

OPP OFFICIAL RECORD
HEALTH EFFECTS DIVISION
SCIENTIFIC DATA REVIEWS
EPA SERIES 361

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

MEMORANDUM

DATE: 10/06/2004

SUBJECT: Prothioconazole Residue Chemistry Database Scope.

Petition No.	4F6830	Decision No:	341716
DP Barcodes:	309008	40 CFR:	Not Established
Chemical No.:	113961	Class:	Fungicide
Trade Name:	Prothioconazole Technical	EPA Reg No.:	264-IEU
	Proline 480 SC Fungicide		264-XXX

TO: J. Tomerlin/D. McNeilly, RM Team 22
FB/RD (7505C)

FROM: William D. Wassell, Chemist
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RAB3/HED (7509C)

THRU: Leung Cheng, Ph.D., Team Leader
RAB3/HED (7509C)

HED has examined the residue chemistry database for the new active ingredient prothioconazole. The database scope process is designed to provide reasonable assurance that available data are of sufficient range and quality to support the requested registrations and tolerances. At this time, based on this process, there are no known residue chemistry data gaps that preclude initiation of detailed data review for petition.

Additional Data Requirements:

- * Storage stability data are required for residues in a nonoily grain (i.e., wheat, rice, or barley), an oilseed (i.e. canola or peanut), mustard greens, and turnips for approximately 1200 days and for residues in dried pea and dried beans for approximately 525 days.
- * Storage stability data are required for residues in processed commodities of a nonoily grain (i.e. wheat, or rice) and an oilseed (i.e. canola or peanut).

Residue Chemistry Submission Screening Matrix - Note: All comments and conclusions are based on claims made in the submitted materials and not on independent Agency evaluation.

OCT 26 2004

H.S.

Commodity-Specific Data (860.1200, 860.1500, and 860.1550)									
Commodity	Directions for Use		Residue Data					Proposed Tolerance, ppm	
	Max. Total Rate, lb ai/A/yr	PHI, days	No. trials submitted (requested)	Concurrent Recovery Range, %	Storage Duration, days	Total Rate, lb ai/A	PHI, days	Max. Residue, Parent (triazole) ppm	
Barley									
- Barley, grain MRID No. 462462-20	0.292	32	46	74-100	1222	0.28-0.31	30-71	0.15 ^a (0.915) ^b	0.2
- Barley, hay same as above			45	76-101	1222	0.28-0.31	12-16	6.59 (0.547)	7.0
- Barley, straw same as above			45	80-103	1222	0.28-0.31	30-71	1.87 (0.385)	2.0
- Barley, pearled barley - study not submitted									0.2
- Barley, bran - study not submitted									0.4
Canola									
- Canola, Seed MRID No. 462462-15	0.356	36	22 (8)	71 - 102	1215	0.36	36 to 83	0.09 (0.66)	0.1
- Canola, meal MRID No. 462462-24	N/A	N/A	N/A	79 - 105	935	1.83	47	<0.02 (3.29)	N/A
- Canola, refined oil same as above	N/A	N/A	N/A	67 - 117	933			<0.02 (<0.02)	N/A
Dried shelled Pea and bean (except soybean) Subgroup 6-C									
- dried pea MRID No. 462462-21	0.534	7	13 (5)	70 - 119	524	0.40 0.54	7 to 8	0.79 (0.78)	0.8
- dried bean MRID No. Same as above			10 (9)	70 - 102	511	0.40 0.54	7 to 8	0.24 (0.25)	0.8
Oilseed Crop Subgroup (Does not exist??)									
- Black mustard seed	0.356	36							0.1

Commodity	Directions for Use		Residue Data						Proposed Tolerance, ppm
	Max. Total Rate, lb ai/A/yr	PHI, days	No. trials submitted (requested)	Concurrent Recovery Range, %	Storage Duration, days	Total Rate, lb ai/A	PHI, days	Max. Residue, Parent (triazole) ppm	
- Borage, seed									0.1
- Canola, seed									0.1
- Crambe, seed									0.1
- Field mustard, seed									0.1
- Flax, seed									0.1
- Indian rapeseed									0.1
- Rapeseed, seed									0.1

Commodity	Directions for Use		Residue Data					Proposed Tolerance, ppm		
	Max. Total Rate, lb ai/A/yr	PHI, days	No. trials submitted (requested)	Concurrent Recovery Range, %	Storage Duration, days	Total Rate, lb ai/A	PHI, days		Max. Residue, Parent (triazole) ppm	
Peanut										
- Peanut, nutmeat MRID No. 462462-17	0.7125	14	12 (12)	71 - 102	1211	0.72	13 to 15	<0.02 (<0.02)	0.02	
- Peanut, hay same as above				71 - 102	1208			3.63 (<0.02)		5.0
- Peanut, meal MRID No. 462462-23	N/A	N/A	N/A	80 - 113	918	3.6	14	0.16 (<0.01)	0.3	
- Peanut, refined oil same as above				74 - 102	917			<0.02 (<0.01)		
- Peanut, dry roasted same as above				77 - 111	917			0.02 (1.30)		
- - Peanut, butter same as above				82 - 109	918			<0.02 (1.42)		
Rice										
- Rice, grain MRID No. 462462-16	0.285	40	16 (16)	71 - 113	1210	0.36	40 to 67	0.19 (0.55)	0.25	
- Rice, straw same as above				71 - 105	1133			1.33 (0.84)		1.5
- Rice, polished grain MRID No. 462462-22	N/A	N/A	N/A	67 - 104	899	1.82	49	<0.02 (<0.01)	N/A	
- Rice, bran same as above				74 - 104	903			0.11 (<0.01)		N/A
- Rice, hulls same as above				71 - 119	902			0.79 (<0.01)		
Wheat										

Commodity	Directions for Use		Residue Data						Proposed Tolerance, ppm
	Max. Total Rate, lb ai/A/yr	PHL, days	No. trials submitted (requested)	Concurrent Recovery Range, %	Storage Duration, days	Total Rate, lb ai/A	PHL, days	Max. Residue, Parent (triazole) ppm	
- Wheat, grain MRID No. 462462-19	0.293	30	46	66-102 (73-101)	35-36 months	0.281- 0.375	33-57	0.06 (1.76)	0.06
- Wheat, forage same as above			66	70-102 (83-98)	35-36 months	0.281-0 .375	7	6.99 (0.18)	7.0
- Wheat, hay same as above			14	75-103 (72-110)	35-36 months	0.281-0 .375	12-17	3.57 (0.66)	4.0
- Wheat, straw same as above			64-67	81-102 (77-100)	35-36 months	0.281-0 .375	10-57	1.96 (0.5)	2.3
- Wheat, bran MRID No. 462462-18			1	79-104 (70-91)	1285	0.90 (5x)	47	0.12 (2.4x) 4.18 (3.6x)	1.5
- Wheat, germ same as above	0.293	30	1	72-101 (72-110)	1285	0.90 (5x)	47	0.10 (2.0x) 4.84 (3.6x)	0.15
- Middlings same as above			1	77-110 (71-98)	1285	0.90 (5x)	47	0.03 (1x) 0.8 (1x)	
- Shorts same as above			1	90-111 (72-90)	1285	0.90 (5x)	47	0.05 (1.0x) 2.03 (1.5x)	
- grain, aspirated grain fractions same as above	0.293	30	1	82-102 (81-105)	1285	0.90 (5x)	47	12.5 (250x) 0.35 (1x)	13.0

Proposed tolerance expression:

Nature of the Residue (860.1300) - Primary crops.						
Matrix	Treatment Rate	% Identified	% Characterized	Parent/desthio Residue % TRR	Comments	
Spring Wheat (phenyl label - foliar application) - MRID No. 462461-41						
-forage (6 DAT)	400 g ai/ha	73.1	12.3	3.3/35.4	The majority of the radioactivity was the desthio metabolite (35.3% TRR, 3.7 ppm).	
- hay (26 DAT)		64.7	22.3	2.6/18.5	The majority of the radioactivity was the desthio metabolite (18.5% TRR, 1.64 ppm).	
- straw (48 DAT)		66.2	19.0	3.7/22.3	The majority of the radioactivity was the desthio metabolite (22.3% TRR, 5.95 ppm).	
- grain (48 DAT)		33.7	36.8	1.0/15.9	The majority of the radioactivity was the desthio metabolite (15.9% TRR, 0.0139 ppm).	
Spring Wheat (phenyl label - seed dressing) - MRID No 462461-42						
- Forage (57 DAT)	20 g ai/ 100 kg seed	30.3	7.0	0.4/10.9	The majority of the radioactivity was the desthio metabolite (10.9% TRR, 0.008 ppm).	
- Hay (110 DAT)		18.0	1.4	0.8/6.4	The majority of the radioactivity was the desthio metabolite (6.4% TRR, 0.005 ppm).	
- Straw (153 DAT)		32.8	47.5	0.6/6.6	The majority of the radioactivity was the desthio metabolite (6.6% TRR, 0.019 ppm).	
- Grain(153 DAT)		--	--	--	--	
Peanut (Phenyl label - foliar application) - MRID No. 462461-45						
- Peanut hay (14 DAT)	812 g ai/ha	74.1	10.6	1.8/26.7	The majority of the radioactivity was the desthio metabolite (26.7% TRR, 28.71 ppm).	
- Peanut nutmeat (14DAT)		65.1	25.0	--/--	--	
Sugar Beets (Phenyl label - foliar application) - MRID No. 462461-48						
- Sugar beet tops (7 DAT)	1152 g ai/ha	65	33	6/26	The majority of the radioactivity was the desthio metabolite (26% TRR, 1.14 ppm).	
- Sugar beet roots (7DAT)		60	32	-/41	The majority of the radioactivity was the desthio metabolite (41% TRR, 0.048 ppm).	
Nature of the Residue (860.1300) - Primary crops - desthio-prothioconazole - triazole label; MRID No. 462461-44						

Matrix	Treatment Rate	% Identified	% Characterized	desthio Residue % TRR	Comments
Spring Wheat (triazole label - foliar application) - MRID No. 462461-44					
- forage (0 DAT)	250 g ai/ha	93.7	2.7	86.8	
- forage (14 DAT)		89.9	4.0	76.9	
- straw (48 DAT)		83.6	6.7	71.9	
- grain (48 DAT)		91	3.9	2.3	

Nature of the Residue (860.1300). For triazole label studies with primary crops.					
Matrix	Treatment Rate	% Identified	% Characterized	Parent/desthio/TA Residue % TRR	Comments
Wheat (triazole label - foliar application) - MRID No. 462461-43					
- forage (? DAT)	470 g ai/ha	66	28	5/19/11	The majority of the radioactivity was the desthio metabolite followed by triazolyalanine (TA) (19% TRR, 1.5 ppm; 11%, 0.86 ppm, respectively).
- hay (? DAT)		75	21	3/8/19	The majority of the radioactivity was triazolyalanine (TA 19% TRR, 2.13 ppm).
- straw (? DAT)		61	35	6/7/3	--
- grain (? DAT)		94	6	-/-/71	The majority of the radioactivity was triazolyalanine (TA 71% TRR, 3.54 ppm).
Peanut (triazole label - foliar application) - MRID No. 462461-46					
- Peanut hay (14 DAT)	812 g ai/ha	77.0	17.9	2.6/23.6/1.2	The majority of the radioactivity was the desthio metabolite (23.6% TRR, 11.15 ppm).
- Peanut nutmeat (14 DAT)		82.7	15.4	--/6.2/47.8	The majority of the radioactivity was triazolyalanine (TA 47.8% TRR, 0.67 ppm).
Sugar Beets (triazole label - foliar application) - MRID No. 462461-47					
- Sugar beet tops (7 DAT)	1157 g ai/ha	69	29	5/19/2	The majority of the radioactivity was the desthio metabolite (19% TRR, 0.99 ppm).
- Sugar beet roots (7 DAT)		61	33	-/25/29	The majority of the radioactivity was triazolyalanine (TA 29% TRR, 0.38 ppm)..

Nature of the Residue (860.1300). Livestock.						
Matrix	Treatment Rate	% Identified	% Characterized	Parent Residue % TRR	Comments	
Desthioprothioconazole - Lactating Goat (Dosing was for 3 days, 10 mg/kg body weight) Phenyl-UL- ¹⁴ C MRID No. 462462-01						
- Muscle	195 ppm (feed)	66.28	10.73	1.76	TRR (ppm) was 0.266 ppm in muscle sample and 0.205 ppm in muscle extracted used for HPLC analysis.	
-Milk	195 ppm (feed)	71.77	16.74	----	TRR (ppm) was 0.286 in combined milk samples and 0.253 ppm in milk extracted used for HPLC analysis.	
- Fat	195 ppm (feed)	75.1	9.04	0.032	TRR (ppm) was 0.231 ppm in fat sample and 0.195 ppm in fat extracted used for HPLC analysis.	
- Kidney	195 ppm (feed)	71.89	14.50	7.66	TRR (ppm) was 18.975 ppm in kidney samples and 16.392 ppm in kidney extracted used for HPLC analysis.	
- Liver	195 ppm (feed)	59.89	10.99	31.18	TRR (ppm) was 18.421 ppm in liver sample and 13.057 ppm in liver extracted used for HPLC analysis.	
- Urine	195 ppm (feed)					
- Feces	195 ppm (feed)					

Nature of the Residue (860.1300) - Livestock.						
Matrix	Treatment Rate	% Identified	% Characterized	Parent Residue % TRR	Comments	
Prothioconazole Lactating Goat (Dosing was for 3 days, 10 mg/kg body weight) Phenyl-UL ⁻¹⁴ C MRID No. 462462-01						
- Muscle	246 ppm (feed)	44.69	12.01	13.37		
-Milk		29.10	38.94	0.89		
- Fat		52.41	8.48	13.31		
- Kidney		70.78	7.13	17.97		
- Liver		53.59	13.77	12.94		
- Urine		??	??	??		
- Feces		??	??	??		
Prothioconazole - Lactating Goat (Dosing was for 3 days, 10 mg/kg body weight) Triazole-UL ⁻¹⁴ C MRID No. 462461-50						
- Muscle	195 ppm (feed)	64.53	10.93	7.17	TRR (ppm) was 0.117 ppm in muscle sample and 0.089 ppm in muscle extracted used for HPLC analysis.	
-Milk	195 ppm (feed)	61.30	10.97	---	TRR (ppm) was 0.150 in combined milk samples and 0.109 ppm in milk extracted used for HPLC analysis.	
- Fat	195 ppm (feed)	74.99	---	16.12	TRR (ppm) was 0.174 in combined milk samples and 0.131 ppm in milk extracted used for HPLC analysis.	
- Kidney	195 ppm (feed)	84.09	8.05	19.50	TRR (ppm) was 4.507 ppm in kidney samples and 4.153 ppm in kidney extracted used for HPLC analysis.	
- Liver	195 ppm (feed)	64.21	17.49	14.09	TRR (ppm) was 6.248 ppm in liver samples and 5.104 ppm in liver extracted used for HPLC analysis.	
- Urine	195 ppm (feed)	??	??	??		
- Feces	195 ppm (feed)	??	??	??		
Prothioconazole - Laying Hen (Dosing was for 3 days, 10 mg/kg body weight) Phenyl-UL ⁻¹⁴ C MRID No. 462462-02						
- Liver	171 ppm (feed)	61.74	10.63	24.76	TRR (ppm) was 4.017 ppm in liver samples and 2.907 ppm in liver extracted used for HPLC analysis.	
-Egg	171 ppm (feed)	42.56	10.40	3.57	TRR (ppm) was 0.036 ppm in egg samples and 2.907 ppm in egg extracted used for HPLC analysis.	

Nature of the Residue (860.1300) - Livestock.						
Matrix	Treatment Rate	% Identified	% Characterized	Parent Residue % TRR	Comments	
- Muscle	171 ppm (feed)	41.94	11.71	11.33	TRR (ppm) was 0.089 ppm in muscle samples and 0.047 ppm in muscle extracted used for HPLC analysis.	
- Fat	171 ppm (feed)	84.11	----	30.33	TRR (ppm) was 0.450 ppm in fat samples and 0.379 ppm in fat extracted used for HPLC analysis.	
Prothioconazole- Laying Hen (Dosing was for 3 days, 10 mg/kg body weight) Triazole-UL - ¹⁴ C MRID No. 462462-03						
- Liver	163 ppm (feed)	72.3	12.0	30.7	TRR (ppm) was 3.531 ppm in liver samples and 3.017 ppm in liver extracted used for HPLC analysis.	
- Egg	163 ppm (feed)	71.4	10.4	3.4	TRR (ppm) was 0.050 ppm in egg samples and 0.041 ppm in egg extracted used for HPLC analysis.	
- Muscle	163 ppm (feed)	67.6	11.3	2.5	TRR (ppm) was 0.122 ppm in muscle samples and 0.097 ppm in muscle extracted used for HPLC analysis.	
- Fat	163 ppm (feed)	82.3	5.9	15.9	TRR (ppm) was 0.290 ppm in fat samples and 0.256 ppm in fat extracted used for HPLC analysis.	

Analytical Method RPA JA/03/01 LC-MS/MS (860.1340)							
Matrix	Fortification levels (ppb)	Sample size (n)	Recoveries (%) (JAU6476)	Recoveries (%) (JAU6476-desthio)	Recoveries (%) (JAU6476-sulfonic acid)	Extraction Efficiency, % (Radiovalidation)	LOQ (ppm)
Tolerance Enforcement in MRID No. 462462-06							
Canola							
Canola seed	20 & 100	n=22	80-89	90-99	93-102		0.02
Meal	20 & 100	n=12	82-88	93-100			0.02
Oil	20	n=6	80-85	89-95			0.02
Dried peas	100	n=4	87	100-102			0.05
Dried peas	50, 100 & 1000	n=18	80-88	86-99	78-94		0.05
Peanut							
Peanut nutmeat	20 & 100	n=18	81-89	90-97	89-98		0.02
Hay	100 & 500	n=12	79-84				0.02
Meal	20 & 300	n=12	80-84	96-100			0.02
Oil	20 & 100	n=6	74-80	95-100			0.02
Dry roasted nuts	20 & 100	n=12	77-82	89-93			0.02
Peanut butter	20 & 100	n=12	82-87	93-102			0.02
Mustard greens	50	n=6	84-86	105-106			0.05
Turnip Roots	50	n=6	91-95	105-109			0.05
Turnip tops	50	n=6	87-88	102-104			0.05
Sugar beet tops						35 %	
Sugar beet roots						58 %	
Wheat							
- Grain	20, 100, 200 & 250	n=86	66-91	85-109	89-99		0.02
- Polished grain	20 & 200	n=12	79-98	99-101			0.02
- Forage	50, 1000 & 15,000	n=28	68-85	87-106	84-91	24 %	0.05

Analytical Method RPA JA/03/01 LC-MS/MS (860.1340)							
Matrix	Fortification levels (ppb)	Sample size (n)	Recoveries (%) (JAU6476)	Recoveries (%) (JAU6476-desthio)	Recoveries (%) (JAU6476-sulfonic acid)	Extraction Efficiency, % (Radiovalidation)	LOQ (ppm)
- Hay	50, 1000 & 7000	n=46	71-106	94-105	77-97	14 %	0.05
- Straw	50, 100, 1000, 2000 & 2500	n=46	77-91	83-102	88-99	15 %	0.05
- Hulls	100 & 1000	n=12	75-79	98-105			0.1
- Bran	20 & 200	n=24	79-86	103-105			0.02
- Flour	20 & 200	n=12	69-84	101-107			0.02
- Germ	20 & 200	n=12	72-86	90-101			0.02
- Middlings	20 & 200	n=12	77-93	100-110			0.02
- Shorts	20 & 200	n=12	86-91	101-111			0.02
- Aspirated grain	250 & 12,500	n=12	82-85	96-102			0.25
Bovine (Analytical Method LC-MS/MS) MRID No. 462462-04							
	Fortification levels (ppm)	Sample size (n)	Recoveries (%) (JAU6476)	Recoveries (%) (JAU6476-desthio)	Recoveries (%) (JAU6476-sulfonic acid)	LOQ (ppm)	
- Fat	0.05 & 0.08	n=7	83-93	91-104		0.05	
- Kidney	0.01, 0.05 & 0.08	n=10	77-109	92-111		0.01	
- Liver	0.01 & 0.6	n=7	89-101	104-117		0.01	
- Muscle	0.01	n=4	91-92	100-106		0.01	
- Milk	0.005 & 0.01	n=18	99-107	91-116	97-100	0.005	
- Skim milk	0.01	n=3	102-103	97-100		0.01	
- Cream	0.01	n=3	98-104	103-112		0.01	
Data Collection							
Same as tolerance enforcement							

Independent Laboratory Validation (860.1340) MRID No. 462462-09					
Matrix	Fortification levels (ppm)	Recoveries (%) (JAU6476)	Recoveries (%) (JAU6476-desthio)	Recoveries (%) (JAU6476-sulfonic acid)	LOQ (ppm)
Peanut					
Nutmeat	0.02 & 0.1	90, 119, 96, 69 (ave 94)	73, 81, 67, 76 (ave 74)	83, 101, 78, 82 (ave 86)	LOQ: 0.02
Wheat					
Forage	0.05 & 10	83, 89, 100, 95 (ave 92)	87, 90, 90, 88 (ave 89)	73, 73, 83, 81 (ave 77)	LOQ: 0.05
MRID No. 462462-07					
		Recoveries (%) (JAU6476)	Recoveries (%) (JAU6476-desthio)	Recoveries (%) JAU 6476-4-hydroxy	
Milk	0.005, 0.01 & 0.05	98 - 105 (n=15)	96-105 (n=15)	98- 104 (n=15)	LOQ:0.005
Liver	0.01 & 0.5	69-98 (n=15)	71-107 (n=15)	67-100 (n=15)	LOQ: 0.01

Multiresidue Analytical Method (860.1360) MRID No. 462462-10	
Matrix	Summary of Results
Wheat hay (Protocol E) Ground Beef (Protocol F)	Triazolyalanine: no acceptable solvent was found to dissolve triazolyalanine. Thus, no testing of triazolyalanine was attempted. Prothioconazole, desithio-prothioconazole, and JAU6476-4-hydroxy, and triazole do not naturally fluoresce, so testing through Protocol A was not performed. Triazolyacetic acid: Although this compound does naturally fluoresce, it did not have adequate sensitivity to perform testing. Protocol F: prothioconazole, desithio-prothioconazole, and JAU 6476-4-hydroxy exhibited unacceptably low recoveries in wheat hay. However, acceptable recoveries were obtained for desithio-prothioconazole from ground beef.

Storage Stability (860.1380) MRID No. 462462-11						
Matrix	Temperature (°C)	Duration (days)	1,2,4-triazole Recovery Range (%)	Triazolyalanine Recovery Range (%)	Triazolyacetic Acid Recovery Range (%)	Do residues appear to be stable?
Wheat						
- wheat, forage	-15	198	67 - 102	90 - 104	88 - 98	yes
- wheat, grain		189	92 - 101	79 - 92	67 - 104	yes
- wheat straw		189	85 - 104	83 - 101	72 - 95	yes
- wheat flour		196	85 - 101	68 - 106	61 - 102	yes
- wheat, bran		198	74 - 101	83 - 107	91 - 125	yes
Tomato						
- tomato, fruit	-15	193	83 - 106	91 - 112	93 - 98	yes
- tomato, paste		230	92 - 105	88 - 108	90 - 111	yes
Canola						
- canola, seed	-15	190	58 - 100	67 - 79	86 - 93	slight decline (triazole) otherwise yes
- canola, oil		231	88 - 92	69 - 95	81 - 95	yes
- canola, meal		190	89 - 108	87 - 108	85 - 102	yes
Miscellaneous						
- mustard, greens	-15	193	73 - 107	84 - 104	89 - 106	yes

Storage Stability (860.1380) MRID No. 462462-11						
Matrix	Temperature (°C)	Duration (days)	1,2,4-triazole Recovery Range (%)	Triazolylalanine Recovery Range (%)	Triazolylacetic Acid Recovery Range (%)	Do residues appear to be stable?
- turnip roots	-15	196	83 - 110	91 - 100	93 - 100	yes

Storage Stability (860.1380) MRID No. 462462-39					
Matrix	Temperature (°C)	Duration (days)	Prothioconazole Recovery Range (%)	Desthio-prothioconazole Recovery Range (%)	Do residues appear to be stable?
Wheat					
- wheat, forage	-18	1080	44-100 (not stable)	100-117 (stable)	No
- wheat, grain		1080	50-100 (not stable)	86-114 (stable)	No
- wheat straw		1080	58 - 100 (not stable)	89-114 (stable)	No

Storage Stability (860.1380) MRID No. 462462-19				
Matrix	Temperature (°C)	Duration (days)	prothioconazole Recovery Range (%)	Do residues appear to be stable?
- wheat, forage	-15	1049	92-95	yes
- wheat, hay		1078	91-97	yes
- wheat straw		1077	90-94	yes
- wheat grain		1077	65-71	no - slight decline
- tomato, fruit	-15	1079	78-81	yes
- mustard greens	-15	1078	85-88	yes
- turnip roots	-15	1078	82-84	yes
- canola seed	-15	1079	82-83	yes

Meat, Milk, Poultry, and Eggs (860.1480)					
Matrix	Feeding Level, ppm (Exaggeration)	Parent Max. Residue Level, ppm	Desthio-metabolite Max. Residue Level, ppm	4-hydroxy metabolite Max. Residue Level, ppm	Total Max Residue Level, ppm
Ruminant dosed with prothioconazole, MRID No. 462462-13					
Proposed Tolerance Level, ppm					

- Whole Milk	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	NR 0.0026 0.0061	NR <0.001 (LOQ) <0.001	NR <0.003 (LOQ) <0.003	NR <0.005 0.006	0.006
- Skim Milk	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	NR NR 0.0039	NR NR <0.002 (LOQ)	NR NR <0.002 (LOQ)	NR NR <0.01	N/A
- Cream	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	NR NR 0.0053	NR NR <0.004 (LOQ)	NR NR <0.004 (LOQ)	NR NR <0.01	N/A
- Muscle	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	NR 0.0028 0.0074	NR <0.001 (LOQ) <0.001	NR 0.004 0.009	NR <0.01 0.01	0.01
- Fat	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	<0.012 (LOQ) 0.0191 0.0617	<0.005 (LOQ) <0.005 0.0075	<0.008 (LOQ) <0.008 0.022	<0.05 <0.05 <0.05	0.1
- Liver	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	0.0631 0.1197 0.4673	0.0070 0.0113 0.0297	0.0539 0.1807 0.5175	0.10 0.28 0.80	1.2 (meat byproducts))
- Kidney	9.9 (0.5X) 29.5 (1.5X) 98.4 (5.0X)	0.0622 0.1759 0.7901	0.0030 0.0054 0.0114	0.0168 0.0633 0.3555	0.07 0.21 0.80	1.2 (meat byproducts))
All samples except fat were stored for less than 30 days prior to analysis. Fat sample were stored for approximately 90 days prior to analysis. Storage stability data for residues of parent, the desthio metabolite and the 4-hydroxy metabolite in fat for approximately 90 days were included within this study report.						

Meat, Milk, Poultry, and Eggs (860.1480)						
Matrix	Feeding Level, ppm (Exaggeration)	3-OH-DT Max. Residue Level, ppm	4-OH-DT Max. Residue Level, ppm	Desthio-prothio Max. Residue Level, ppm	Total Max Residue Level, ppm	Proposed Tolerance Level, ppm
Ruminant dosed with desthio - prothioconazole, MRID No. 462462-14						
- Whole Milk	4.0 (1.3X) 25 (7.3X) 100 (31X)	NR 0.0012 0.0115	NR 0.0006 0.0043	NR 0.0043 0.0068	NR <0.004 0.021	0.006
- Muscle	4.0 (1.3X) 25 (7.3X) 100 (31X)	0.0002 0.0015 0.0125	0.0002 0.0013 0.0076	0.0004 0.0011 0.0065	<0.01 <0.01 0.03	0.01
- Fat	4.0 (1.3X) 25 (7.3X) 100 (31X)	0.0006 0.0032 0.0298	0.0008 0.0043 0.0236	0.0009 0.0107 0.0905	<0.01 0.02 0.14	0.1
- Liver	4.0 (1.3X) 25 (7.3X) 100 (31X)	0.0132 0.0548 0.2999	0.0095 0.0369 0.1711	0.0303 0.1777 0.4340	0.05 0.26 0.63	1.2 (meat byproducts))
- Kidney	4.0 (1.3X) 25 (7.3X) 100 (31X)	0.0090 0.0635 0.4771	0.0192 0.0853 0.3833	0.0082 0.0326 0.2366	<0.01 0.03 0.24	1.2 (meat byproducts))
All samples were stored for less than 30 days prior to analysis.						

Confined Rotational Crops (860.1850) [Phenyl -UL ⁻¹⁴ C] JAU6476; MRID No. 462462-25						
Matrix	Treatment Rate	PBI, days	% Identified	% Characterized	Parent Residue % TRR	Total radioactive residue (TRR) (ppm)
Wheat						
-grain	660 g/ha	28	5.6	20.9	nd (not determined)	TRR: 0.007
	660 g/ha	146				TRR: nd
	660 g/ha	269				TRR: nd
-forage	660 g/ha	28	48.0	11.3	2.0	TRR: 0.021
	660 g/ha	146	64.4	5.3	0.9	TRR: 0.062
	660 g/ha	269	51.7	5.4	0.7	TRR: 0.04
-hay	660 g/ha	28	64.1	5.9	2.0	TRR: 0.114
	660 g/ha	146	60.3	6.7	1.2	TRR: 0.135
	660 g/ha	269	69.6	9.7	0.6	TRR: 0.160
-straw	660 g/ha	28	66.0	17.2	0.9	TRR: 0.45
	660 g/ha	146	58.5	16.4	0.4	TRR: 0.307
	660 g/ha	269	54.6	32.4	nd	TRR: 0.312
Turnips						
- Mature Tops	660 g/ha	28	77.2	4.0	nd	TRR: 0.046
	660 g/ha	146	55.5	22.4	0.9	TRR: 0.028
	660 g/ha	269	49.6	24.2	nd	TRR: 0.036
- Mature Roots	660 g/ha	28	71.0	9.5	0.8	TRR: 0.043
	660 g/ha	146	55.7	11.9	nd	TRR: 0.031
	660 g/ha	269	57.9	13.0	nd	TRR: 0.015
Swiss chard						
	660 g/ha	28	72.8	13.5	nd	TRR: 0.039
	660 g/ha	146	50.5	25.4	nd	TRR: 0.053
	660 g/ha	269	34.4	21.7	nd	TRR: 0.021
Confined Rotational Crops (860.1850) [Triazole-3,5 -UL ⁻¹⁴ C] JAU6476; MRID No. 462462-26						

Matrix	Treatment Rate	PBI, days	% Identified	% Characterized	Parent Residue % TRR	Total radioactive residue (TRR) (ppm)
Wheat						
-grain	204 g/ha	30	89			TRR: 3.806
	204 g/ha	125	81			TRR: 4.136
	204 g/ha	366	93			TRR: 5.875
-forage	204 g/ha	30	88			TRR: 0.251
	204 g/ha	125	88			TRR: 0.575
	204 g/ha	366	88			TRR: 0.439
-hay	204 g/ha	30	86			TRR: 2.224
	204 g/ha	125	84			TRR: 2.58
	204 g/ha	366	87			TRR: 2.016
-straw	204 g/ha	30	82			TRR: 1.695
	204 g/ha	125	72			TRR: 1.361
	204 g/ha	366	84			TRR: 1.597
Turnips						
- Mature Tops	204 g/ha	30	91			TRR: 0.131
	204 g/ha	125	92			TRR: 0.507
	204 g/ha	366	92			TRR: 0.084
- Mature Roots	204 g/ha	30	90			TRR: 0.059
	204 g/ha	125	96			TRR: 0.442
	204 g/ha	366	87			TRR: 0.061
Swiss chard						
-leaves	204 g/ha	30	93			TRR: 0.188
	204 g/ha	125	74			TRR: 0.047
	204 g/ha	366	89			TRR: 0.129

Field Rotational Crops (860.1900) MRJD No. 462462-27

Matrix	Treatment Rate lb ai/A	Plantback Interval (PBI) days	Maximum Residue (ppm)
Wheat			
-grain	0.72	28-30	0.01 ^a (3.465) ^b
-forage	0.72	28-30	0.025 (1.174)
-hay	0.72	28-30	0.025 (2.025)
-straw	0.72	28-30	0.025 (0.719)
Mustard green			
	0.72	28-34	0.025 (0.313)
Turnips			
-Roots	0.72	28-34	0.025 (0.567)
-Tops	0.72	28-34	0.025 (0.484)

^aTotal JAU6476^bTotal triazole**Remarks:**

1. Data are available electronically
2. Storage stability data are required for residues in a nonoily grain (i.e., wheat, rice, or barley), an oilseed (i.e. canola or peanut), mustard greens, and turnips for approximately 1200 days and for residues in dried pea and dried beans for approximately 525 days.
3. Storage stability data are required for residues in processed commodities of a nonoily grain (i.e., wheat or rice) and an oilseed (i.e. canola or peanut).

cc: W. Wassell, M.Xue, RAB3 Reading File



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Chemical: Prothioconazole

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