat straw	415-416	nd	nd	nd
Nd : not detected. LOD of the analytical method : 0.003 mg/kg (wheat grain, ears, plants, carrots, lamb's lettuce) 0.01 mg/kg (wheat straw)				

Conclusion :
The enrichment of edible plant parts of leafy vegetables, root vegetables and cereals, installed as succeeding crops, with metconazole is not sufficient to reach measurable levels in monitoring.

B.7.10 Proposed pre-harvest intervals, re-entry intervals or withholding periods to minimize residues in crops, plants and plant products, treated areas or spaces (Annex IIA 7.8; Annex IIIA 8.7)

-*Pre-harvest interval for oilseed rape* : 56 days.
-*Pre-harvest interval for cereals* : determined by the phenological stage of application (about 35 days).
-*Re-entry period for livestock* : not relevant.
-*Re-entry period for man to crops* : not relevant.
-*Withholding period for animal feeding-stuffs* : since straw from treated cereals may be used as animal feed, the proposed PHI will cover this use.
-*Waiting period between application and crop sowing or planting the crop to be protected* : not relevant.
-*Waiting period between application and handling* : not relevant.
-*Waiting period between last application and sowing or planting succeeding crops* : not relevant since there was no observed accumulation of metconazole or its degradation products in the confined rotational crop study performed in accordance with the critical GAP.

B.7.11 Estimates of the potential and actual exposure through diet and other means (Annex IIA 7.9; Annex IIIA 8.8)

Chronic dietary intake risk assessment :

TMDI calculations were carried out using :
- the FAO/WHO cultural diet for the European adult (WHO/FSF/FOS/98.3, GEMS/Food Regional Diets),
- the German guideline BBA IV, 3-7 for children and adults,
- the UK consumption figures for the extreme consumers : adults, children, toddlers and infants, PSD Consumer Exposure Model (1999),
- the MRL proposals for individual commodities established in section B.7.6.
- the ADI of metconazole is 0.01 mg/kg b.w./day

Adult consumer

Commodity	Consumption (kg/day/person)	MRL (mg/kg)	Intake (mg/kg)
Cereals (1)	0.2014	0.1	0.02014
Rape seed	0.0073	0.1	0.00073
Total			0.02087
(1) : including oat/barley/rye/wheat/triticale.			

Taking into account a person of 60 kg body weight, the TMDI is 0.00034 mg/kg b.w./day. This represents **3.47 % of the ADI** (0.01 mg/kg b.w./day)

German 4-6 years old girl

Commodity	Consumption (kg/day/person)	MRL (mg/kg)	Intake (mg/kg)
Rape seed	0.0017	0.1	0.00017
Cereals (1)	0.106	0.1	0.0106
Total			0.01077
(1) : including oat/barley/rye/wheat/bran/flour/white and whole meal/farinaceous pastes.			

Taking into account a girl of 13.5 kg body weight, the TMDI of the German 4-6 years old girl is 7.97 x 10-4 mg/kg b.w./day. This represents **7.97 % of the ADI** (0.01 mg/kg b.w./day)

Adults, children and infants from United Kingdom

	Adults 70.1 kg b.w.		**Child 43.3 kg b.w.**		**Infant 8.7 kg b.w.**	
	«High level » intakes from single commodities					
	97.5th percen consumption (kg/day)	**TMDI for si commodity (mg/kg b.w./**	**97.5th percenti consumption (kg/day)**	**TMDI for singl commodity (mg/kg b.w./day**	**97.5th percentile consumption (kg/day)**	**TMDI for singl commodity (mg/kg b.w./day**
Wheat	0.25	0.000208	0.2199	0.000366	0.0614	0.000409
Barley (assuming 1% be consumption)	0.0236	0.000039	0.0036	0.000012	L/C	L/C
Oat	0.0409	0.000068	0.0305	0.000102	0.0182	0.000243
Bran	0.0156	0.000026	0.0216	0.000072	L/C	L/C
Oilseeds total	0.0745	0.000124	0.0608	0.000203	0.0172	0.000229
	Total dietary intakes from combinations of commodities (total TMDI) (mg/kg b.w./day)					
Total	0.000341		0.000576		0.000721	

The TMDIs of UK adults, children and infants are respectively **3.41 %**, **5.76 %** and **7.21 %** of the ADI (0.01 mg/kg b.w./day).

Acute dietary intake risk assessment :

UK methodology (doc. New UK technical policy on the estimation of acute dietary intakes of pesticide residues) using the large portion food consumption at 97.5th percentile consumption for French children (ages 6 and under)- Reference : Doc CX/PR 00/3-Add 1; April 2000.

Case 1 : The concentration of residue in a sample or in a composite sample (raw or processed) reflects that in a meal-sized portion of the commodity

IESTI=(Lp*HR or HR-P)/Mean body weight.

ARfD = 0.01 mg/kg bw/day.

		CHILDREN		
Commodity	**Residue (HR) (mg/kg)**	**Lp (kg/kg bw/day)**	**IESTI (mg/kg bw/day)**	**% of ARfD**
Wholemeal bread	0.09	0.01667	0.0015	15.0
Oilseed rape : no available data				

Conclusion :
The total dietary intake of metconazole represents up to 8 % of the ADI and 15 % of the ARfD.

B.7.12 Community MRLs and MRLs in the EU Member States

-

B.7.13 Proposed MRLs and justification for the acceptability of those residues (Annex IIA; Annex IIIA)

Expression of the residue	Crops	MRLs (mg/kg)
Metconazole (*cis* and *trans* isomers)	Wheat	0.05
	Barley*	0.1
	Rye	0.05
	Triticale	0.05
	Oat	0.1
	Rape seed	0.1
~~* : MRL proposal based on the available residue data for Northern Europe only (no data for S.E.)~~		

B.7.14 Storage stability of residue samples

Metconazole (CL 900768) : Storage stability of CL 900768 residues as cis-(CL 354801) and trans (CL 354802) isomer at <-18°C in cereal grain (Germany, 1995) (Memmesheimer H.; 1997a)
Guidelines :
Regulatory Data Requirement : Annex II, Part A, Section 6.2 and Annex III, Part A, Section 8.1 to Council Directive 91/414/EEC.
GLP :
Yes.
Material and methods :
Wheat grain samples were fortified with the cis- and the trans-isomer of metconazole, each at levels of 0.10 mg/kg. Immediately after the fortification, as well as after 1, 3, 6, 9 and 12 months storage at <-18 °C, the fortified samples were analysed together with one unfortified control sample according to the residue analytical method FAMS 050-01 using capillary gas chromatography with NPD detection to determine the residue levels of metconazole.
One method of procedural recovery test of metconazole was made for each time point.
The average of residues found in stored samples were corrected for the mean of concurrent recoveries.
Findings :
A previous analysis of a non fortified wheat grain sample was performed in order to prevent interference with other substances. No sample matrix interferences were detected.
Recovery values (presented in the table here below) were generally acceptable both for the cis- and trans-isomer of metconazole.

Table B.7.14-1 : Percent recovery for method recovery test - Average (%)

Test substances	**Plant commodity**	**Fortification level (mg/kg)**	**Storage period (months)**					
	Wheat grain	0.1	**0**	**1**	**3**	**6**	**9**	**12**
Cis-Metconazole			78	82	89	85	85	79
Trans-Metconazole			79	82	90	88	86	82

Note : The fortification of the matrices was not performed at the LOQ of the analytical method (0.01 mg/kg).

Table B.7.14-2 : Average of residues of Cis- and Trans- isomer of metconazole found in the course of the frozen storage stability study – corrected for the mean of concurrent recoveries (expressed in mg/kg).

Test substances	**Plant commodity**	**Storage period (months)**					
	Wheat grain	**0**	**1**	**3**	**6**	**9**	**12**
Cis-Metconazole		0.0992	0.0988	0.0936	0.0964	0.0959	0.0973
Trans-Metconazole		0.0986	0.1002	0.0953	0.0965	0.0966	0.0994

Conclusion :
Residues of Metconazole expressed as cis- and trans-isomers can be considered as stable in wheat grain under frozen storage conditions for a period of 12 months.

- Metconazole (CL 900768) : Storage stability of CL 900768 residues as cis-(CL 354801) and trans (CL 354802) isomer at <-18°C in cereal green plant and straw (Germany, 1996) (Memmesheimer H.; 1997b)

Guidelines :
Regulatory Data Requirement : Annex II, Part A, Section 6.2 and Annex III, Part A, Section 8.1 to Council Directive 91/414/EEC.

GLP :
Yes.

Material and methods :
Weathered (incurred residues) samples of cereal green plant and straw were stored for 12 months under freezer storage conditions at approximately –18 °C.
Each sample set consisted of 1 untreated sample and 3 weathered crop samples of cereal green plant and straw.
These samples were analysed for residues of metconazole as cis – and trans- isomer of metconazole according to the analytical method FAMS 050-01 using GC/NPD after 0, 3, 6, 9 and 12 months storage under frozen conditions.
With each set of samples, 2 concurrent recoveries were conducted for cis- and the trans- isomer of metconazole in the range of the expected residues (green plants : 0.90 mg/kg and straw : 0.30 mg/kg).
The mean residue values were corrected for the average of concurrent recoveries obtained from each set of samples.
The average of residues found in stored samples were corrected for the mean of concurrent recoveries.

Table B.7.14 -3 : Concurrent recoveries of the cis- and trans- isomer of metconazole (%)

Test substances	**Plant commodity**	**Storage period (months)**				
		0	**3**	**6**	**9**	**12**
Cis-Metconazole	**Cereal green plant**	90.86	86.87	85.8	82.85	79.81
Trans-Metconazole		91.87	85.85	84.88	82.82	78.79
Average		*89*	*86*	*87*	*83*	*79*
Cis-Metconazole	**Cereal straw**	78.76	81.79	72.78	72.78	73.73
Trans-Metconazole		80.79	80.79	71.79	73.76	72.74
Average		*78*	*80*	*75*	*75*	*73*

Table B.7.14 -4 : Average of total amount of metconazole residues (sum of the Cis- and the Trans- isomer) found in the weathered cereal samples in the course of the frozen storage stability study – corrected for the mean of concurrent recoveries (expressed in mg/kg).

Plant commodity	**Test substance**	**Storage period (months)**				
		0	**3**	**6**	**9**	**12**
Field trial cereal green plant	**Total Metconazole**	1.02	1.10	1.01	1.08	0.97
Field trial cereal straw	**Total Metconazole**	0.41	0.39	0.37	0.36	0.36
Note : At 0 month storage, the sample set consisted in 5 weathered cereal samples and one untreated control sample.						

Conclusion :
Residues of total metconazole (sum of the cis- and the trans-isomers) in cereal green plant and straw can be considered as stable under frozen storage conditions for a period of 12 months.

- Metconazole (CL 900768) : Storage Stability of Residues of the Metabolite Triazolylalanine (CL 147267) in Wheat Grain (Kretschmer S.; 2000)

Guidelines :
Regulatory Data Requirement : Annex II, Part A, Section 6.2 and Annex III, Part A, Section 8.1 to Council Directive 91/414/EEC as amended by Commission Directive 96/68/EC.

GLP :
Yes.

Material and methods :
Samples of untreated wheat grain were fortified with 5.0 ppm triazolylalanine and were stored for 12 months under freezer storage conditions at approximately –20 °C.
Each sample set consisted of 3 treated wheat grain samples (fortified and stored frozen), 1 unfortified control grain sample and 3 freshly fortified samples with the metabolite immediately before extraction.
The unfortified grain samples were kept under the same storage conditions as the fortified samples and were used for concurrent recovery samples at each sampling point.
These samples were analysed for the metabolite Triazolylalanine according to the method published by R. Brennecke and adapted to include wheat grain using GC/MS.
One method of procedural recovery test of metconazole was made for each time point.

Findings :
Table B.7.14 -5 : Average residue levels of Triazolylalanine in wheat grain (mg/kg) *(a)* and average recovery (%) *(b)* for stored samples (<-20 °C) and for freshly fortified samples found in the course of the frozen storage stability study.

Type of samples	**Fortification level (mg/kg)**	**Storage period (months)**					
		0		**6**		**12**	
		(a)	***(b)***	***(a)***	***(b)***	***(a)***	***(b)***
Stored samples (<-20 °C)	5.0	Not applicable		4.2	84	3.9	78
Freshly fortified samples	5.0	3.6	72	4.6	93	4.2	84

Conclusion :
Triazolylalanine residue levels remained essentially unchanged over the 12 months of frozen storage period in wheat grain.

- Metconazole (CL 900768) : Storage stability of CL 900768 residues as cis-(CL 354801) and trans (CL 354802) isomer at <-18°C in rape seed and rape oil (Germany, 1996) (Memmesheimer H.; 1997d)

Guidelines :

Regulatory Data Requirement : Annex II, Part A, Section 6.2 and Annex III, Part A, Section 8.1 to Council Directive 91/414/EEC.

GLP :

Yes.

Material and methods :

Untreated samples of rape seed and rape oil were fortified with the cis- and the trans-isomer of metconazole, each at levels of 0.10 mg/kg. Immediately after the fortification, as well as after 1, 3, 6, 9 and 12 months storage at <-18 °C, the fortified samples were analysed together with one unfortified control sample according to the residue analytical method FAMS 059-02 using capillary gas chromatography with NPD detection to determine the residue levels of metconazole. The method was validated at levels of 0.1 mg/kg for each isomer.

One method of procedural recovery test of metconazole was made for each time point.

The average of residues found in stored samples were corrected for the mean of concurrent recoveries.

Findings :

No residues of metconazole were found in any of the stored control samples.

A previous analysis of non fortified rape seed and rape oil samples was performed in order to prevent interference with other substances. No sample matrix interferences were detected.

Recovery values (presented in the table here below) were generally acceptable both for the cis- and trans-isomers of metconazole.

Table B.7.14 -6 : Percent recovery for method recovery test - Average (%)

Plant commodity	**Test substances**	**Fortification level (mg/kg)**	**Storage period (months)**					
		0.1	**0**	**1**	**3**	**6**	**9**	**12**
Rape seed	**Cis-Metconazole**		80	80	91	84	91	89
	Trans-Metconazole		80	81	93	87	95	93
Rape oil	**Cis-Metconazole**		99	96	99	99	94	95
	Trans-Metconazole		100	96	98	98	95	95

Note : The fortification of the matrices was not performed at the LOQ of the analytical method (0.01 mg/kg).

Table B.7.14 -7 : Average of residues of Cis- and Trans- isomer of metconazole found in the course of the frozen storage stability study – corrected for the mean of concurrent recoveries (expressed in mg/kg).

Plant commodity	**Test substances**	**Fortification level (mg/kg)**	**Storage period (months)**					
		0.1	**0**	**1**	**3**	**6**	**9**	**12**
Rape seed	**Cis-Metconazole**		0.0999	0.0801	0.0866	0.0933	0.0813	0.0821
	Trans-Metconazole		0.0985	0.0794	0.0859	0.0932	0.0824	0.0811
Rape oil	**Cis-Metconazole**		0.0992	0.1004	0.0997	0.0959	0.1009	0.0993
	Trans-Metconazole		0.0968	0.1004	0.1001	0.0984	0.1036	0.0994

Conclusion :

Residues of Metconazole expressed as cis- and trans-isomers can be considered as stable in rape seed and rape oil under frozen storage conditions for a period of 12 months.

- Metconazole (CL 900768) : Storage stability of CL 900768 residues as cis-(CL 354801) and trans (CL 354802) isomer at <-18°C in carrots and lettuce (Germany, 1996) (Memmesheimer H.; 1997c)

Guidelines :

Regulatory Data Requirement : Annex II, Part A, Section 6.2 and Annex III, Part A, Section 8.1 to Council Directive 91/414/EEC.

GLP :

Yes.

Material and methods :
Untreated samples of carrots and lettuce were fortified with the cis- and the trans-isomer of metconazole, each at levels of 0.10 mg/kg. Immediately after the fortification, as well as after 1, 3, 6, 9 and 12 months storage at <-18 °C, the fortified samples were analysed together with one unfortified control sample according to the residue analytical method FAMS 057-01 using capillary gas chromatography with NPD detection to determine the residue levels of metconazole. The method was validated at levels of 0.1 mg/kg for each isomer.
One method of procedural recovery test of metconazole was made for each time point.
The average of residues found in stored samples were corrected for the mean of concurrent recoveries.
Findings :
No residues of metconazole were found in any of the stored control samples.
A previous analysis of non fortified carrot and lettuce samples was performed in order to prevent interference with other substances. No sample matrix interferences were detected.
Recovery values (presented in the table here below) were generally acceptable both for the cis- and trans-isomer of metconazole.

Table B.7.14 -8 : Percent recovery for method recovery test - Average (%)

Plant commodity	**Test substances**	**Fortification level (mg/kg)**	**Storage period (months)**					
		0.1	**0**	**1**	**3**	**6**	**9**	**12**
Carrots	**Cis-Metconazole**		89	88	91	93	88	91
	Trans-Metconazole		92	90	92	94	89	91
Lettuce	**Cis-Metconazole**		78	96	88	93	86	98
	Trans-Metconazole		75	95	83	93	85	99

Note : The fortification of the matrices was not performed at the LOQ of the analytical method (0.01 mg/kg).

Table B.7.14 -9 : Average of residues of Cis- and Trans- isomer of metconazole found in the course of the frozen storage stability study – corrected for the mean of concurrent recoveries (expressed in mg/kg).

Plant commodity	**Test substances**	**Fortification level (mg/kg)**	**Storage period (months)**					
		0.1	**0**	**1**	**3**	**6**	**9**	**12**
Carrots	**Cis-Metconazole**		0.1004	0.0888	0.0945	0.0877	0.0892	0.0855
	Trans-Metconazole		0.0986	0.0889	0.0937	0.0887	0.0911	0.0849
Lettuce	**Cis-Metconazole**		0.1138	0.0986	0.1056	0.1000	0.0983	0.0980
	Trans-Metconazole		0.1155	0.0984	0.1024	0.1012	0.0988	0.0973

Conclusion :
Residues of Metconazole expressed as cis- and trans-isomers can be considered as stable in carrots and lettuce under frozen storage conditions for a period of 12 months.

B.7.15 Summary and evaluation of residue behaviour

Metabolism in plants and in livestock

The metabolism of metconazole was investigated in wheat, oilseed rape, lactating goats and laying hens.
The metabolic reactions on metconazole in plants and animals are depicted in the figures 2, 3 and 4 in Appendix A to this section.

In plants, the parent compound, the triazolyl alanine and the triazolyl acetic acid metabolites are the major components of the residue but it was decided not to include these metabolites in the residue definition as they are of no toxicological concern.

In lactating goats, metconazole undergoes an extensive metabolization.
All the metabolites detected in goat tissues are identical or structurally similar to those recovered in the rat.
In laying hens, no metabolism study is required since the theoretical intake calculation showed that the trigger value of 0.1 mg/kg in diet was not exceeded.

The degradation of metconazole in plants and in animals proceeds via :
-oxidation at the benzylic methylene and the methyl groups on the cyclopentane ring to give both hydroxymethyl and carboxy metabolites,
-oxidation at the methylene group next to the triazole ring to give mainly the triazole conjugates.

Supervised residue trials

Trials data on wheat , barley (only for NE), rye, triticale and oilseed rape for Northern and Southern Europe allowed MRL proposals.

A validated method of analysis of the parent compound enabled the enforcement of the proposed MRLs.

Industrial or household processing studies

Not required.

Livestock feeding studies

Not required.

Residues in rotational crops

The residues in rotational crops are low and MRL proposals for these crops are not necessary.

Consumer safety

Assessment of the safety of the consumer indicates that the intake of residues of metconazole is well below the maximum acceptable level both for the chronic and acute exposure.

B.7.16 References relied on

Annex point(s)	Author(s)	Year	Title Source BASF Document No. GLP or GEP status Published or not	Data Protection Claimed Y/N	Owner
II A 6.1/1	Edwards V.T.	1991a	[Triazole-14C] WL136184 (KNF-S-474c) : Metabolism in wheat Sittingbourne Research Centre; Kent ME9 8AG; United Kingdom MK-640-001 Yes unpublished	N	BASF
II A 6.1/2	Edwards V.T.	1991b	[Cyclopentyl-14C] WL148271(KNF-S-474m): Metabolism in wheat Sittingbourne Research Centre; Kent ME9 8AG; United Kingdom MK-640-002 Yes unpublished	N	BASF
II A 6.1/3	Kao M.L.	1997a	CL 900768 (Metconazole): Metabolism of [triazole-3,5-14C] CL 900768 in canola under field conditions American Cyanamid Company; Princeton NJ 08543-0400; United States of America MK-640-006 Yes unpublished	N	BASF
II A 6.1/4	Kao M.L.	1997b	CL 900768 (Metconazole): Metabolism of [p-chlorophenyl-U-14C] CL 900768 in canola under field conditions American Cyanamid Company; Princeton NJ 08543-0400; United States of America MK-640-007 Yes unpublished	N	BASF
II A 6.1/5	Anonymous	1989	Pesticide residues in food - 1989 evaluations. Part II - Toxicology. FAO Plant Production and Protection Paper 100/2. P. 237-244 MK-905-021 No Food and agriculture organization pp 237-244	N	public
II A 6.1/6	Ikegami F.,Komada Y.	1990	Biosynthesis of ß-(1,2,4-triazol-1-yl) alanine in higher plants MK-905-003 No Phytochemistry Vol. 29 No. 8 pp 2507-2508	N	public
II A 6.1/7	Massini P.	1963	Aminotriazolylalanine a metabolic product of aminotriazole from plants MK-905-006 No Acta Botanica Neerlandica, Vol.12, pp. 64-72	N	public
II A 6.2.1/1	Johnston A.M. et al.	1992	The disposition of [14C]-WL148271 (KNF-S-474M) in the lactating goat (nature of residue study to EPA guidelines) Inveresk Research International Ltd.; Tranent, EH33 2NE; United Kingdom MK-440-013 Yes unpublished	N	BASF
II A 6.2.1/2	Richardson K.A.	1993	[Cyclopentyl-14C]-WL136184 (Metconazole, KNF-S-474c): Fate of WL136184 in the lactating goat following 5 consecutive daily doses (23 mg/day) Sittingbourne Research Centre; Kent ME9 8AG; United Kingdom MK-440-015 Yes unpublished	N	BASF
II A 6.2.2/1	Johnston A. et al.	1991	The disposition of [14C]-WL136184 (KNF-S-474C) in the laying hen (nature of residue study to EPA guidelines) Inveresk Research International Ltd.; Tranent, EH33 2NE; United Kingdom MK-440-011 Yes unpublished	N	<none>

Annex point(s)	Author(s)	Year	Title Source BASF Document No. GLP or GEP status Published or not	Data Protection Claimed Y/N	Owner
II A 6.2.2/2	Johnston A.,Young C.	1992	The disposition of 14c wl136184 in the laying hen nature of residue study to epa guidelines Inveresk Research International Ltd.; Tranent, EH33 2NE; United Kingdom MK-440-012 Yes unpublished	N	BASF
II A 6.3.1/1	Jungblut D. et al.	1996b	Metconazole (CL 900768) 60 g ai/l SL (SF09381)*: At harvest residue study in winter wheat (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-033 Yes unpublished	N	BASF
II A 6.3.1/2	Bleif J. et al.	1996c	Metconazole (CL 900768) 60 g ai/l SL (SF 09381): Decline curve residue study in winter wheat (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-035 Yes unpublished	N	BASF
II A 6.3.1/3	Dombo P. et al.	1996e	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: Decline curve residue study in winter wheat (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-041 Yes unpublished	N	BASF
II A 6.3.1/4	Class T.,Kretschmer S.	1999	Metconazole 60 g ai/l SL (SF09381): At harvest residue study on metconazole & its metabolite triazoylalanine in wheat (Germany 1998): Analysis of residues of metconazole and metabolite triazolylalanine in wheat grain samples PTRL Europe; Ulm; Germany Fed.Rep. MK-730-045 Yes unpublished	N	BASF
II A 6.3.1/5	Bleif J. et al.	1996e	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: At harvest residue study in winter wheat (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-037 Yes unpublished	N	BASF
II A 6.3.1/6	Dombo P. et al.	1996d	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: Decline curve residue study in winter wheat (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-039 Yes unpublished	N	BASF
II A 6.3.1/8	Young H.E.	2002	BAS 555 F (Metconazole) 60 g a.s./L SL (SF09381) and 90 g a.s./L SL (RLF 12307/RLM 11237): Decline curve residue study on BAS 555 F in winter wheat - South France 2000 BASF Agro Research Gosport; Gosport; United Kingdom MK-730-049 Yes unpublished	N	BASF
II A 6.3.1/9	Jones S.	2002	Study on the residue behaviour of BAS 555 F in wheat after application of BAS 555 00 F under field conditions in France (S), United Kingdom, 2001 BASF Agro Research Gosport; Gosport; United Kingdom MK-730-050 Yes unpublished	Y	BASF

Annex point(s)	Author(s)	Year	Title Source BASF Document No. GLP or GEP status Published or not	Data Protection Claimed Y/N	Owner
II A 6.3.1/10	Bleif J.	1996c	Metconazole (CL 900768) 60 g ai/l SL (SF09381)*: Decline curve residue study in winter rye (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-027 Yes unpublished	N	BASF
II A 6.3.1/11	Jungblut D. et al.	1996a	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: At harvest residue study in triticale (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-030 Yes unpublished	N	BASF
II A 6.3.1/12	Bleif J.	1996a	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: Residue study in winter barley (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-025 Yes unpublished	N	BASF
II A 6.3.1/13	Dombo P. et al.	1996a	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: At harvest residue study in winter barley (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-028 Yes unpublished	N	BASF
II A 6.3.1/14	Bleif J.	1996d	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: At harvest residue study in winter barley (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-029 Yes unpublished	N	BASF
II A 6.3.1/15	Bleif J. et al.	1996a	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: At harvest residue study in winter barley (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-032 Yes unpublished	N	BASF
II A 6.3.1/16	Bleif J. et al.	1996d	Metconazole (CL 900768) 60 g ai/l SL (SF 09381): At harvest residue study in spring barley (UK,1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-036 Yes unpublished	N	BASF
II A 6.3.1/17	Bleif J. et al.	1997a	Metconazole (CL 900768) 60 g ai/l SL (SF09381): At harvest residue study of metconazole (CL 900768) in spring barley (UK, 1997) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-042 Yes unpublished	N	BASF
II A 6.3.1/18	Bleif J.	1996b	Metconazole (CL 900768) 60 g ai/l SL (SF09381)*: Decline curve residue study in winter barley (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-026 Yes unpublished	N	BASF

Annex point(s)	Author(s)	Year	Title Source BASF Document No. GLP or GEP status Published or not	Data Protection Claimed Y/N	Owner
II A 6.3.1/19	Dombo P. et al.	1996b	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: Decline curve residue study in winter barley (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-031 Yes unpublished	N	BASF
II A 6.3.1/20	Bleif J. et al.	1996b	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: Decline curve residue study in winter barley (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-034 Yes unpublished	N	BASF
II A 6.3.1/21	Dombo P. et al.	1996c	Metconazole (CL 900768) 60 g ai/l SL (SF 09381)*: Decline curve residue study in winter barley (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-038 Yes unpublished	N	BASF
II A 6.3.1/22	Bleif J. et al.	1996f	Metconazole (CL 900768) 60 g ai/l SL (SF 09381): Decline curve residue study in spring barley (UK, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-040 Yes unpublished	N	BASF
II A 6.3.1/23	Bleif J. et al.	1997b	Metconazole (CL 900768) 60 g ai/l SL (SF09381): Decline curve residue study of metconazole (CL 900768) in spring barley (UK, 1997) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-730-043 Yes unpublished	N	BASF
II A 6.3.1/24	Beggs C.J. et al.	1996	Metconazole (CL 900768) 60 G a.i./L SL (SF 09381) at harvest residue study in autumn oil seed rape - (France, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-750-003 Yes unpublished	N	BASF
II A 6.3.1/25	Bleif J. et al.	1997d	Metconazole (CL 900768) 60 g ai/l SL (SF09381): At harvest residue study in oil seed rape (France-north, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-750-005 Yes unpublished	N	BASF
II A 6.3.1/26	Dombo P. et al.	1997a	Metconazole (CL 900768) 60 g ai/l SL (SF 09381): Decline curve residue study in oil seed rape (France-north, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-750-006 Yes unpublished	N	BASF
II A 6.3.1/27	Dombo P. et al.	1997b	Metconazole (CL 900768) 60 g/l SL (SF 09381): At harvest residue study in oilseed rape (France-south, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-750-007 Yes unpublished	N	BASF

Annex point(s)	Author(s)	Year	Title Source BASF Document No. GLP or GEP status Published or not	Data Protection Claimed Y/N	Owner
II A 6.3.1/28	Scharm M. et al.	1999	Metconazole (CL 900768) 90 g ai/l SL (RLF 12307): At harvest residue study on metconazole (CL 900768) in oil seed rape (South-France, 1998) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-750-009 Yes unpublished	N	BASF
II A 6.3.1/29	Bleif J. et al.	1997c	Metconazole (CL 900768) 60 g ai/l SL (SF 09381): Decline curve residues study in oil seed rape (France-south, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-750-004 Yes unpublished	N	BASF
II A 6.3.2/1	Memmesheimer H.	1997a	Metconazole (CL 900768): Storage stability of CL 900768 residues of cis-(CL 354801) and trans-(CL 354802) isomer at <-18 degrees C. in cereal grain (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-326-004 Yes unpublished	N	BASF
II A 6.3.2/2	Memmesheimer H.	1997b	Metconazole (CL 900768): Storage stability of CL 900768 residues as cis-(CL 354801) and trans-(CL 354802) isomer at <-18 degrees C. in cereal green plant and straw (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-326-005 Yes unpublished	N	BASF
II A 6.3.2/3	Memmesheimer H.	1997c	Metconazole (CL 900768): Storage stability of CL 900768 residues as cis-(CL 354801) and trans-(CL 354802) isomer at <-18 degrees C. in carrots and lettuce (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-326-006 Yes unpublished	N	BASF
II A 6.3.2/4	Memmesheimer H.	1997d	Metconazole (CL 900768): Storage stability of CL 900768 residues as cis-(CL 354801) and trans-(CL 354802) isomer at <- 18 degrees C. in rape seed and rape oil (Germany, 1996) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-326-007 Yes unpublished	N	BASF
II A 6.3.2/5	Kretschmer S.	2000	Metconazole (CL 900768): Storage stability of residues of the metabolite triazolyalanine (CL 147267) in wheat grain PTRL Europe; Ulm; Germany Fed.Rep. MK-326-016 Yes unpublished	N	BASF
II A 6.6/1	Hill A.D.,Standen M.E.	1993	Metconazole: Confined rotational crop study using [cyclopentyl-14C] and [triazole-14C]- WL148271 Sittingbourne Research Centre; Kent ME9 8AG; United Kingdom MK-640-004 Yes unpublished	N	BASF

Annex point(s)	Author(s)	Year	Title Source BASF Document No. GLP or GEP status Published or not	Data Protection Claimed Y/N	Owner
II A 6.6/2	Memmesheimer H.	1996d	Metconazole (CL 900768) 60 g ai/l SL (SF09381): Determination of CL 900768 residues in following crops (Germany, 1995) Cyanamid Forschung GmbH; Schwabenheim; Germany Fed.Rep. MK-790-010 Yes unpublished	N	BASF

ANNEX B

METCONAZOLE

APPENDIX A : METABOLIC PATHWAYS IN PLANTS AND ANIMALS

Metabolic pathways in plants and in animals	
Figure 1 : metabolic pathway of metconazole in rat	Page 49
Figure 2 : metabolic pathway of metconazole in wheat	Page 50
Figure 3 : metabolic pathway of metconazole in oilseed rape	Page 51
Figure 4 : metabolic pathway of metconazole in lactating goats	Page 52

Figure 1 : Metabolic pathway in rats

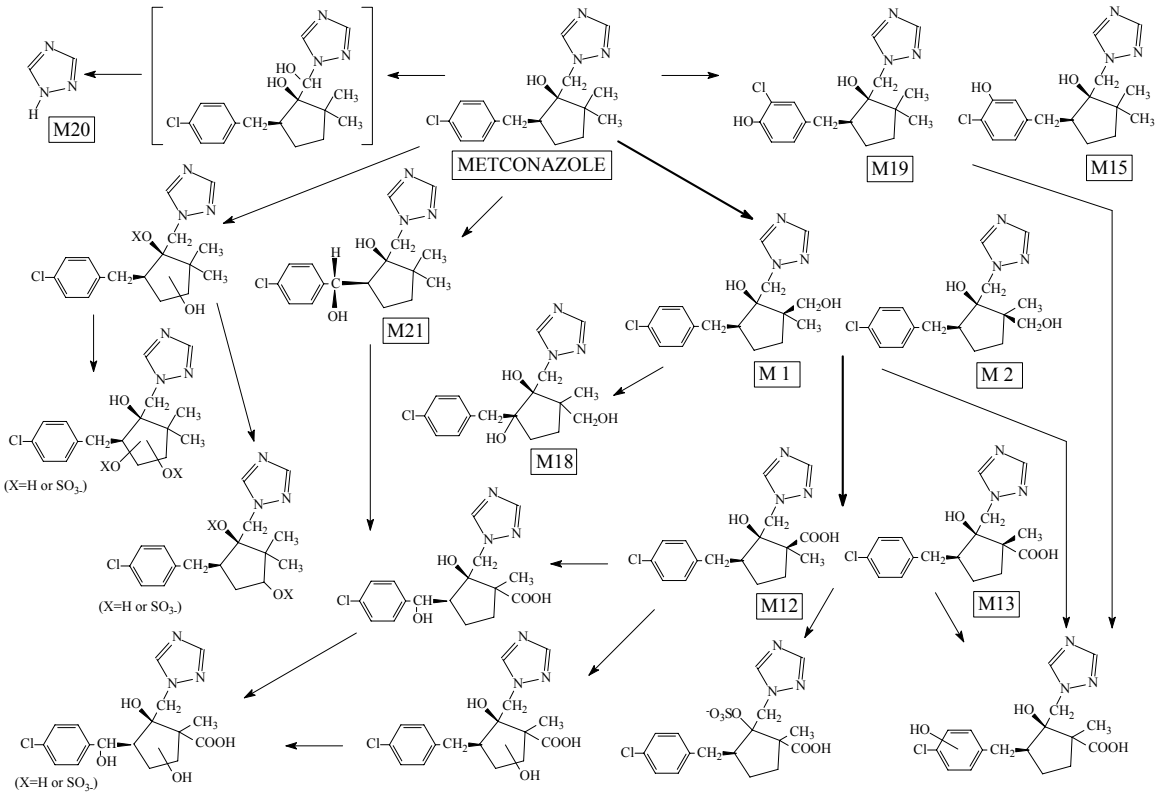


Figure 2 : Metabolic pathway in wheat

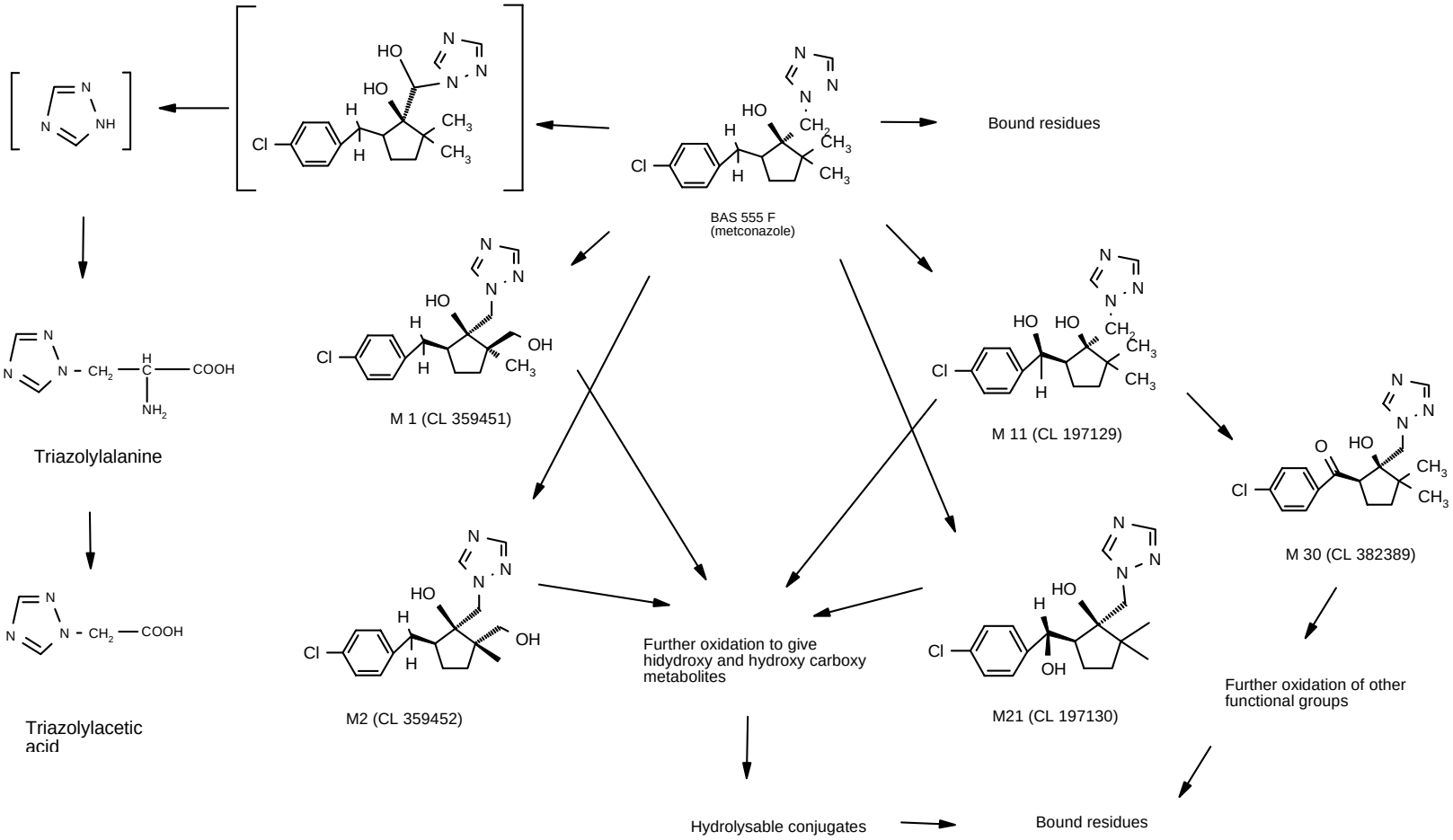

Triazolylalanine
Triazolylacetic acid
BAS 555 F (metconazole)
Bound residues
M 1 (CL 359451)
M 11 (CL 197129)
M 30 (CL 382389)
M2 (CL 359452)
M21 (CL 197130)
Further oxidation to give hidydroxy and hydroxy carboxy metabolites
Further oxidation of other functional groups
Hydrolysable conjugates
Bound residues

Figure 3 : Metabolic pathway in oilseed rape

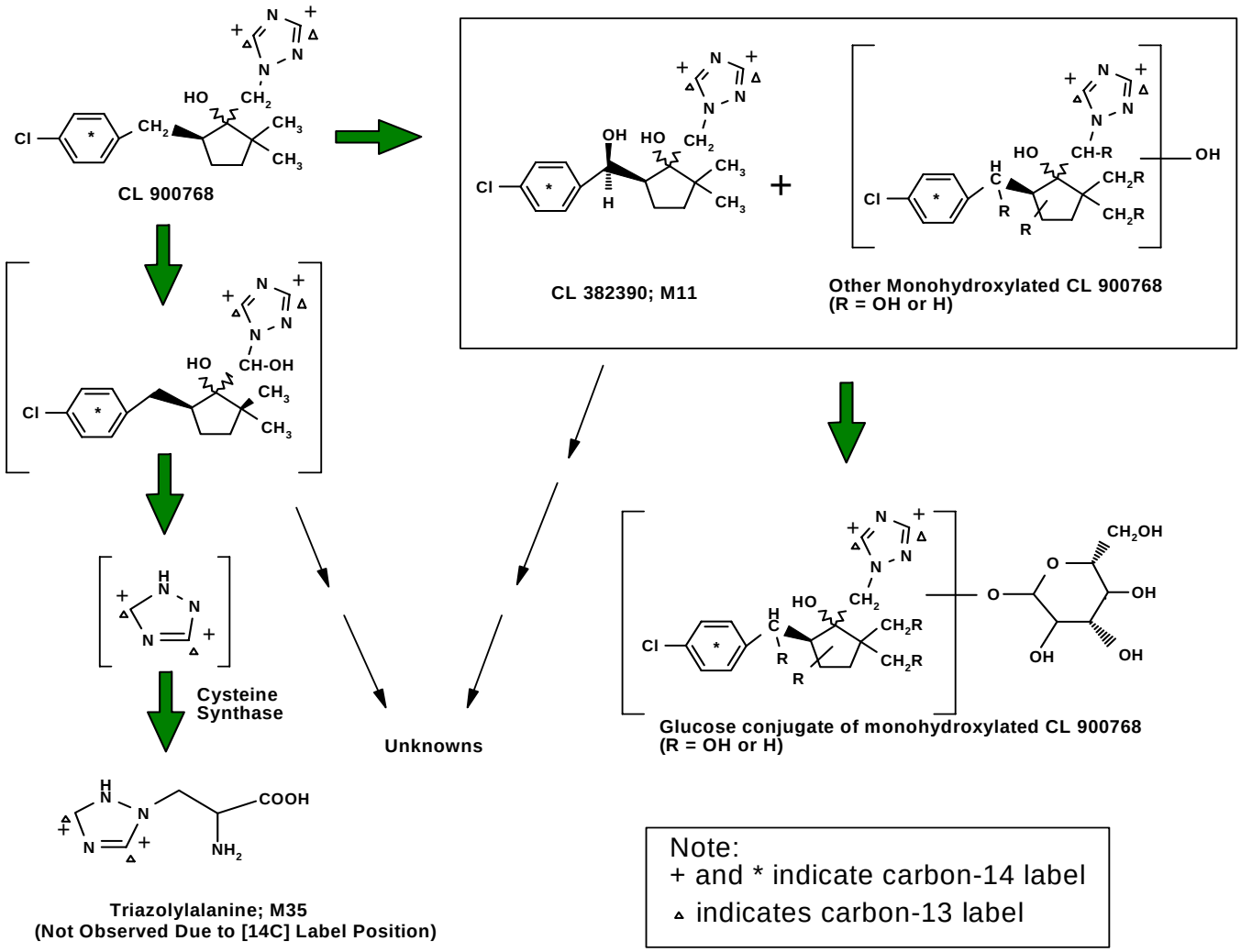
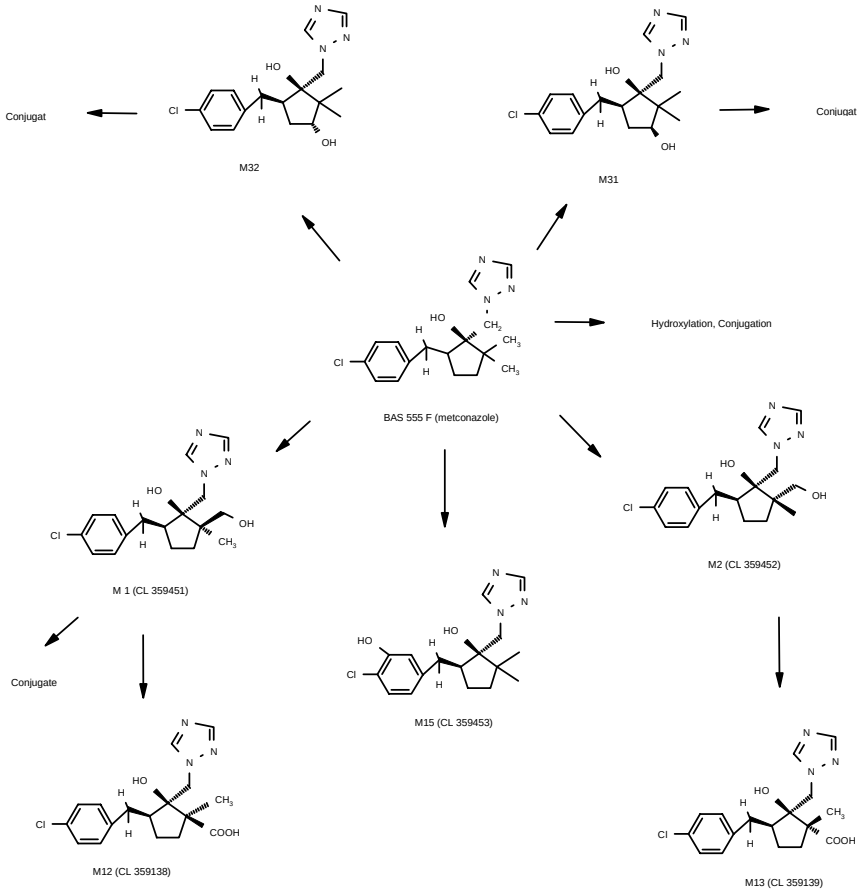


Figure 4 : Metabolic pathway in lactating goats

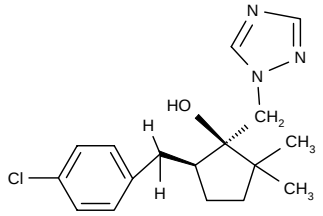
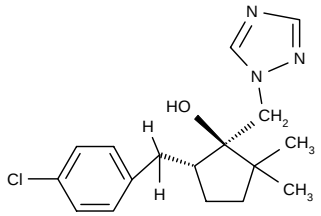
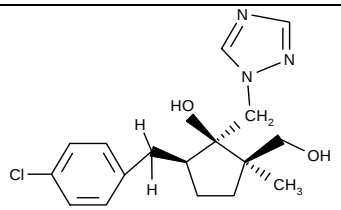
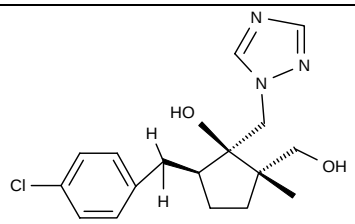
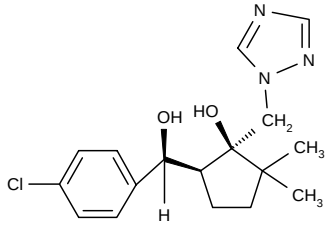
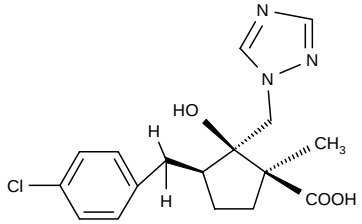


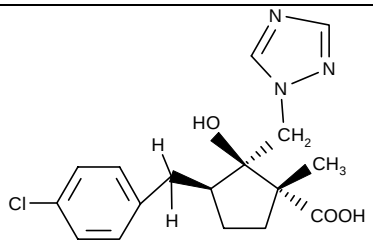
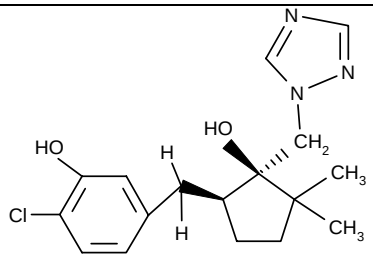
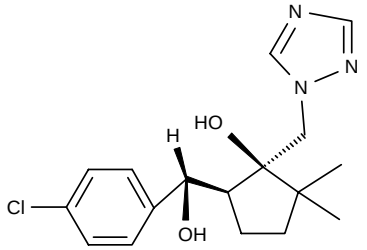
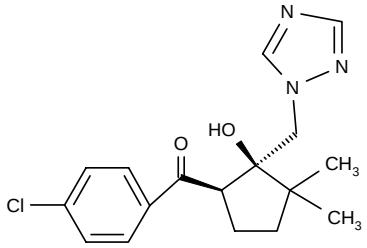
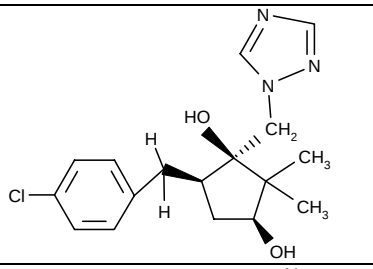
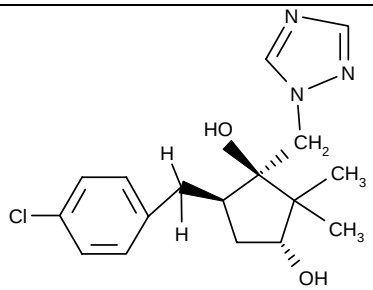
ANNEX B

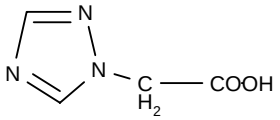
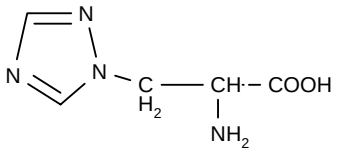
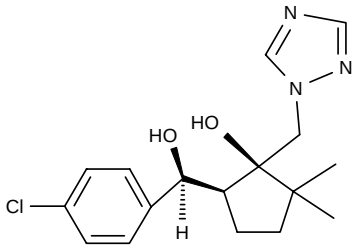
METCONAZOLE

APPENDIX B :
CHEMICAL STRUCTURES OF SYNTHETIC REFERENCE COMPOUNDS

Chemical structures of synthetic reference compounds from Metconazole

Metabolite Codes	Metabolite Identity
M0 CL 900768 WL148271 KNF-S-474m *cis*-isomer: CL 354801; WL136184 KNF-S-474c *trans*-isomer: CL 354802; WL153996 (KNF-S-474t)	 Cis-isomer  Trans-isomer
M1 CL 359451	
M2 CL 359452	
M11 CL 197129	
M12 CL 359138	

M13 CL 359139	
M15 CL 359453	
M21 CL 197130	
M30 CL 382389	
M31	
M32	

Triazolyl acetic acid M34 WL 161417	
M35 Triazolyl alanine WL161416 CL 147267	
M36 CL 382390	

ANNEX B

METCONAZOLE

APPENDIX C :

RESIDUE DATA FROM SUPERVISED TRIALS

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
95-105-01 D-53947 Nettersheim-Tondorf Germany	Winter wheat/ slejpner	1. 17 Sep. 1994 2. 25 June 1995 to 02 July 1995 3. 15 Aug. 1995	N.A. (1) N.A. (1)	397.0 398.5	0.060 0.060	19 May 1995 17 July 1995	BBCH 79 (+)	Grain Straw Grain Straw	n.d. (++) 0.24 <0.01 0.18	35 35 42 42	-

			N.A. (1)	398.5	0.060	19 May 1995	BBCH 61	Grain	n.d.	61	
			N.A. (1)	397.0	0.060	26 June 1995		Straw	0.23	61	
			N.A. (1)	397.3	0.089	19 May 1995	BBCH 79 (+)	Grain	**n.d.** (++)	35	
			N.A. (1)	399.3	0.090	17 July 1995		Straw	**0.25**	35	
								Grain	<0.01	42	
								Straw	0.31	42	
			N.A. (1)	398.5	0.090	19 May 1995	BBCH 61	Grain	n.d.	61	
			N.A. (1)	398.5	0.090	26 June 1995		Straw	0.41	61	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
95-106-01 D-67125 Dannstadt-Schauern-heim	Winter wheat/ Kanzier	1. 04 Nov. 1994 2. 09 June 1995 to 20 June 1995 3. 02 Aug. 1995	N.A. (1) N.A. (1)	398.8 396.3	0.060 0.060	10 May 1995 27 June 1995	BBCH 71 (watery ripe)	Ears Plants with ears removed Ears Plants with ears removed Ears Plants with ears removed	0.03 0.03 0.77 0.50 0.18 0.26	-0 -0 0 0 14 14	-

(1) N.A. : not applicable (°) Samples could be exchanged, by mistake
(+) n.d. = not detectable (limit of detection : 0.002 mg/kg for grain, ears and rest plants and 0.01 mg/kg for straw)

								Grain	n.d. (+)	29	
								Straw	0.32	29	
								Grain	n.d. (+)	36	
								Straw	0.22	36	
								Grain	< 0.01	43	
								Straw	0.19	43	
			N.A. (1)	397.5	0.090	10 May 1995	BBCH 71	Ears	<0.01	-0	
			N.A. (1)	398.8	0.090	27 June 1995	(watery ripe)	Plants with ears removed	1.23(°)	-0	
								Ears	1.21	0	
								Plants with ears removed	0.07(°)	0	
								Ears	0.39	14	
								Plants with ears removed	0.56	14	
								Grain	<0.01	29	
								Straw	0.72	29	
								Grain	**<0.01**	36	
								Straw	**0.44**	36	
								Grain	<0.01	43	
								Straw	0.49	43	

(1) N.A. : not applicable (°) Samples could be exchanged, by mistake
(+) n.d. = not detectable (limit of detection : 0.002 mg/kg for grain, ears and rest plants and 0.01 mg/kg for straw)

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-228-01 D-67319 Wattenheim Germany	Winter wheat/ Herzog	1. 03 Oct. 1995 2. 08 June 1996 to 28 June 1996 3. 07 Aug. 1996	N.A. (1) N.A. (1)	397.2 398.6	0.089 0.090	14 May 1996 03 July 1996	BBCH 71 (watery ripe)	Whole plant Whole plant Ears Rest plants (°) Ears Rest plants (°) Grain Straw Grain	0.04 1.25 0.28 0.44 0.12 0.39 **<0.01** **0.53** <0.01	-0 0 14 14 28 28 35 35 42	-

(1) N.A. : not applicable (°) plants with ears removed (+) not detectable

								Straw	0.44	42	
96-228-02 D-52391 Vettweisse Germany	Winter wheat/ Soissons	1. 02 Oct. 1995 2. 06 June 1996 to 14 June 1996 3. 29 July 1996	N.A. (1) N.A. (1)	398.8 398.8	0.090 0.090	09 May 1996 21 June 1996	BBCH 71 (watery ripe)	Whole palnt Whole plant Ears Rest plants (°) Ears Rest plants (°) Grain Straw Grain Straw	0.20 1.34 0.31 0.75 0.09 0.75 **<0.01** **0.75** n.d. (+) 0.66	-0 0 14 14 28 28 35 35 42 42	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	**CARAMBA ®**	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
H1501901	Winter wheat	1. 07.10.97	T01	291.69	88.08	20.05.98		ears	1.3	0 (38)	
		2. 15.06-21.06.98	T02	93.12	93.12	21.06.98	69-71 (end of flowering-watery ripe)				
D-04509 Kreuma/ Zschortau	Contur	3. 29.07.98						rest of the plant	2.4	0 (38)	
								grain	5.7	35 (3)	
								straw	6.8	35 (3)	
								grain	9.11	38 (0)	
								straw	10.12	38 (0)	

H1570901 D-74572 Kottmanns- weiler	Winter wheat Brigadier	1. 20.10.97 2. 14.06- 23.06.98 3. 07.08.98	T01 T02	305.01 295.83	92.12 89.34	16.05.98 23.06.98	69 (end of flowering)	ears rest of the plant grain straw grain straw	1.3 2.4 5.7 6.8 9.11 10.12	0 (45) 0 (45) 35 (10) 35 (10) 45 (0) 45 (0)	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-229-01 Draycott Moreton in the Marsh Gloucester-shire	Winter wheat/Riband	1. 7 Oct. 1995 2. not available 3. 17 Aug. 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	2 June 1996 26 June 1996	BBCH 71 (watery ripe)	Grain Straw Grain Straw	**<0.01** **0.64** <0.01 0.98	35 35 42 42	-

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):		Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-230-01 Hidcote Boyce Gloucestershire	Winter wheat/ Hunter	1. 02 Oct. 1995 2. not available 3. 16 Aug. 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	02 June 1996 26 June 1996	BBCH 69-71 (end of flowering to watery ripe)	wole plant whole plant ears rest plants (°) ears rest plants (°)	0.53 1.46 0.38 1.00 0.12 0.66	-0 0 14 14 28 28	

								grain straw grain straw	**0.04** **0.76** 0.03 0.54	35 35 42 42	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
26750 St-Paul les Romans, Quartier des Chirouzes France FBD/11/01	Wheat/ Aztec	1. 06 Oct. 2000 2. 10 May to 31 May 2001 3. 06 July 2001	0.030 0.030 Teatment : Foliar spray, Sprayer with boom	294 309	0.088 0.093	17 April 2001 18 May 2001	BBCH 65	Plant Ears Rest of plant Ears Rest of plant Grain Straw Grain Straw	1.97 0.43 1.72 0.21 0.51 **<0.01** **0.48** <0.01 0.72	0.40 0.09 0.27 0.05 0.13 **<0.01** **0.09** <0.01 0.12	2.37 0.52 1.99 0.26 0.64 **<0.02** **0.57** <0.02 0.84	0 13 13 28 28 35 35 42 42	None

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
26750 St-Paul les Romans, Quartier des Chirouzes France FBD/12/01	Wheat/ Tremie	1. 05 Oct. 2000 2. 10 May to 31 May 2001 3. 06 July 2001	0.030 0.030 Teatment : Foliar spray, Sprayer with boom	294 309	0.088 0.093	17 April 2001 18 May 2001	BBCH 65	Plant Ears Rest of plant Ears Rest of plant Grain Straw Grain Straw	1.58 0.48 1.02 0.13 0.43 **<0.01** **0.19** <0.01 0.23	0.32 0.08 0.19 0.03 0.10 **<0.01** **0.04** <0.01 0.05	1.90 0.51 1.21 0.16 0.53 **<0.02** **0.23** <0.02 0.28	0 13 13 28 28 35 35 42 42	None

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
31840 Aussonne, chemin de Paucy France FTL/13/01	Wheat/ Courtaus	1. 02 déc. 2000 2. 20 May to 04 june 2001 3. 06 July 2001	0.030 0.030 Teatment : Foliar spray, Sprayer with boom	294 309	0.092 0.092	18 April 2001 29 May 2001	BBCH 65	Plant	1.99	0.38	2.37	0	None
								Ears	0.21	0.05	0.26	15	
								Rest of plant	0.40	0.08	0.48	15	
								Ears	0.13	0.03	0.16	28	
								Rest of plant	0.29	0.07	0.36	28	
								Grain	**<0.01**	**<0.01**	**<0.02**	36	
								Straw	**0.19**	**0.04**	**0.23**	36	
								Grain	<0.01	<0.01	<0.02	43	
								Straw	0.17	0.04	0.21	43	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
31330 Merville 288 Tres Caps France FTL/14/01	Wheat/ Grena	27 oct 2000 08May to 19 mai 2001 3. 07 July 2001	0.030 0.030 Teatment : Foliar spray, Sprayer with boom	317 272	0.095 0.082	09 April 2001 12 May 2001	BBCH 65	Plant Ears Rest of plant Ears Rest of plant Grain Straw Grain Straw	2.99 0.16 0.63 0.06 0.30 **<0.01** **0.19** <0.01 0.34	0.42 0.03 0.12 0.01 0.07 **<0.01** **0.04** <0.01 0.10	2.51 0.19 0.75 0.07 0.37 **<0.02** **0.23** <0.02 0.44	0 15 15 28 28 36 36 43 43	None

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
Marsh Gibbon, Edgcott, Bucks HP 18 OUA UK OAT/24/01	wheat:Mercia	1. 26 Oct. 2000 2. 15 June to 30 June 2001 3. 06 Aug to 07 Aug 2001	0.030 0.030 treatment : Foliar spray, Compressed air sprayer	299 289	0.090 0.087	23 May 2001 21 June 2001	BBCH 65	Plant	1.91	0.21	2.12	0	None
								Ears	0.46	0.09	0.55	15	
								Rest of plant	1.17	0.22	1.39	15	
								Ears	0.09	0.02	0.11	28	
								Rest of plant	0.49	0.10	0.59	28	
								Grain	**<0.01**	**<0.01**	**<0.02**	35	
								Straw	**0.46**	**0.11**	**0.57**	35	
								Grain	0.01	<0.01	0.02	43	
								Straw	0.33	0.09	0.42	43	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
Wallington, Oxon, OX 9 5DS UK OAT/25/01	Wheat/ Claire	1. 10 sept 2000 2. 15 June to 25 June 2001 3. 05 Aug to 06 Aug 2001	0.030 0.030 treatment : Foliar spray, Compressed air sprayer	282 285	0.085 0.086	23 May 2001 21 June 2001	BBCH 65	Plant	1.33	0.20	1.53	0	None
								Ears	0.13	0.03	0.16	14	
								Rest of plant	0.73	0.16	0.89	14	
								Ears	0.04	<0.01	0.05	27	
								Rest of plant	0.48	0.13	0.61	27	
								Grain	**<0.01**	**<0.01**	**<0.02**	34	
								Straw	**0.68**	**0.19**	**0.87**	34	
								Grain	<0.01	<0.01	0.02	41	
								Straw	1.24	0.32	1.56	41	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	BAS 555 F	Formulation (e.g. WP):	SL (formulation code SF09381)
Crop/crop group:	**wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	**BASF plc**	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g /L	Residues calculated as:	BAS 555F
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
Averon Bergelle F-32290 00-731-282	Winter Wheat/ Soissons	1. 02 nov 1999 2. 05-15 may 2000 3early july 2000	0.030 0.030 treatment : Foliar spray, Compressed air sprayer	284 284	0.085 0.085	18 april 2000 12 May 2000	BBCH 65	Whole plant Whole plant Plant without Ears Ears Grain Straw	0.20 2.06 0.67 0.65 0.11 **0.04** <0.01 **0.22** 0.39	0.05 0.33 0.12 0.11 0.03 **<0.01** <0.01 **0.05** 0.09	0.25 2.39 0.79 0.73 0.14 **0.05*** <0.02 **0.27** 0.48	0- o+ 14 26 26 34 45 34 45	None

*where a result for the tra isomer is below the LOQ, the LOQ value is used when summing the isomers to obtain the total metconazole content.

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	Metconazole	Formulation (e.g. WP):	SL formulation reference SF 09381
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g a.s./L	Residues calculated as:	Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	4756

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
Espas F-32370 00-731-283	Winter wheat/ Aztec	1. 05 Nov 1999 2. 05 to 15 May 2000 3. Early July 2000	0.030 0.030 Treatment : Foliar spray Knapsack sprayer with boom Medium volume	284 284	0.085 0.085	18 April 2000 12 May 2000	BBCH 64-65	whole plant whole plant plant without ears Ears Grain	0.16 1.23 0.48 0.42 0.08 **0.02** <0.01	0.04 0.27 0.09 0.10 0.02 **<0.01** <0.01	0.20 1.50 0.57 0.52 0.10 **0.03*** <0.02	0- 0+ 14 26 26 34 45	

								Straw	**0.24** 0.30	**0.06** 0.08	**0.30** 0.38	34 45	

*where a result for the tra isomer is below the LOQ, the LOQ value is used when summing the isomers to obtain the total metconazole content.

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	Metconazole	Formulation (e.g. WP):	SL formulation reference SF 09381
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g a.s./L	Residues calculated as:	Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	4756

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
Le Thor F-84250 00-731-638	Winter Wheat/Manit al	1. 15 Nov. 1999 2. 28 April to 06 May 2000 3. End June to early July 2000	0.025 0.025 Treatment Foliar spray Boom sprayer Medium volume	354 370	0.087 0.091	30 March 2000 15 May 2000	BBCH 75	whole plant whole plant plant without ears Ears Ears Grain	0.06 0.99 0.42 0.18 0.05 **<0.01** <0.01	0.02 0.17 0.10 0.06 0.02 **<0.01** <0.01	0.08 1.16 0.52 0.24 0.07 **<0.02** <0.02	0- 0+ 14 29 29 35 42	

								Straw	**0.22** 0.15	**0.08** 0.04	**0.30** 0.19	35 42	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	Metconazole	Formulation (e.g. WP):	SL formulation reference SF 09381
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	BASF Agro Research
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g a.s./L	Residues calculated as:	Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	4756

1	2	3	4			5	6	7	8			9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg			PHI (days)	Re-marks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha				cis	trans	total		
Sarrians F-84260 00-731-639	Winter wheat/Manitaal	1. 07 Dec 1999 2. 05 to 12 May 2000 3. Early July 2000	0.022 0.023 Treatmen : Knapsack sprayer Medium volume	387 400	0.087 0.090	07 April 2000 22 May 2000	BBCH 75-77	Whole plant	0.04 1.48	0.01 0.16	0.05 1.64	0- 0+	
								whole plant	0.32	0.06	0.38	14	
								Plant without ears	0.15	0.04	0.19	28	
								Ears	0.05	0.01	.06	28	
								Grain	**<0.01** <0.01	**<0.01** <0.01	**<0.02** <0.02	35 42	
								Straw	**0.13**	**0.03**	**0.16**	35	

									0.31	0.08	0.39	42	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL 09381
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
95-104-01 D-67311 Tiefenthal	Winter rye/ Marder	1. 28 Sep. 1994 2. 09 June 1995 3. 31 July 1995	N.A. (1) N.A. (1)	397.5 398.5	0.090 0.090	4 May 1995 29 June 1995	BBCH 71 (water ripe)	Ears rest plant Ears Rest plant Ears Rest palnt Grain Straw Grain Straw	0.93(°) 0.16 <0.01(°) 0.75 0.29 0.59 <0.01 0.35 **<0.01** **0.37**	-0 -0 0 0 13 13 27 27 34 34	-

								Grain Straw	<0.01 0.27	42 42	

(1) N.A. : not applicable (°) Samples could be exchanged, by mistake. Analytical results has been confirmed by duplicate analysis

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter wheat/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-236-01 D-85778 Haimhausen	Triticale / Modus	1. 04 Oct. 1995 2. 06 June 1996 to 18 June 1996 3. 05 Aug. 1996	N.A. (1) N.A. (1)	402.68 404.03	0.091 0.091	21 May 1996 19 June 1996	BBCH 71	Grain Straw Grain Straw	**<0.01** **0.16** <0.01 0.16	35 35 42 42	-

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
95-100-01 D-52391 Vettweisse	Winter Barley/Catania	1. 29.09.94 2. 20 to 25.05.95 3. 10.07.95	N.A. (1)	397.3 400.0	0.0596 0.0601	03.05.95 02.06.95	BBCH 71 (water ripe)	grain straw grain straw	n.d.(+) 0.09 n.d. (+) 0.08	35 35 41 41	-
			N.A. (1)	398.5 398.5	0.0897 0.0897	03.05.95 02.06.95	BBCH-71 (water ripe)	grain straw grain straw	**<0.01** **0.13** <0.01 0.07	35 35 41 41	-

			N.A. (1)	398.6 398.6	0.0598 0.0598	03.05.95 18.05.95	BBCH 53 (30% of inflorescence emerged)	grain straw	<0.01 0.07	53 53	-
			N.A.(1)	397.0 398.5	0.0894 0.0897	03.05.95 18.05.95	BBCH 53 (30 % of inflorescence emerged)	grain straw	<0.01 0.27	53 53	-

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						

96-246-01 MacMerry, East Lothian, Scotland	Winter barley/Pastor al	1.12 Sep 1995 2. Not Recorded 3. 30 Jul. 1996	N.A. (1) N.A. (1)	200.9 211.7	0.091 0.095	10 May 1996 18 June 1996	BBCH71 (watery ripe)	Grain Straw Grain Straw	**0.09** **1.06** 0.05 1.26	35(°) 35 (°) 42 42	-

(1) N.A. : not applicable
(°) Due to heavy rainfall on the day of sampling which resulted in wet samples, the samples were stored three days until they were dry and afterwards they were threshed and deep frozen.

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-226-01 Brailes Banbury Oxfordshire	Winter barley/ Fighter	1) 23 Sep. 1995 2. no available 3) 25/26 July 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	13 May 1996 18 June 1996	BBCH 71 (watery ripe)	grain straw grain straw	**0.03** **1.61** 0.03 1.13	35 35 42 42	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-224-01 D-53881 Euskirchen-Oberwichterich (Treatment 3)	Winter barley/Catania	1. 30 Sep 1995 2. 28 May 1996 to 06 June 1996 3. 15 July 1996	N.A. (1) N.A. (1)	398.8 398.8	0.090 0.090	09 May 1996 10 June 1996	BBCH 71 (watery ripe)	Grain straw grain straw	**0.02** **0.23** 0.02 0.32	35 35 42 42	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Spring barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-219-01 Hidcote Boyce Gloucester-shire	Spring barley/ Cooper	1. 20 March 1996 2. not available 3. 13 Aug 1996	N.A. (1) N.A. (1)	Approx. 200 Approx. 200	0.090 0.090	10 June 1996 2 July 1996	BBCH 71 (watery ripe)	Grain Straw Grain Straw	**0.01** **0.82** <0.01 0.61	35 35 42 42	-

96-219-02 Cutsdean Gloucester- shire	Sprin barley/ Chariot	1. 12 March 1996 2. not available 3. 20 Aug. 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	13 June 1996 8 July 1996	BBCH 71 (watery ripe)	Grain Straw Grain +Straw	**0.03** **0.99** 0.02 1.68	35 35 42 42	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Spring barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
97-105-01 St Mary Bourne, Andover, Hampshire SP116AJ	Spring/ barley/ Alexis	1) 09 March 1997 2. 12-18 June 1997 3. 10 Aug. 1997	N.A. (1) N.A. (1) Treatment : Spraying Spraying	212 2002	0.096 0.091	05 June 1997 17 June 1997	BBCH 71 (watery ripe)	grain straw	**0.01** **0.37**	36(°) 36(°)	BBCH 85 (soft dough) BBCH 85 (soft dough)

97-105-02 Sowerby, Thirsk, North Yorkshire Y07 3BP	Spring barley/ Chariot	1. 09 March 1997 2. 12 – 18 June 1997 3. 10 Aug. 1997	N.A. (1) N.A. (1) Treatment : Spraying Spraying	202 191	0.091 0.086	04 June 1997 20 June 1997	BBCH 71 (watery ripe)	grain straw grain straw	**<0.01** **0.15** n.d. 0.18	37(°) 37(°) 53 53	BBCH 87 (hard dough) BBCH 87 (hard dough) BBCH 92 (over ripe) BBCH 92 (over ripe)

(1) N.A. : not applicable (°) Samples were dried at room temperature then hand threshed the day after sampling. The PHI given therefore refers to the sampling in the field.

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
95-101-01 D-67319 Watten-heim	Winter barley/ trixi	1. 24 Sep. 1994 2. 25 May 1995 3) 20 July 1995	N.A. (1) N.A. (1)	398.8 397.5	0.060 0.060	4 May 1995 19 June 1995	BBCH 75 (medium milk)	Ears Rest plant ears rest plant ears rest plant grain straw	0.02 0.06 1.14 0.53 0.14 0.35 0.03 0.22	-0 -0 0 0 14 14 28 28	-

								grain straw grain straw	0.02 0.10 002 0.07	35 35 42 42	

			N.A. (1) N.A. (1)	400.0 398.8	0.090 0.090	4 May 1995 19 June 1995	BBCH 75 (medium milk)	ears rest plant ears rest plant ears rest plant grain straw grain straw grain straw	0.03 0.06 1.37 0.72 0.32 0.49 0.06 0.46 0.05 **0.18** 0.04 0.13	-0 -0 0 0 14 14 28 28 35 35 42 42	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-245-01 Tranent East Lothian, Scotland	Winter barley/ halcyon	1. Not Recorded 2. Not recorded 3. 04 Aug. 1996	N.A. (1) N.A. (1)	198.2 191.8	0.089 0.086	10 May 1996 27 June 1996	BBCH 71 (watery ripe)	whole plant Whole plant ears rest plant (°) ears rest palnt (°) Grain straw grain	0..15 1.41 0.39 0.86 0.20 0.62 **0.05** **0.73** 0.03	-0 0 14 14 28 28 35 35 38	-

								straw	0.54	38	

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	Germany	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-223-01 D-52391 Vettweisse (Treatent 3)	Winter barley/ Milva	1. 29 Sep. 1995 2. 26 May 1996 to 03 June 1996 3. 12 July 1996	N.A. (1) N.A. (1)	399.0 399.0	0.090 0.090	09 May 1996 07 June 1996	BBCH 71 (watery ripe)	Whole plant whole plant ears plants with ears removed ears plants with ears removed grain straw	0.28 1.59 0.10 0.45 0.05 0.33 **0.03** **0.22**	-0 0 14 14 28 28 35 35	-

								grain straw	<0.01 0.22	42 42	

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**winter barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-225-01 Hidcote Boyce Chipping Campden Gloucestershire	Winter barley/ Pastoral	1. 29 Sep. 1995 2. not available 3. 24 July 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	13 May 1996 17 June 1996	BBCH 71 (watery ripe)	whole plant whole plant ears rest plants (°) ears rest plants (°) grain strawgrain	0.31 1.44 0.44 1.26 0.33 1.33 **0.03** **1.33** 0.05	-0 0 14 14 28 28 35 35 42	-

								straw	1.33	42	

(1) N.A. : not applicable (°) plants with ears removed

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**spring barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-220-01 Chipping Campden Gloucester-shire	Spring barley/ Cooper	1. 20 March 1996 2. not available 3. 13 Aug 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	7 June 1996 2 July 1996	BBCH 71 (watery ripe)	whole plant whole plant ears plants with ears removed ears plants with ears removed grain straw	0.14 1.67 0.21 0.67 0.13 0.58 **0.01** **0.74**	-0 0 14 14 28 28 35 35	-

								grain straw	0.01 0.63	42 42	

(1) N.A. : not applicable

96-220-02 Broadway Worcester- shire	Spring barley/ Chariot	1.10 March 1996 2. not available 3. 26-27 Sept. 1996	N.A. (1) N.A. (1)	approx. 200 approx. 200	0.090 0.090	10 June 1996 2 July 1996	BBCH 69 to 71 (end of flowering to watery ripe)	whole plant whole plant ears plants with ears removed ears plants with ears removed grain straw grain straw	0.23 1.94 0.26 0.91 0.14 0.64 **0.03** **1.37** 0.01 0.80	-0 0 14 14 28 28 35 35 42 42	-

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**spring barley/cereals**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	United Kingdom	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
97-106-01 Bradley Hampshire SO24 95A	spring barley/Optic	1. 11 March 1997 2. 10-15 June 1997 3. 12 Aug. 1997	N.A. (1) N.A. (1) Treatment spraying spraying	199 210	0.090 0.094	04 June 1997 17 June 1997	BBCH 71 (watery ripe)	whole plant whole plant ears plants with ears removed ears plants with ears removed grain straw	1.21 3.99 0.11 0.53 0.02 0.23 **<0.01** **0.32**	-0 +0 14 14 29 29 36 (°) 36 (°)	BBCH 71 (watery ripe) BBCH 71 (watery ripe) BBCH 83 (early dough) BBCH 83 (early dough) BBCH 85 (soft

								grain straw	<0.01 0.16	56 56	dough) BBCH 85 (soft dough) BBCH 85 (soft dough) BBCH 85 (soft dough) BBCH 92 (over-ripe) BBCH 92 (over-ripe)

97-106-02 Bradley Thirsk, North Yorkshire Y073AP	spring barley/ Corniche	1. 07 April 1997 2. 23-30 June 1997 3. 12 Aug. 1997	N.A. (1) N.A. (1) Treatment spraying spraying	204 195	0.092 0.088	05 June 1997 02 July 1997	BBCH 71 (watery ripe)	whole plant whole plant ears plants with ears removed ears plants with ears removed grain straw grain straw	0.09 1.76 0.07 0.14 0.01 0.05 <0.01 0.03 **<u><0.01</u>** **<u>0.03</u>**	-0 +0 14 14 28 28 35 35 43 43	BBCH 71 (watery ripe) BBCH 71 (watery ripe) BBCH 83 (early dough) BBCH 83 (early dough) BBCH 87 (hard dough) BBCH 87 (hard dough) BBCH 91 (soft dough) BBCH 91 (soft dough) BBCH 92 (over-ripe) BBCH 92 (over-ripe)

(1) N.A. : not applicable
(°) Samples were dried at room temperature then hand threshed the day after sampling. The PHI given therefore refers to the sampling in the field.

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oilseeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
95-122-396 Le Plessis Hebert France	Autumn Oilseed Rape/Gazelle	1. 2 Sept.. 94 2. – 3. 12 Jul 95	0.0225 0.0225	400 400	0.09 0.09	27 April 1995 11 May 1995	11 May 1995 Z 71	Seeds	**< 0.01**	62	
95-122-397 Le Plessis Hebert France	Autumn Oilseed Rape/ Synergy	1. 12 Sept. 94 2. – 3. 20 Jul. 95	0.0025 0.0225	400 400	0.09 0.09	27 April 1995 11 May 1995	11 May 1995 Z 71-75	Seeds	**< 0.01**	70	

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oilseeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France-North	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-216-318 F-27120 Boncourt	Oil seed Rape/ Capitole	1. 1 Sept. 95 2. not recorded 3. 18 July 96	N.A. (1) N.A. (1)	364 364	0.090 0.090	30 April 1996 14 May 1996	BBCH 69 to 71 (end of flowering to 10 % of pods have reached final size)	Seeds	**< 0.01** (°)	65	-

96-216-420 F-02190 Pingnicourt	Oil seed Rape/ Goéland	1. 29 Aug. 95 2. Not recorded 3. 18 July 1996	N.A. (1) N.A. (1)	300 300	0.090 0.090	7 May 1996 23 May 1996	BBCH 71 (10 % of pods have reached final size)	Seeds	**0.06**	56	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oilseeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-215-316 27120 Caillouet Orgeville	Oil seed rape/ Goeland	1. 10 Sep. 1995 2. not available 3. 25 July 1996	N.A. (1) N.A. (1)	364.0 364.0	0.090 0.090	30 April 1996 14 May 1996	BBCH 69/71 (end of flowering to 10 % of pods have reached final size)	plants (°) Seeds	0.58 1.91 0.76 0.13 0.05 **<0.01**	-0 0 14 29 41 65	-

96-215-317 27120 Pacy sur eure Orgeville	Oil seed rape/ Goeland	1. 12 Sep. 1995 2. not available 3. 20 July 1996	N.A. (1) N.A. (1)	364.0 364.0	0.090 0.090	30 April 1996 14 May 1996	BBCH 69/71 (end of flowering to 10 % of pods have reached final size)	plants (°) Seeds	0.58 2.05 0.38 0.11 0.06 **<0.01**	-0 0 14 29 41 65	-

(1) N.A. : not applicable (°) plants without roots

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oil seeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-215-418 51490 Epoye	Oil seed rape/Synergie	1. 02 Sep. 95 2. Not available 3. 18 July 96	N.A. (1) N.A. (1)	300.0 300.0	0.090 0.090	7 May 96 23 May 96	BBCH 71 (10 % of pods have reached final size)	plants (°) Seeds	0.47 1.24 0.41 0.16 0.13 **0.04**	-0 0 15 29 40 56	-

96-215-419 02190 Pignicourt	Oil seed rape/ Goeland	1. 29 Aug. 95 2. not available 3. 18 July 96	N.A. (1) N.A. (1)	300.0 300.0	0.090 0.090	7 May 96 23 May 96	BBCH 69 (end flowering)	plants (°) Seeds	0.20 2.16 0.28 0.17 0.12 **0.07**	-0 0 15 29 40 56	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oil seeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-218-604 84740 Velleron	Oil seed rape/ Capitole	1. 20 Sep. 95 2. Not available 3. end of June 96	N.A. (1) N.A. (1)	366.6 366.6	0.090 0.090	25 April 96 09 May 96	BBCH 69 (end of flowering)	Seeds	0.11	39	-

96-218-294 33420 Camiac et St.-Denis	Oil seed rape/ Synergy	1. 11 Sep. 95 2. not available 3. 25 June 96	N.A. (1) N.A. (1)	400.0 400.0	0.090 0.090	15 April 96 29 april 96	BBCH 75 (50 % of pods have reached final size)	Seeds	**0.05**	57	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oil seeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-218-295 33760 Martres	Oil seed rape/ Goeland	1. 15 Sep. 95 2. Not available 3. 25 June 96	N.A. (1) N.A. (1)	400.0 400.0	0.090 0.090	15 April 96 29 April 96	BBCH 75 (50 % of pods have reached final size)	Seeds	**0.04**	57	-
96-218-296 33760 Martres	Oil seed rape/ Synergy	1. 11 Sep. 95 2. not available 3. 24 June 96	N.A. (1) N.A. (1)	400.0 400.0	0.090 0.090	15 April 96 29 April 96	BBCH 75 (50 % of pods have reached final size)	Seeds	**0.03**	56	-

(1) N.A. : not applicable (°) plants without roots

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oil seeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
98-103-283 F-33760 Martres, France (South) (treatment 2)	Oil seed rape / Synergie	1. 10 Sep 97 2. 30 March 98 3. 04 July 98	N.A. N.A. Treatment : Foliar application	431 431	0.079 0.079	06 April 98 21 April 98	BBCH 69-71 (end of flowering to 10 % of pods have reached final size)	Seeds	**< 0.01**	62	-

98-103-283 F-33760 Martres, France (South) (treatment 3)	Oil seed rape/ Synergie	1. 10 Sep. 97 2. 30 March 98 3. 04 July 98	N.A. N.A. Treatment : Foliar application	431 431	0.079 0.079	12 May 98 25 May 98	BBCH 75-77 (50-70% of pods have reached final size)	Seed	0.01	28	-

(1) N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oil seeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
98-103-284 F-33540 St.-Brice, France (South) (treatment 2)	Oil seed rape / Synergie	1. 08 Sep. 97 2. 25 March 98 3. 30 June 98	N.A. N.A. Treatment : Foliar application	431 431	0.079 0.079	02 April 98 16 April 98	BBCH 67-69 (flowering declining to end of flowering)	Seed	**0.02**	63	-

98-103-284 F-33540 St.-Brice, France (South) (treatment 3)	Oil seed rape/ Synergie	1. 08 Sep. 97 2. 25 March 98 3. 30 June 98	N.A. N.A. Treatment : Foliar application	431 431	0.079 0.079	06 May 98 20 May 98	BBCH 75-77 (50-70 % of pods have reached final size)	Seed	0.06	29	-

N.A. : not applicable

FIELD TRIALS, CROP RESIDUE SUMMARY

Active ingredient (common name):	(1 RS, 5RS:1RS,5SR)-5-(4-chlorobenzyl)-2,2-dimethyl-1-(1H-1,2,4-triazol-1-ylmethyl)cyclopentanol (IUPAC) Metconazole	Formulation (e.g. WP):	SL
Crop/crop group:	**Oil Seed Rape/Oil seeds**	Producer of commercial product:	American Cyanamid Company
Commercial product (name):	-	Submission date:	
Country:	France (South)	Indoor/outdoor:	Outdoor
Content of active substance (g/kg or g/l) :	60 g ai/L	Residues calculated as:	Sum of cis- and trans-isomer of Metconazole
Responsible body for reporting (name, address):	Cyanamid Forschung GmbH, Postfach 100 – D-55270 Schwabenheim	Other active substance in the formulation (common name and content):	None

1	2	3	4			5	6	7	8	9	10
Report No./ Location	Commodity/ Variety	Date of 1.Sowing or Planting 2.Flowering 3.Harvest	Application rate per treatment			Dates of treatment(s) or no. of treatment(s) and last date	Growth stage at last treatment or date	Portion analyzed	Residues mg/kg	PHI (days)	Remarks
			kg a.s./hl	Water (l/ha)	kg a.s./ ha						
96-217-297 F-33420 Camiac et St.-Denis	Oil seed rape/synergy (C: 430)	1. 11 Sep. 95 2. not recorded 3. 25 June 96	N.A. N.A.	400 400	0.090 0.090	15 April 96 29 April 96	BBCH 69 (end of flowering)	plants * plants * plants * plants * plants * seeds	0.39 0.99 0.24 0.14 0.09 **0.05**	-0 +0 14 29 39 57	

96-217-298 F-33760 Martres	Oil seed Rape/ Goeland (C: 406)	1. 15 Sep. 95 2. not recorded 3) 25 June 96	N.A. N.A.	400 400	0.090 0.090	15 April 96 29 April 96	BBCH 69 (end of flowering)	plants * plants * plants * plants * plants * seeds	0.14 0.88 0.17 0.06 0.07 **0.02**	-0 +0 14 29 39 57	-
96-217-299 F-33760 Martres	Oil seed Rape/ Synergy (C: 430)	1. 11 Sep. 95 2. not recorded 3. 25 June 96	N.A. N.A.	400 400	0.090 0.090	15 April 96 29 April 96	BBCH 69 (end of flowering)	plants * plants * plants * plants * plants * seeds *	0.17 1.90 0.42 0.11 0.13 **0.02**	-0 +0 14 29 39 57	-
96-217-603 F-84740 Velleron	Oil seed Rape/ Capitole	1. 20 Sep 95 2. not recorded 3. 17 June 96	N.A. N.A.	366.66 366.66	0.090 0.090	25 April 96 9 May 96	BBCH 69 (end of flowering)	pods pods pods pods seeds	not analysed not analysed not analysed not analysed 0.09	-0 +0 14 28 39	-

N.A. : not applicable * : plants without roots